

AN EMPIRICAL ANALYSIS OF CLIMATE CHANGE AND NATIONAL SECURITY IN NIGERIA.

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Abstract

The clash over grazing lands and water could become worse as the effects of climate change becomes more drastic; with direct implications not just internally, even for the region and wider globe. Equally, the adverse change in climate has also displaced lots of persons and seen to the loss of lives and lands to deadly sweeping floods across the country. Recent years have seen a growing trend of annual disastrous floods that have, and continue to destroying properties, while registering a high rate of casualties in almost all the states (regions) in Nigeria; an incident that has equally affected agriculture and food supply. Climate change has emerged as one of the most significant non-traditional security threats confronting Nigeria in the twenty-first century. The intensification of desertification in northern Nigeria, recurrent flooding in southern regions, and the dramatic shrinkage of Lake Chad have disrupted livelihoods, displaced populations, and heightened competition over scarce resources. These environmental problems intersect with weak governance structures, socio-economic inequalities, and identity politics to generate violent conflicts, particularly farmer–herder clashes and insurgency in the Northeast. It is becoming increasingly clear that a good number of other security challenges in Nigeria are connected, in very many ways to the effects of climate change as the country’s food production, infrastructure, arable lands, crime rates, transportation network, natural and human resources are susceptible to the adverse changes in the environment. Indeed, the adverse climate change in Nigeria is a crucial security concern worth addressing as it destabilizes state and human security both directly and indirectly. These emerging security problems and threats to Nigeria’s national security bring to mind the Paradox of growing, sleeping or undermined threats to public safety, and an urgent need to neutralize as well as build adaptive mechanisms against them while reforming Nigeria’s outdated and narrow-set security structure. Based on this reality, this study seeks to examine the phenomenon of climate change as an emerging and potentially serious security threat in Nigeria. Using Resource Conflict Theory as its analytical framework, this paper examines the relationship between climate change and national security in Nigeria. Drawing on secondary data and empirical studies, the study finds that climate change functions as a “threat multiplier,” worsening existing vulnerabilities rather than acting as a direct cause of conflict. Key findings reveal that (1) environmental degradation intensifies resource scarcity; (2) scarcity fuels communal violence and migration; (3) climate stress contributes indirectly to insurgent recruitment and internal displacement; and (4) climate-induced disasters strain state capacity and undermine economic stability. The paper argues that Nigeria’s traditional state-centric conception of national security is insufficient to address climate-induced threats. It recommends the integration of climate security into national defense planning, strengthened environmental governance, climate-resilient agriculture, and enhanced regional cooperation.

Keyword: Climate Change, National Security

Introduction

Climate change has increasingly been recognized as a non-traditional security threat, particularly in fragile states (United Nations Environment Programme [UNEP], 2011). In Nigeria, environmental degradation, especially desertification in the North and recurrent flooding in the South, has coincided with rising insecurity, internal displacement, and economic instability. The dramatic shrinkage of Lake Chad has disrupted farming, fishing, and pastoral livelihoods in the Northeast, a region simultaneously affected by insurgency involving Boko Haram. Similarly, farmer–herder conflicts in the Middle Belt have intensified amid increasing competition for land and water resources.(Okpara et al., [2015](#)).

While existing literature has examined climate change and conflict separately, this paper contributes to the growing body of knowledge by fusing empirical climate data with national security analysis in the Nigerian context, applying Resource Conflict Theory to explain how environmental scarcity interacts with institutional weaknesses, amplifying the concept of national security beyond only military threats to include environmental and human security dimensions; Providing a geopolitical zone–based analysis of climate-security dynamics across Nigeria. By doing so, the study connects environmental studies and security studies, demonstrating that climate change is not merely an ecological issue but a structural driver of national instability.

Climate change as the long-term shift in global temperatures and weather patterns, driven primarily by human activities like burning fossil fuels like coal, oil, and gas for energy, transport, and industry since 1800s. These activities release greenhouse gases, such as carbon dioxide and methane, which trap the sun’s heat and warm the planet, leading to a wide range of impacts including rising sea levels, more frequent and intense heatwaves, drought, and flooding. The main causes of Climate change therefore include: burning of fossil fuels, deforestation (cutting down forests removes trees that absorb carbon dioxide from the atmosphere and replaces them with lighter surfaces that increase the Earth’s reflectivity), industrial processes; which releases greenhouse gases, including fluorinated gases, as a byproduct of production. Also, agricultural practices, in which livestock releases methane, use of nitrogen-based fertilizers produces nitrous oxide emissions, and waste management; where landfills releases methane which further contribute to greenhouse effect. Recently, however, there has been a growing anxiety over the phenomenon for constituting a menace to the global security. Through industrial activities, scientific researches, etc., humans have tinkered with the earth surface so much that its procedures are being affected negatively; a development that has defied independent solutions but outright appeal to group or global commonsense approach.

The effect of Climate change which are being felt globally as global warming and other associated ills have created excessive rainfall when and where not required, and

devastating heat when and where not solicited. These environmental issues have been compelling countries to cooperate in the international system on how to tackle the problem of climate change. The forebearers of climate pollution need to be proactive in reducing the carbon emissions within their domains. So worrisome is the Climate change phenomenon to attract collective *Annual Financial Contributions by Developed Countries* to arrest the negative impacts in the developing countries. Hope is high that the Developed Countries would honor their pledge to pay the sum of \$100 billion dollars as annual financial commitments to developing countries to help curtail the devastating impact of climate change in their countries which are increasing drought, flooding, and changing rainfall pattern.

Zhang Haibin (2022) noted that Climate change has compelled China to embark on a series of drives to build on consensus and strengthening communication and coordination in international agreement such as the Paris Agreement in order to sustain development of the world. Obviously, Climate change is one of the most severe challenges faced by countries in the world. As such states from different parts of the globe are coming together to promote their interests because of the associated problems and consequences on global peace and security. It is due to this environmental menace that resources such as water, shelter, food, and environmental wellbeing are redefining relationships among nations for preservation both domestically and internationally, depending on the nature of the resources. As the challenges of insecurity continue to soar, cooperation for amelioration extend to air, atmosphere, surface, underground, water to hydrocarbons, oceans, bio-resources (floras and faunas), seas, rivers, lakes resources, etc. Currently, in furtherance of cooperation, there has been establishments of well-established resource-based organizations of sub-regional, bilateral and multilateral arrangements with limited jurisdiction in the areas that the resources are found (NEPAD Short -Term Plan, 2004).

Amongst the major global environment changes observed around the world in recent decades is the drying of Lake Chad. The strategic importance of the Lake Chad to food security and regional stability cannot be underscored. Owing to the menace of climate change, it has been noted that the Lake Chad's wetlands and resources have diminished by 70 percent within the past 50 years while the population depending on the region and its surrounding ecosystems for their livelihood has increased from 3.5 million in 1960 to over 45 million inhabitants in 2020 (LCBC website, 2022). In time past humans in pursuance of economic activities could effectively plant a crop and predict the gestation period and time of harvest with nearly 100 per cent accuracy. A successful harvest would pave way for the herders to graze from the left over in a systematic turn by turn or handing and taking over events occasioned by joyful payment of stipends by herders as settlements for grazing in the field that seldom attract any rancor or bickering. The same could be said of fishermen and hunters that would project the time to set their nets for catching fishes and gang-hunting to a high degree of accuracy due to fairly good

atmosphere. Other spheres of human endeavors such as sailing, mining activities, lumbering, and so on to a greater extent tied their survival to the abundance of water in the lake. Through consultation, collaboration and cooperation human activities in their natural environment were effectively carried on with great productivity achieved in peaceful co-existence that did not attract violations or register catastrophes.

This paper aims to examine how climate change constitutes an emerging non-traditional threat to Nigeria's national security and to analyze its implications for state stability, human security, and development.

The paper focuses on the six geopolitical zones in Nigeria: North East, North West, North Central, South East, South West, and South-South, by discussing climate trends (temperature rise, desertification, flooding, shrinking water bodies) Resource scarcity and communal violence Insurgency and extremism Internal displacement and food insecurity Institutional and policy responses

The study relies on secondary data from academic publications, policy documents, international reports, and empirical datasets. It does not conduct primary field surveys but synthesizes existing evidence to provide a national-level analytical framework.

Literature Review

The first point of interest when studying the phenomenon Climate change is on the unbearable heat, insufficient water and other environmental peculiarities. Usually, the availability of water or lack of it, and unpolluted air determines the possibility of human survival, plants and livestock that any given space can offer. In his work on resources and cooperation in the Nile Basin, Alan Nicol (2003) observed that cooperation is fostered more through water resources when he stated 'the history of conflicts or disputes over water resources is somewhat threadbare. Therefore, instances of cooperation and agreement far outstrip those of dispute and conflict... even though within the local level, conflict arise over the water resources for their daily need in a competitive environment where the need for water is high. To this he contended that, decision for cooperation and agreement at basin level should be made in a manner where benefits can be made available to local users through decisions that address water development for sustainable livelihoods and poverty reduction. Coming to the West Africa sub-region where four countries' survival; Cameroon, Chad, Niger, and Nigeria revolve around continue supply of water from Lake Chad for their agriculture and related business, Safiya(2023) noted that Lake Chad although seen as facilitating conflict among the locals, may have been facilitating cooperation amongst the co-riparian countries within the purview of international system. She stated that environmental issues have also been making states to cooperate in the international system especially on problems of climate change. States from different parts of the world are coming together to align their interests because of

the realization of the consequences of problem associated with the environment like climate change. Lack of cooperation would have serious negative implications for the security of states and their citizens. According to UNDP Report (2021) Lake Chad, once one of Africa's largest freshwater lakes and covering about 25,000 square kilometers in the 1960s, has shrunk by approximately 90 percent in size, now covering only about 2,000 square kilometers. The reduced inflow from rivers Chari and Logone, the primary sources of the lake's water, has also contributed to its shrinking, leading to severe socio-economic and security challenges for the surrounding regions, particularly in Borno State. Therefore, the menace of climate change and its antecedents are the primary reason for the herders' unsteady movement down south and prevalent farmer-herders clash, flooding, and desertification. Per excellence, explorers, scientists, geographers, and meteorologists attests to the essence of environmental preservation for a balanced ecology. As part of active measures to preserve environment globally, campaigns of trees planting are echoed the world over. In essence, the environmental analysts concur on active demonstration of frantic efforts at sensitization of the citizenry on approaches to conservation of soil, water resources, air pollution, and environmental sanitation.

In another work on Climate Change by Lukman Akintola (2022), Climate change has been seen as people versus planet debate in international development landscape. He stated that Climate change poses severe multiple threats to human existence through extreme weather events such as drought, heatwaves, rising sea levels, flooding, etc., to a level that challenges human existence. This further creates economic downturn, food insecurity, health crisis, water scarcity, temperatures and altered precipitation patterns, thereby directly impacting soil moistures, vegetation cover, and overall land productivity. He went further to say that despite that Africa contributed as little as 4 per cent of global emissions in 2021, more than 26 million people were forcibly displaced in Sub-Saharan Africa due to climate related diseases. While about 36.1 million people were affected by drought, over 16 million people could not access clean water and 20.5 million people were facing food insecurity and malnutrition respectively in the Horn of Africa alone. Presumably therefore, climate change has been driving the worst humanitarian crisis in Africa; making countries unable to guarantee human security which represent the broader thinking of "security" beyond the traditional perspective by the realist definition of national security as mere stationary of soldiers and equipment to wade off enemies' expansionism.

In order to appreciate the discourse on "security" at this point, David Whynes (1979) thought on Adam Smith's postulation on the 18th Century understanding of "security" was emphasized when he asserted that the provision of security from tax payers' money is the first duty of a sovereign. Elsewhere, it was stated that 'the security of a person, identity, group, nation or the world is not only a sacred and strategic value, it is the utmost value. Furthermore, section 14(2b) of the 1999 Constitution of Federal

Republic of Nigeria provides that ‘the security and welfare of the people shall be the primary purpose of the government’. It shall be the primary responsibility of the government to provide adequate protection to the citizenry in all terms that security can embrace. A broader discussion of the concept of security was recounted by OBCNwolise (2017) when he described security as a value every living thing holds in the highest esteem, including sovereign nations whose leaders can go to any length to protect it. He extends the discussion further by stating that “security is to preserve life, liberties, and estates. It is the prerequisite for any meaningful development, sustainable order, peace and social harmony...critical for attracting external investors...promote national productivity, national growth and development, as well as national greatness. Security ensures the smooth running of strategic installations such as electricity, military, aviation, shipping, etc.”. He noted that from the general day to day expression, security means safety.

Still talking security, Barry Buzan (1990) toes the line of modern approach to understanding security or what is being referred to as human security theory. In his line of reasoning, he regarded the concept as “being underdeveloped when narrowly restricted to mobilization of military for territorial expansion and protection, and need to be rehabilitated. That the military factor has dominated the concept of security for too long”. Put in a better frame, security has to embrace the reality of today’s challenges (that is bigger than wars of conquests) such as ravaging potency of poverty, diseases and squalor that are striking human race in the face. Substantiating further, J Garnet (1972) asserted that security is a very ambiguous concept from the Western countries parlance where they preach peace and security through amassment of weapon and armament. Timothy Imobighe refers to the Western countries understanding of security as “paxarmamenta” but professes and prefers peace and security by “pax mundi” which is security through satisfaction or provision of basic human needs that can help to remove poverty from the society.

Thinking aloud on issues of Climate change and National security at this moment of our national development is very crucial, as it will help the nation come out more united at evolving a common front or policy to combat the menace of Climate change. More significant is the fact that Nigeria today is being overwhelmed by general insecurity some of which were offshoots of the menace of Climate Change that have been threatening the nation’s democracy like the high spate of armed robbery, political assassinations, ethnic conflicts, separatist agitations, banditry and terrorism, herders and farmers clashes, and forceful migration. This paper intends to look at how the climate change, as a serious world problem, has posed a serious menace to Nigeria’s development. The paper will attempt to draw a Theoretical Framework for the topic, and make Conceptual Clarifications to facilitate easy understanding of subject matter. Thereafter, the paper will reveal the relationship between Climate change and Security in Nigeria. This will be

followed by a critical examination of effects of Climate change on National security. The paper will then highlight measures put in place by government to mitigate the effect of climate change in the country. Finally, the paper will conclude and make some recommendations.

Theoretical Framework and Conceptual Clarifications

In order to enhance better understanding and appreciation of subject, it is necessary to situate the discuss within the prism of a Theoretical Framework to aid proper analysis. A lot of theories are handy for critical and analytical explanation of climate change phenomenon and its nexus to Nigeria national security. Such theories include amongst others; the Systemic/Functionalism Theory, Neo-Functionalism, Idealism, Game Theory, Constructivism, Securitization, Conspiracy Theory, and Resource-Conflict Theory, etc. However, it is within the purview of securitization and resource-conflict theories that the theoretical frame work for this paper finds appropriateness because they respectively render easy perception of subject and offers elaborate explanation to the problems emanating therein. Briefly explained, resource-conflict theory views the society as a breeding ground of competition for limited resources, power, and status among different groups, leading to inequality and social conflict.

The analysis is grounded in Resource Conflict Theory, particularly the work of Thomas Homer-Dixon. The theory argues that environmental scarcity caused by supply-induced degradation, demand pressures, and structural inequalities can increase the likelihood of violent conflict in weak states (Homer-Dixon, [1994](#), [1999](#)).

According to Homer-Dixon ([1999](#)), environmental stress interacts with political and economic conditions to produce social instability. This framework guides the empirical analysis of Nigeria's climate-security nexus.

iii. Climate Change Trends in Nigeria

Empirical evidence shows:

Rising temperatures across northern Nigeria.

Recent climatological studies consistently show an upward trend in average temperatures in Nigeria, with the Northern region experiencing stronger warming than other zones. Using long-term observational data and statistical trend tests such as Mann-Kendall and Sen's slope estimators, researchers found that temperature increases in semi-arid and desert zones like Kano and Kukawa are statistically significant (e.g., [0.0443](#) °C/year and [0.0412](#) °C/year respectively) compared with historic baselines reflecting significant climatic warming across core northern stations. These findings imply prolonged heat

stress conditions and an increased likelihood of drought spells in the northern ecological belts. (Iyeme et al, [2024](#))

Such temperature increases align with broader regional climate signals reported in West Africa, where heat waves and extended hot seasons have become more frequent, especially during pre-monsoon months(Johnson, 2024)

Increased desert encroachment in the Sahel region.

Northern Nigeria, particularly states on the Sahel fringe like Yobe, Katsina, and parts of Sokoto, has shown increasing desertification driven by climate variability and human pressures. Empirical assessments using spatial risk indices such as the Composite Desertification Risk Index (CDRI) reveal much higher desertification risk values in Sahel-zone local government areas compared with southern savanna zones. These spatial risk data confirm that certain northern communities are approaching or exceeding critical ecological thresholds for land degradation. (Abiodun, 2026).

National estimates also suggest Nigeria loses about [350,000](#) ha of land annually to desert encroachment, affecting more than 40 million people and threatening livelihoods and food production in 11 northern states. Qualitative reporting further supports these findings: documentary evidence from satellite and ground observations indicates sharply declining vegetation cover and surface water in Sahel border zones, with sand dunes advancing into previously fertile agricultural land. (Olorundenro, 2025)

Severe flooding events in multiple states.

Nigeria has experienced increasing frequency and severity of flood disasters over the past decade, with empirical data showing repeated large-scale flooding events coinciding with erratic rainfall patterns and intense storms phenomena attributed in part to climate-change-induced variability in precipitation and monsoonal dynamics. Notable events include the [2022](#) nationwide floods which displaced more than [1.4](#) million people and caused extensive economic damage, as well as more recent [2024-25](#) floods in Borno and Mokwa that resulted in hundreds of fatalities and mass displacement. (Lawson, 2025)

News reports and emergency assessments confirm that heavy rainfall events often clustered within short periods are driving flash floods and river overflows in both northern and central states, underscoring the heightened vulnerability of Nigerian river basins to extreme weather events. (AP News, 2025)

Significant shrinkage of Lake Chad since the [1960s](#) (Okpara et al., [2015](#)). The Intergovernmental Panel on Climate Change (IPCC, [2022](#)) confirms that West Africa is highly vulnerable to climate variability, with projected increases in extreme weather

events.

These environmental changes have reduced agricultural productivity and pastoral viability in northern Nigeria.

iv. Resource Scarcity and Communal Violence

Empirical studies link climate variability with increased farmer–herder clashes in Nigeria’s Middle Belt (Adano et al., [2012](#); Raleigh & Kniveton, [2012](#)). Desertification reduces available grazing land, prompting pastoral migration southward. Competition over land and water intensifies tensions between pastoralists and farmers.

Conflict databases show rising fatalities from farmer–herder violence over the past decade. While not solely caused by climate change, scarcity exacerbates existing ethnic and political tensions. This supports Homer-Dixon’s ([1994](#)) argument that environmental scarcity increases conflict risk where governance institutions are weak.

v. Climate Stress and Insurgency

The socio-economic collapse around Lake Chad has undermined fishing and farming livelihoods (Okpara et al., [2015](#)). Scholars argue that such economic marginalization creates recruitment opportunities for extremist groups, including Boko Haram (UNEP, [2011](#)). While climate change is not a direct cause of insurgency, it contributes to structural vulnerabilities that armed groups exploit.

vi. Internal Displacement and Food Insecurity

Nigeria has one of the largest populations of internally displaced persons (IDPs) in Africa. Many displacements result from:

Farmer–herder clashes, Insurgency in the northeast, Flood disasters. Climate variability also contributes to food insecurity, particularly in northern Nigeria, where rain-fed agriculture dominates (IPCC, [2022](#)). Reduced food production increases poverty and social grievances, undermining national stability.

Resource Conflict Theory provides a useful framework for explaining the relationship between climate change and national security in Nigeria. The theory argues that environmental degradation produces resource scarcity, which increases competition among social groups and heightens the risk of violent conflict, particularly in states with weak institutions (Homer-Dixon, [1994](#), [1999](#)). In Nigeria, climate change has intensified resource scarcity, contributing to communal violence, insurgency, and broader national security challenges.

Resource Conflict Theory: The Core Argument

Resource Conflict Theory, developed prominently by Thomas Homer-Dixon, argues that environmental scarcity arises from three main sources:

1. Supply-induced scarcity (environmental degradation),
2. Demand-induced scarcity (population growth), and
3. Structural scarcity (unequal resource distribution) (Homer-Dixon, [1999](#)).

The theory maintains that environmental stress does not directly cause violent conflict but interacts with socio-political and economic vulnerabilities to increase the likelihood of instability (Homer-Dixon, [1994](#)).

Thus, the causal chain is:

Environmental Change → Resource Scarcity → Competition → Conflict → State Weakening

Climate Change and Resource Scarcity in Nigeria

Nigeria faces severe climate-related challenges, including desertification in the north, recurrent flooding in southern regions, and the shrinking of Lake Chad. The dramatic reduction of Lake Chad has negatively affected farming, fishing, and pastoral livelihoods (Okpara et al., [2015](#)). These environmental pressures represent supply-induced scarcity under Resource Conflict Theory. As grazing land and water resources decline, pastoralist communities migrate southward in search of survival opportunities.

Competition and Violent Conflict

The migration of pastoralists into Nigeria's Middle Belt has intensified competition with sedentary farming communities. This competition frequently escalates into violent clashes over land and water access (Adano et al., [2012](#)). According to Homer-Dixon ([1999](#)), scarcity can weaken local dispute-resolution institutions and deepen social cleavages. In Nigeria, ethnic and religious identities often overlap with occupational roles (e.g., pastoralists vs. farmers), increasing the likelihood of identity-based mobilization.

Furthermore, economic collapse around Lake Chad has created conditions that extremist groups such as Boko Haram exploit for recruitment (Okpara et al., [2015](#)). This demonstrates how climate-induced scarcity can indirectly contribute to insurgency.

National Security Implications

Traditionally, national security focuses on military threats. However, environmental security scholars argue that climate change functions as a "threat multiplier," particularly in fragile states (United Nations Environment Programme [UNEP], [2011](#)).

In Nigeria, climate-related conflicts have contributed to Increased internal displacement, Food insecurity, Communal violence, Expansion of insurgent activities, Greater military involvement in domestic conflict zones. These developments weaken state capacity and undermine territorial control, thereby threatening national security.

Understanding Resource Conflict Theory

Resource Conflict Theory argues that scarcity or unequal distribution of essential resources (such as land, water, food, and energy) increases competition among groups, which can escalate into violent conflict and threaten state stability.

Key scholars such as Thomas Homer-Dixon emphasize that environmental scarcity (caused by climate change, population growth, or unequal access) weakens institutions and increases the likelihood of social unrest and violence.

Core assumptions of the theory:

1. Environmental degradation leads to resource scarcity.
2. Scarcity increases competition between groups.
3. Competition escalates into conflict where institutions are weak.
4. Conflict undermines national security and state stability.

2. Operationalizing Climate Change in Nigeria

In Nigeria, desert encroachment in the north and recurrent flooding in states like Kogi, Bayelsa, and Lagos demonstrate environmental stress.

3. Operationalizing National Security in Nigeria

National Security (Dependent Variable) can be measured through:

Incidence of armed conflict (farmer–herder clashes)

Terrorism and insurgency (e.g., Boko Haram activities in the Northeast)

Internal displacement (IDPs)

Food insecurity levels

Military expenditure

Political instability

Groups such as Boko Haram operate in regions severely affected by environmental degradation,

showing the link between ecological stress and insecurity.

4. Applying Resource Conflict Theory to Nigeria

Step 1: Climate Change → Resource Scarcity

Rising temperatures and desertification reduce grazing land.

Shrinking water sources limit access for farmers and pastoralists.
Flooding destroys farmlands.

Example:

The shrinking of Lake Chad has reduced water availability for fishing, farming, and herding communities.

Step 2: Resource Scarcity Competition

Fulani herders migrate southward in search of pasture.

Farmers in the Middle Belt depend on fixed agricultural land.

Both groups compete over land and water.

This competition intensifies in states like Benue, Plateau, and Kaduna.

Step 3: Competition → Violent Conflict

Farmer–herder clashes escalate.

Ethnic and religious identities politicize resource disputes.

Armed groups exploit grievances.

Weak governance and limited security presence worsen the situation.

Step 4: Conflict → National Security Threat

Increased casualties and displacement.

Growth of insurgency in fragile regions.

Reduced agricultural output and food security.

Strain on military and police forces.

Thus, environmental stress becomes a non-traditional security threat.

The concept National security has undergone serious transformation since the end of the cold war spanning 1945-1989. At that material time, National Security was conceptualized and practiced in terms of state-centered security maintained by force of arms, large armies and conquest of territories. The real time realist and theoretician Hans Morgenthau (1967) saw National Security from the capacity of States to maintain the integrity of its national territory and institutions. Security was defined from the militarist point of view, despite that security does not just mean defense. The security of the state involves military and paramilitary services like the Police, Custom, Immigration, Correctional Services, and mobilization efforts of the entire citizenry. Walter Lippman further amplified on this when he stated that National Security could rise and fall relatively to a nation's ability to deter an attack or defeat it. Put differently, Lippman viewed National security in the ability of a state to protect its core values by using a well-fortified military to deter all forms of aggression. Trends and evolution in strategy has since debunked the premise of the realist theory of national security as; old fashioned, narrow scope, and not to be taken seriously in any intellectual and strategic discourse. In view of the aforesaid, a new school of thought, often regarded as the modern or contemporary school, has surpassed the realist theory altogether by incorporating additional non-military factors in the definition of National Security. The rationality for jettisoning the realist view of national security was succinctly captured by Robert McNamara where he stated that "any society that seeks to achieve adequate military security against the background of acute food shortage, population explosion, low level of production and per capital income, low technological development, inadequate and inefficient public utilities, and chronic problem of unemployment, has a false sense of security... in a modernizing society, security means development, and without development there can be no security". On this premise, modern approach to security is firmly rooted in removing poverty from a state because it is the harbinger of unrest, internal upheavals, violence, and escalation of extremism. It is for this among other silent reasons that this group adopt the definition of Richard. I. Somiari (2020) for the paper because of its wider coverage when he stated that "National security is the requirement to maintain the security of the nation. It includes measure put in place by government to guard against political, economic, energy, food, environmental, health, communication, transportation and loss of territorial integrity. All countries face national security threats, including economic, youth unemployment, disease epidemic, extremism, terrorism, insurgency, drug cartels, child trafficking, cybercrime, corruption, trade imbalance and outright hostility from foreign governments". This definition encompasses all aspects of security as a concept including: economic security, social security, environmental security, food security, the equality of life security, and technological security. It is therefore broader, relevant and contextual.

Methodology

This study adopts a qualitative research design based on secondary data analysis. It assumes a descriptive and analytical method in analyzing climate change and national security in Nigeria

Sources of data collected

The paper relied mainly on secondary data, by utilizing articles on Peer-reviewed journals, government publications, reports from UNEP, IPCC, FAO, UNDP, conflict databases and climate assessments Policy documents such as Nigeria's Climate Change Act (2021)

As a global phenomenon, climate change has a lot of divergent geographical consequence in Nigeria which in turn have concomitant effects on food/human security of the country. There are six geopolitical zones in the country and the effects of climate change are felt relatively as; rising sea levels, flooding, heatwaves, bushfire, landslide, long raining period, drought, environmental degradation, and so on. In some community, the incidence brings untold hardship to the locals by curtailing their means of livelihood, damaged shelter, changed lifestyle, escalated conflict, low dignity, disrupted education, and aggravated human security. While a sizeable number of the communities' locals were forced to abandon their settlement, some embraced banditry and terrorism as alternative occupation(Abugu.l, 2020).It is therefore necessary to run a synopsis on the effects of climate change andon security in the six geopolitical zones of Nigeria since the effects are felt differently. These are examined subsequently:

North East: Climate change poses severe threats to food security in the North East. Increasing rainfall from 2001-2020, decreasing drought severity as 81 percent of the region have been experiencing normal very wet conditions between 2000-2020 leading to widespread flooding in Borno state between August and September 2024. There has been maximum temperature trend in Borno state that showed a slight increase between 1991-2020 compared to 1961-1990. In Yola, maximum temperatures are decreasing while minimum temperatures are increasing. The region's climate change has had a significant impact on the Lake Chad. The shrinking rainfall pattern is affecting the quality and quantity of yields in agricultural products. The alarming frequency of droughts and desertification in different parts of the northeast is disrupting food production patterns. Also, climate change induced armed conflict due to contest over receding space of arable land for farming and grazing rights between the farmers and herders. This has intensified socio-economic instability from year 2010 till the present time. According to Adeniji, A.

(2018), the drying up of Lake Chad has rendered millions of people jobless. While the pastoralists/herders are moving southwards the endanger species in any conflict situation, the women and children, become displaced. The ravaging terrorist groups; Islam in West African Province, and Ahlis Sunnah Liddawatiwa Jihadi, also Known as Boko Haram, have forced several people mostly the aged, women and children from northeast into three neighboring countries of Chad, Cameroon and Niger Republic as refugees (Adewole, A. 2023). Many lives have been lost and community destroyed. Water transfer projects, which involves building a large channel to divert water from the Congo River to the lake was muted. Also, improved water management through implementing ecological restoration projects and improving the efficiency of water use in the northeast is also being considered.

North West: The regime of climate change is felt badly in the North West. Although nearly all the northernmost part of this zone are arid in nature, hitherto, they received mandatory 3-4 months rainfall per year. Between 1960 and 2006, the average annual temperature in Nigeria increased by 0.8⁰C, with the north experiencing the greatest increase. NIMET (2021) reported increase in maximum temperature of about 4.8% per year instead of per decade. Sahara is encroaching southward by approximately 0.6 kilometer per annum. Communities in Zamfara, Sokoto, and Katsina report significant impacts on water access, displacement, and food prices. Farmers are using local adaptation methods such as planting trees to buffer desertification and using rice chaff to amend the soil. The emergence of regime of climate change in the regions 'landscape has turned despair for agricultural produce. There were instances of unwanted or excessive rainfall that does not allow the planted crops to sprout. Subsequently, a ravaging condition of heatwaves and drought spread over and caused the crops to wither. A particular incident of intense heat was captured in the Nigerian Centre for Disease Control (NCDC) report that indicated 282 people died of Cerebra Spina Meningitis (CSM), out of 1,966 suspected cases in that zone(Lukmon Akintola, 2022). Human security has repeatedly been challenged by indiscriminate tree felling for firewood that has given rise to erosion and bad topography, while illegal mining activities has further escalated the environmental hazards. Human insecurity is further heightened by increasing spate of Small and Light Weapon Arms deal for use in banditry, kidnapping that targeted schools for hostages and ransoms(Adelekan, I. O., Johnson, J., &Manda P, 2023). The arable land around the rivers and rivulets have become dens of bandits for collection of royalties from farmers and intended users.

North Centre: The Climate change data in the zone shows rising temperatures and mixed rainfall trends, with some areas experiencing decreases and others showing increases. Heath waves are becoming more frequent and intense, pushing daytime temperatures to dangerous levels in some states. The Research Gate Report shows that average rainfall has decreased by 3.5mm per month per decade, data of north central is mixed. Some

stations like Lokoja and Abuja now have increased rainfall, while Ilorin, Jos, and Kaduna have shown a decrease. Overall, there is a prediction for rainfall to rise by 0.58mm per annum. At peak of raining season rivers Niger-Benue overflows their banks and submerged the entire landscape along the rivers banks, damaging crops and rendering locals homeless. As observed, the effect of climate change has been responsible for the frequent southward movement of the herders in search of pastures at the peak of dry season to North Centre which is a meeting point of Rivers Niger and Benue that flows all the year round. As observed by Akevi, A. (2014), the periodic migration has escalated conflicts between the farmers and herders in the Jukun-Tiv community in Taraba State. This has caused the farmers to abandon their farmlands and leading to continuous food insecurity. The creation of IDP camps in this zone due to series of communal clashes has increased the rates of destitution and poverty.

South East: The impact of climate change started over a decade ago in the South East. The data indicates a rise in average temperature, with a rising trend observed between 1984 and 2014. The average annual rainfall in the region is about 2,013.71 mm with the highest amounts in the southern part of the region. The issue of flooding has been orchestrating population displacements, loss of farm produce- thereby causing hunger, ocean overflow and erosion menace in the region between Awka-Orlu uplands and Enugu-Awgu-Okigwe escarpment where gully erosion is a general problem. Despite the persistent problems of erosion and floods the region continue to produce tropical food crops(Nwaiwu et al., 2014: Nnadi et al, 2019). Flooding in the South-East Nigeria destroys farms and properties and increase disease conditions. High intensity rainfall, erratic/torrential rainfall, flash flooding, rainstorms and gustiness exacerbated flooding and erosion in the area resulted in landslides and loss of lives and properties. The impacts of flooding can be direct or indirect (Umar and Gray, 2023). Climate change which largely manifest in erosion and flooding is aggravating and wrecking buildings, roads and cropland/farmland. The gully erosion in Nanka Anambra state started forming around 1850 and it is one of the largest in Nigeria at 66 meters deep, 2,900 meters long, and 349 meters wide. The economic damage brought by the gullies in the region could be up to \$100 million every year with agricultural losses of 30-90 per cent in some areas. All these poses a major threat to achieving the Sustainable Development Goals in Nigeria. Community based interventions are relevant to sustain government initiatives to mitigate the effects of climate change, especially erosion and flooding in Southeast, Nigeria.

South West: The frequent heavy downpours during the raining seasons have been attributed to global warming. Lagos, Nigeria's economic hub is experiencing increase heat with forecasting reaching 33°C and as high as 36°C. fish farmers have recorded significant losses of up to 5,000 fish due to flooding and farmers are reporting negative production of cocoyam. Large volume of water released were not easily absorbed. This result into flooding, increased temperatures, and unpredictable rainfall patterns.

Geological factors; undulating topography, imperviousness of underlying lithology and river flood plain have been identified as some of the major causes of the flooding in the zone (OluseyiAdunolaBamisiaye).

The damage to lives, properties and disruption of agricultural activities in the affected areas has significantly increased. The changes in the region are threatening water security, infrastructure, and livelihoods, particularly in agriculture and fisheries. In some parts, there is prolonged periods of drought; leading to water scarcity. Another impact is from heatwaves now a growing concern as there are health implications.

South South: The South South is naturally a flood prone zone where all the rivers that flow as tributaries of Rivers Niger and Benue empty their contents into the Atlantic Ocean. Therefore, climate change is causing rising temperatures, increased flooding as the region usually receiving 4,000 mm of rainfall annually now see more, rising sea levels, coastal erosion, and extreme weather events, impacting public health through exacerbation of existing environmental pollution from oil and gas activities. ecosystems, and the economy. The zone's high annual rainfall is becoming more extreme and erratic leading to more frequent floods that damage homes, infrastructure, and agricultural lands. Environment are vulnerable to sea-level rise, poses a significant threat to the region's low-lying coastal areas and sensitive mangrove and rainforest ecosystem causing degradation, biodiversity loss, and displacement of communities.

Effects of Climate change on National security

A nation saddled with the menace of climate change and its afflictions is at crossroads of internal insecurity, poverty, and crisis of human survival. It is for this reason that the Federal Government has intensify campaigns against the use of fossil energy in order to reduce carbon emission. This is not without itches as the efforts have created low energy generation, unemployment, and low industrial output because few industries are operating on low-carbon generation machines. Green technology development has become a global trend and all nations of the world are now cooperating over the issues of control of carbon emission, acquisition of green technology and its transfer. Article 2 of the UNFCCC states that its ultimate objective is to achieve stabilization of greenhouse gas concentrations in the atmosphere and avert human caused interference with climate system. Also, Article 2 of the Paris Agreement specifies that global climate actions should hold the increase in the global average temperature to well below 2°C above pre-industrial levels and intensify efforts at keeping the temperature increase to 1.5°C above pre-industrial levels. This was necessary to significantly reduce risks impacts of climate change. Meanwhile, report by the international Energy Agency in 2022 showed global carbon dioxide emissions rose by 6 per cent in 2021 to 36.3 billion tons. Similarly, the Sixth Assessment Report by IPCC confirmed the earth surface temperature had hit 1.1°C above pre-industrial levels. Hence, escalation of heatwave that has been affecting every

part of the world alerts on approach of climate crisis. People in authorities are exposed to the challenge of managing problem of insecurity in the communities.

Climate change threatens Nigerian security by exacerbating conflict over dwindling resources, fueling mass displacement, and straining economic and social stability. Effects include food and water insecurity from unpredictable weather, which can lead to poverty and unemployment, particularly among the youth. This creates conditions ripe for internal conflicts, increased crime, and pressure on urban infrastructure. Next is the issue of resource scarcity and emanating conflict in distribution. Due to desertification, unpredictable rainfall, and rising temperature, there has been a persistent reduction in agricultural yields and access to natural resources, thereby increasing competition and tension between communities (Adams, M., Olaniyan, O., & Okoli, D. 2019). Environmental degradation, such as oil spills as witnessed in the Niger Delta is destroying means of livelihoods and creates grievances that can exacerbate livelihood conflicts. In addition, there are displacement and migration induced threats. Climate change impacts like flooding and drought force people to move usually from rural too crowded urban areas. This has been putting heavy strain on urban infrastructures, leading to growth of slums and creating new risks of crime, poverty, and social unrest. There can be insufficient plans for resettlement of the displaced people owing largely to paucity of funds. Yet, climate change has impacts on food security. Declining crop yields lead to food shortages and rising prices, which constitute a national emergency. As already observed, climate change has worsened economic disparities, leading to more poverty and unemployment among youth, and mounting spread of violence. Another aspect is in public health disasters due to stress, dehydration and reduced ability to access clean water and sanitation. The climate change and related challenges have weakened the Government's ability to provide essential services and opportunities, and the ability to manage the effects is limited. Lastly, climate change can stress the resources available to government by the need to address both climate-related disasters and existing security.

Also, the urge for construction of low carbon emission technology forms a major obstacle that hinder sustainable development of technology of some states/zones. There is unwillingness on the part of private enterprises and the public to use low-carbon technologies because of cost ineffectiveness. Agriculture and mining industries are the mainstay of Nigeria's economy and needed steadiness in production to generate national income to meet the national budget expenses for incoming year, which a switch to the new driven technologies could not guarantee. Microgrid and off PV systems are cost intensive to finance, and there has been frequent collapse of the grid power due to overload leading to venting of anger by poor and electricity-deprived population (Lukmon Akintola, 2022). The ruling party are mindful that accumulated public anger due to lack of electricity and other social infrastructures could be employed by opposition parties to instigate the citizenry, condemn security agencies for lack of capacity or

willingness to protect them through media propaganda, foreign bodies or outright assault. Also, acrimony due to accusations of mismanagement, misappropriation, and outright corruption/ embezzlement of funds allocated to execute some failed projects in the past has been discouraging the government from embarking on noble projects, a trend that could be mistaken for neglect by the masses. Therefore, poor management of climate change debacle could be employed as a political campaign tool against government at any level by the opposition in Nigeria. This could heighten insecurity and unnecessary loss of lives, properties damage of infrastructures, looting or stealing, etc. Other aspects could involve citizens taken to self-help, an indication of loss of capacity to discharge a primary duty, while the authorities divert available funds to support special security efforts and volunteers.

Depending on the insecurity prevalent in a geopolitical zone, rich citizens may institute reinforcement of physical security of homes for self-protection. There could be emergence of use of ethnic militias to protect community, with penchant defiance of security agencies 'authorities. This could pave way to political thuggery, brutality, wanton killings or intimidation. At the national or state level; there may be need for collaboration with friendly nations, organizations, ministries, agencies and influential corporate organizations or individuals for help technically, financially or structurally in order to ameliorate the scourging effects of climate change, and foster development of needy areas. The existing law enforcement agencies, and leading ministry or departments for preservation of environment could be labeled as incompetent, while the political opponents could escalate informal meetings and campaigns of calumny against the ruling party. At this point, Nwolise (2017) noted that there may be capital flight by foreign investors who could relocate to more investment friendly countries. The political leaders could be confronted with credibility/ legitimacy problems from hostile forces both internally and internationally with utmost aim to bring down the government. There could be sanctions, poor external relations, and sponsored forceful change of government.

Measures to mitigate the effect of climate change

Nigeria has encountered several forms of disaster, which range from flooding, coastal and soil erosion, sand-storms, oil spillage, locust/ insect infestations, and other man-made disasters. Climate change poses a significant threat to national security in Nigeria, intensifying existing socio-economic, political, and environmental vulnerabilities. Rising temperatures, desertification, flooding, sea-level rise, and resource scarcity exacerbate conflicts, displacement, food insecurity, and economic instability. Addressing these risks requires a comprehensive national security strategy that integrates environmental sustainability, economic resilience, and social cohesion. Nigeria's security challenges including insurgency in the northeast, farmer-herder conflicts in the Middle Belt, militancy in the Niger Delta, and banditry in the northwest

are increasingly linked to environmental stress. According to the Intergovernmental Panel on Climate Change (IPCC, [2022](#)), climate change intensifies competition over scarce natural resources, particularly land and water. In northern Nigeria, desertification and shrinking water bodies such as Lake Chad have reduced agricultural productivity and fishing livelihoods, contributing to migration and recruitment into armed groups. In southern Nigeria, coastal erosion and flooding—especially in cities like Lagos—threaten infrastructure, disrupt economic activities, and increase internal displacement. These environmental stressors undermine state capacity and strain security institutions. The underlisted measures are the direct and indirect interventions of the Federal Government, State Government, MDAs and Non-state actors towards rapid resuscitation of the Climate Change induced environmental hazards.

1. Strengthening Environmental Governance
The Nigerian government must enhance environmental regulation and enforcement. Agencies such as the National Environmental Standards and Regulations Enforcement Agency (NESREA) should be empowered with adequate funding and technical capacity. Strengthening policy implementation of the Climate Change Act ([2021](#)) would ensure better coordination between environmental protection and national security strategies.

2. Promoting Climate-Resilient Agriculture
Agriculture employs a significant proportion of Nigeria's population. Promoting drought-resistant crops, irrigation systems, and sustainable land management can reduce food insecurity and conflict over farmland. The Food and Agriculture Organization of the United Nations (FAO, [2021](#)) emphasizes climate-smart agriculture as essential to building resilience in fragile regions. Government support through subsidies, training, and extension services can stabilize rural livelihoods and reduce migration pressures.

3. Investing in Water Resource Management
Integrated water resource management is critical, particularly in the Lake Chad Basin. Regional cooperation through bodies such as the Lake Chad Basin Commission can improve sustainable water use and conflict prevention. Investments in dams, irrigation infrastructure, and water conservation technologies can mitigate scarcity-driven tensions.

4. Enhancing Disaster Risk Reduction and Early Warning Systems
Flooding remains one of Nigeria's most devastating climate impacts. Strengthening early warning systems and emergency response capabilities can reduce loss of life and infrastructure damage. Agencies such as the National Emergency Management Agency (NEMA) should receive enhanced funding and training to respond swiftly to climate-induced disasters.

5. Diversifying the Economy
Nigeria's dependence on oil revenue increases its vulnerability to global climate policies and market shifts. Transitioning to renewable energy sources such as solar and wind power can promote energy security and economic resilience. The International Renewable Energy Agency (IRENA, [2022](#)) notes that renewable energy investments

create employment opportunities and reduce greenhouse gas emissions, contributing to long-term stability.

6. Strengthening Regional and International Cooperation
Climate change is transboundary in nature. Nigeria should actively engage in regional frameworks under the African Union and global agreements such as the Paris Agreement. International climate finance and technical assistance can support adaptation and mitigation efforts that reinforce national security objectives.

7. Integrating Climate Security into National Defense Planning
Climate risks should be incorporated into Nigeria's national security and defense policies. The military and intelligence agencies must develop climate-risk assessments and prepare for increased humanitarian missions, border pressures, and internal displacement. Integrating environmental data into security forecasting will enhance proactive responses.

Conclusion

The main causes of Climate change therefore include: burning of fossil fuels, deforestation, industrial processes, agricultural practices, and waste management where landfills releases methane which further contribute to greenhouse effect. Recently, however, there has been a growing anxiety over the phenomenon for constituting a menace to the global security. In Nigeria, specifically, the effect of Climate change which are being felt as rise in temperature and sea levels, increased risks of drought and desertification, flood and erosion, etc. thus endangering flora and fauna. It has adverse impact on national security as it leads to internal and external migrations and resource conflict. Hence the need for Nigeria to take adequate measures to stem the impact of Climate change. The environmental issues caused by Climate change have been compelling countries to cooperate in the international system on how to tackle the problem. The forebearers of climate pollution, precisely the industrialized nations need to be proactive in reducing the carbon emissions believe to be the primary cause of global warming in within their domains.

Recommendations

It is recommended that:

1. The Federal Government should intensify cooperation/collaboration with the co-riparian countries for recharge of Lake Chad and Climate related issues.
2. There should be effective empowerment of institutions established for climate governance in Nigeria Climate Act in order to address climate change and its multiple threats.
3. Sustainable actions on climate finance, green economy, forestation, renewable energy to be implemented by MDAs at all levels.

4. The lead agencies in emergency response to scale up research and training activities in areas of sensitization of locals, proactive measures, and alarms drills to mitigate the impact of catastrophes during emergencies.
5. Nigeria to further explore avenues provided for bilateral/technological cooperation towards achieving carbon neutrality policies

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