

Position of Climate Change and Desertification Issues on the Livelihoods of Indigenous Communities of Africa: Case Study of the Sahel Region and the Horn of Africa

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Abstract

This Sahel environment stretches all the way from Senegal to Somalia cutting across over ten Africa countries bordering the "Sahara desert" in the north and the "Sudan savannah" in the south, with an annual rainfall of less than 50cm per annum, with good agricultural output (production) as well as large grazing fields for pastoral activities is a home for so many indigenous communities like the Mbororo (Cameroon and Chad), Tuareg (Niger) and the Kanuris (Nigeria, Niger, Chad and Cameroon) who depend on pastoral activities, fishing, irrigation farming and mineral extraction as their main activities of livelihoods.

Keywords: Climate Change, Desertification, Indigenous Communities, Sahel Region, Horn of Africa, Biodiversity Loss, Lake Chad, Sustainable Development, Food Security, Traditional Knowledge.

Introduction

The Sahel and the Horn of Africa represent some of the most climate-sensitive regions in the world, characterized by semi-arid conditions, low annual rainfall, and high dependence on natural resources for livelihoods. Over the past few decades, the combined effects of climate change and desertification have severely impacted indigenous communities in these regions, threatening their economic stability, food security, and cultural heritage. The progressive encroachment of the Sahara Desert, recurrent droughts, and the shrinking of water bodies such as Lake Chad have exacerbated environmental and socio-economic vulnerabilities.

Indigenous groups such as the Mbororo, Tuareg, and Kanuri

rely heavily on pastoralism, fishing, and subsistence agriculture—activities directly affected by climatic variations and land degradation. Despite their adaptive traditional knowledge systems, limited institutional support and exclusion from global environmental decision-making processes have hindered effective responses to desertification.

This study aims to explore the interconnections between climate change, desertification, and the livelihoods of indigenous peoples across the Sahel and Horn of Africa. It highlights the urgent need for integrated policies, local participation, and sustainable management practices to mitigate environmental degradation and enhance resilience in these ecologically fragile zones.



Figure 1: Shows the map of Africa

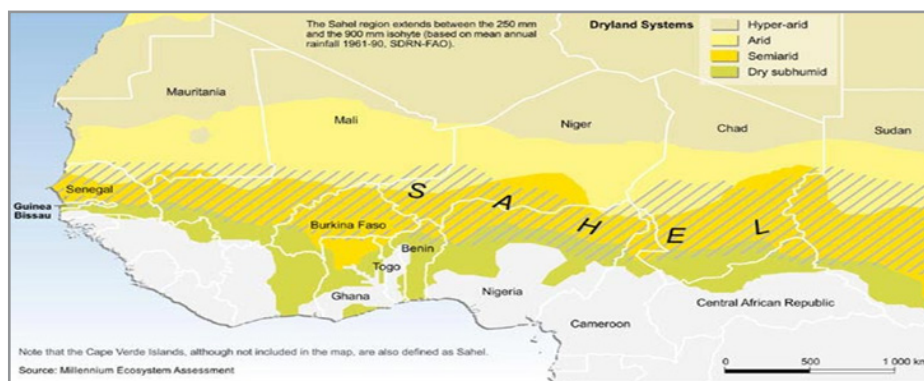


Figure 2: Shows the map of the West African Sahel region of Africa



Figure 3: Shows typical Sahelian environment

Desertification is a primary issue faced by these Sahelian communities; the indigenous communities are continuously losing their grazing fields, farmlands, and even villages to the encroaching "Sahara Desert" from the north. Indigenous communities in the Sahelian region are currently trying their best in control of the desert encroachment through tree-planting campaigns, small or local forestation projects and other programmes using traditional knowledge on their own, but yet the desert keeps expanding invading grazing fields, farms and even villages and towns. However, the UN does not currently recognize their contribu-

tions and does not include their participation in its desertification activities in the region. Loss of biodiversity, hunger, poverty and social insecurity are becoming the order of the day hence making Food security to be under threat from this because of losses in agricultural output as well as increases on job losses and unemployment.

It was also reported that the villages of Kaska, Buhari gana and Bukarti in the Sahel part of the North Eastern Nigeria were completely wiped out or buried under the desert between the years

1987-2005 as well as continuous appearances of new sand dunes in the fertile areas of this Sahel region from time to time and in various areas (B. Abubakar).

Some scientist have recently conducted research works, concluded and reported that the desert keeps expanding at present at the rate of 0.8 Kilometres per Annum (B. Abdullah, 2009). B. Abubakar 2009 also reported that some part of the Sahel would

be rendered uninhabitable in the next ten years and because the region provides about 40% of the protein requirements of the sub Saharan African region as a whole in the form of Beef, Fish, Beans, vegetables, Lamb and others if this desertification issue is not brought under control it will lead to continues hunger, famine, under nutrition, outbreak of diseases and even wars and social conflicts.



Figure 4: Showing the arable lands of the Sahel region metamorphosing into an arid land before finally becomes Sandy desert



Figure 5: Showing a real Sandy desert in the Sahara with its Sand Dunes.

Factors leading to the desertification in the Sahel region of Africa:

1. Cutting down of trees as a source of fuel for cooking, economic and other socio-cultural activities.
2. Bush burning, clearing of trees and shrubs by grains farmers.
3. Overgrazing by nomadic cattle herders.
4. Climate Change.
5. Fast growing in populations, this leads to establishments of new settlements.
6. Lack of effective attention by the United Nations, relevant international organisation as well as other stakeholders in fighting the desertification issues.
7. Lack of strong shelter belts.

A second issue is the rapid decline in the volume of the water of the "Lake Chad" because this is main source of water supply, fishing and some other natural resources such as the potassium salt (potassium nitrate), in addition to irrigation and pastoral activities by the indigenous communities living in this part of the Sahel region especially along the shores of the lake.

The drying of the lake is caused by Climate change and the damming along the River Shari which supplies over 90 % of

the volume of water coming in to the Lake in the republic of Cameroon by the Cameroonian government in the quest for generating hydro electric power as well as part of their measures in adapting to climate change through improving and developing irrigational activities along the shores of the major feeder river and its tributaries. This has lead the Lake to drastically reduced to just 10 % of its original size of 25 000 km square in just three decades as reported by (B. Abubakar, 2008). Hence the situation is also leading to massive loss of biodiversity in the Sahel and increases in the rate of deforestation due to lack of alternative employment opportunities for the people depending on this Lake for their economic activities. Because over 40% of the Sahelian indigenous peoples depend on this Lake, so the more the Lake dries, the more the increases in poverty and unemployment which subsequently leading to massive incessant deforestation which brings about desert encroachment and desertification in this region.

Loss of traditional knowledge: the potassium salt or the potassium nitrates extracted from the Lake Chad is used by the indigenous or local communities of the this region for making so many types of traditional medicines especially in the treatments of stomach pains, diarrhoea, cholera and other related diseases, but however over the last two decades there has been an in-

crease in the above mentioned diseases due to the reduction in the salinity nature of the waters of the lake which is required for

the preparations of such traditional medicines.

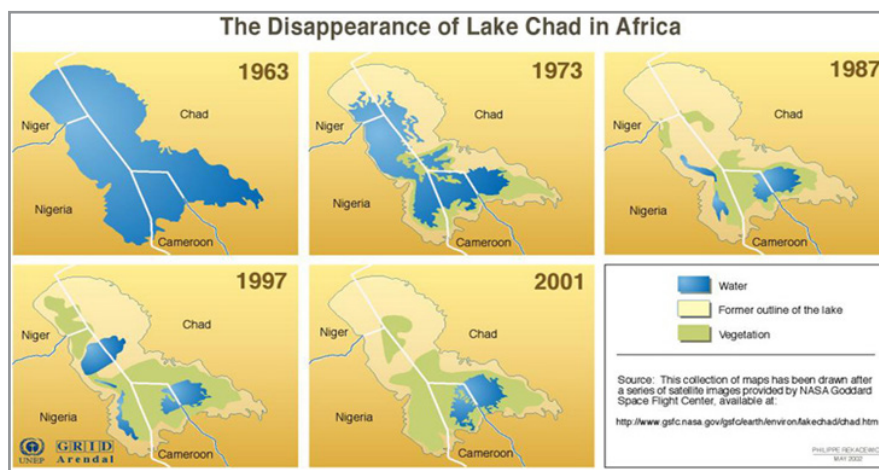


Figure 6: showing the map of the Drying Lake Chad at various stages.

Another major issue which is affecting this communities and aids in bringing the loss in biodiversity and desertification is the Climate Change.

Climate change is defined by Wikipedia encyclopaedia as a change in the statistical distribution of weather over periods of time that range from decades to millions of years. It can be a change in the average weather or a change in the distribution of weather events around an average (for example, greater or fewer extreme weather events). Climate change may be limited to a specific region, or may occur across the whole World.

The above description or definition of this climate change is a very good describing of the physical geography of the contemporary Sahel region to a tourist coming in to the Sahel region for the first time, due to the dynamic changes of climate phenomena in the region as described in the definition.

The average annual rainfall in many areas of the Sahel has been on the decline and fluctuations over the last 40 years.

The Annual Average is Now Below 50 cm (500 mm) Per Annum. In addition there is a significant physical increase in the harsh winds, sandstorms plus increases of the temperature from between 3 to 5 degree centigrade over the last 40n years.

In view of the above there are increases cases in climate change associated disasters in this region such as flooding, famine, hunger, diseases and many others. For example in September 2009 many lives and propertises were destroyed by the flooding; In total, around 430,000 people in Burkina Faso, Senegal, Ghana, Mali, Mauritania and Ivory Coast (Cote I devoir) have seen damage to their homes or are facing health risks linked to the lack of fresh water, deteriorating hygiene or other problems as reported by "Reuters – AlertNet" (<http://www.reliefweb.int/rw/rwb.nsf/db900SID/RMOI-7VMMC8?OpenDocument>)

Recommendation

1. The Sahelian governments via the African Union and UN development agencies such as CBD, UNDP, UNESCO, UNEP, FAO, and IFAD, to ensure the participation of the indigenous communities of the Sahel and the Horn in all

decision-making related to desertification, climate change, land and territory in Africa.

2. Indigenous issues should be mainstreamed into the UN Convention on Control of Desertification (CCD) and related desertification conventions. Indigenous peoples should be recognized as a 'major group' for the CCD Conference of Parties.
3. Recognition by African governments to communal lands and stopping to give lands and territories to bio-fuels.
4. Constructions of dams along all feeder rivers of the Lake Chad should be stopped. Just like Nigeria, all the other countries bordering Lake Chad should establish Lake Chad Development Authorities in their respective countries in order to promote irrigation and pastoral farmings in the Sahelian environment.
5. Cooperation with UNFCCC, UNESCO, CCD and CBD on traditional knowledge of biodiversity and sustainable development of arid areas in the Sahelian region; indigenous peoples must be involved in decision-making processes.
6. Relevant International conferences, workshops, seminars and other relevant or related events should increase the participation of the people coming for their Programs from this part of the word (the Sahel region) in order to participate and share knowledge for the development of all on the issues related to desertification.

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