

Article

# The Dynamics of Climate Change and Environmental Security in Nigeria

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## ABSTRACT

Climate change and environmental security are ongoing challenges in Nigeria. This literature review explores the dynamics of climate change and environmental security alongside proposed solutions. The study employs qualitative research, primarily drawing on reports from international NGOs that address climate change and ecological security in Nigeria. It also utilizes content analysis based on literature, additional bibliographies, and published academic works. The results indicate that the issue of climate change in Nigeria still requires further exploration, as no reports provide in-depth investigations. However, they also show the emergence of debates concerning the problem in both the political and academic spheres. Regarding official documentation, they highlight that Nigeria has adopted policies aimed at significant domestic adaptations to international agreements and treaties to mitigate the effects of climate change. However, research indicates that these efforts have not effectively addressed the consequences of climate change, resulting in more significant environmental degradation. The article highlights the shortcomings in the ways government agencies and other institutions have addressed climate change in Nigeria, including legal and institutional limitations, corruption, and governance deficiencies.

**Keywords:** environmental policies, global warming, climate change, Nigeria.

## RESUMO

Mudanças climáticas e segurança ambiental são desafios constantes na Nigéria. Esta revisão de literatura explora a dinâmica das mudanças climáticas e segurança ambiental juntamente com soluções propostas. O estudo emprega pesquisa qualitativa, principalmente com base em relatórios de ONGs internacionais que abordam mudanças climáticas e segurança ecológica na Nigéria. Ele também utiliza análise de conteúdo com base na literatura, bibliografias adicionais e trabalhos acadêmicos publicados. Os resultados indicam que o tema sobre as mudanças climáticas na Nigéria ainda precisa ser mais bem explorado, não existindo relatórios com investigações mais profundas. Mas também já indica a emergência de debates no ambiente político e acadêmico sobre o tema. No que se refere a documentação oficial, elas enfatizam que a Nigéria tem adotado políticas voltadas às adaptações domésticas significativas a acordos e tratados internacionais para mitigar os efeitos das mudanças climáticas. No entanto, a pesquisa indica que esses esforços não abordaram efetivamente as consequências das mudanças climáticas, resultando em degradação ambiental mais significativa. O artigo destaca as deficiências nas maneiras como agências governamentais e outras instituições abordaram as mudanças climáticas na Nigéria, incluindo limitações legais e institucionais, corrupção e deficiências de governança.

**Palavras-chave:** políticas ambientais, aquecimento global, mudanças climáticas, Nigéria.



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## Introduction

In contemporary discourse, climate change has become a central focus of study among scholars, governments, and non-government institutions (Kniess et al. 2022, Domenech 2017, Teso Alonso & Fernández-Reyes 2020, Faustino, Mantovaneli Junior & Barbosa 2024). Dominant literature suggests that there have been varied considerations concerning the causes of climate change. According to Fakana (2020), many factors, both anthropogenic and natural activities, are drivers of climate change; it is deeply rooted in factors such as changes in the sun's activity, significant volcanic eruptions, and changes in the Earth's orbit; others contend that it primarily results from human activities. Scholars such as Mitchell et al. (2020) posit that human activities predominantly cause climate change. Hesmati (2020), in another direction, offers a similar perspective, positing that humans and their activities have significantly transformed natural systems, leading to a net accumulation of carbon dioxide in the atmosphere.

The viewpoint mentioned earlier corroborates NASA's stance, which attributes the increase in global warming trend to human activities that have released substantial amounts of greenhouse gases into the atmosphere (NASA, 2002). National Academy of Social Sciences (NASS) reveals that the Earth's temperature was approximately 2 degrees Fahrenheit (or about 1.11 degrees Celsius) higher than the late 19th-century average, representing global climate change. This significant shift in climate is already impacting every inhabited region worldwide, contributing to various observed changes in weather patterns and climate extremes (IPCC, 2021).

Considering the foregoing, it is observed that Nigeria, as a country, has not been immune to the severe consequences of life-threatening climate conditions and shifts in weather patterns. These changes in weather patterns are noticeable in apparent variations in heavy rainfall, extreme heat, and cold temperatures, resulting in floods, landslides, droughts, rising sea levels, and air pollution. Perhaps this is why Ogbo et al. (2013) reasoned that the increasing incidence of disasters in Nigeria, including floods, landslides, droughts, rising sea levels, and air pollution, poses significant challenges to Nigeria's national sustainability. In a seeming corroborative stance, Amobi et al. (2015) postulate that some of these natural and human-induced disasters have detrimental impacts on Nigerian society, affecting areas such as health, food production, the economy, and human security.

On the other strand of contemplation, environmental security focuses on freedom from military threats and political coercion to encompass non-military concerns, according to Romm (1993). The implication of the stand is well explicated within the bounds of scholars such as Buzan (1991), Egwu (2001), and Paleri (2008) postulations that traditional security is rooted in the belief that National Defense considerations dominate national security ethos. It is interesting to note that the belief, as mentioned earlier, aligns with the viewpoint of Walt (1991), which asserts that security revolves around the examination of threats, the utilization of military force, and control. It is, however, imperative to note that these prevailing approaches to the traditional perception of security, as highlighted above, draw inspiration from Lipmann's perspective that security involves a state possessing sufficient military capabilities to deter the risk of having to compromise core values to prevent war and, if challenged, to secure victory in such a conflict (Lipmann 1943). Thus, one can infer that Lipmann's contemplation raises a fundamental question concerning the crucial state requirement of sufficient military capability to avert threats to its "core values."

Miller (2008) took a different approach, attempting to classify, clarify, and explain this ambiguity. He insightfully identified two distinct approaches to studying security: the traditional concept of security and security in the post-Cold War era. According to Miller, in the conventional idea of security, the primary threats are neighboring nations or great power rivals, with military capability at the forefront. In contrast, in the post-Cold War concept of security, the threats are non-state, encompassing domestic and trans-border issues. These



include economic, domestic, political, and transnational or global challenges such as immigration, drugs, diseases and environmental concerns, proliferation of weapons, crime, and terrorism.

Considering the foregoing, this paper is grounded in the contrasting view presented by Miller (2008), which posits that the most profound threats are non-state in nature, encompassing both domestic and trans-border issues such as economic, domestic, political, and transnational or global challenges such as immigration, drugs, diseases, and environmental concerns. Furthermore, through a literature review approach, the paper aims to shed light on the evolving nature of climate change and its relationship with ecological security within the Nigerian State. The vulnerability of Nigeria to climate change poses significant threats across various sectors, including food security, poverty reduction, energy, infrastructure, and overall economic development. Eze (2010:8) highlights the alarming risk in the Sudan-Sahel region, where up to 133,994 square kilometers of arable land may be jeopardized, with an estimated capital value at risk of about US\$6.4 billion. The Niger Delta region, already suffering from the detrimental effects of oil and gas exploration, faces further environmental degradation as oil spills and chemical pollution continue to disrupt local biodiversity and the livelihoods of the inhabitants. The compounding effects of climate change in this region underscore the country's broader human security challenges, potentially exacerbating the already precarious conditions for millions of Nigerians. This grave outcome of insecurity and its detrimental impact on national development underscores the urgent need for a comprehensive and adaptable security strategy. It is observable in this direction that the National Security Strategy (NSS) of Nigeria outlines the core national interests, which include the security and welfare of its people, the defense of territorial integrity, and the promotion of peace, democracy, economic growth, and social justice (Centre for Security Studies, 2018). Thus, in the context of this paper, the traditional security paradigm, which has primarily focused on military and territorial defense, is no longer sufficient.

Considering the foregoing, this paper beams a searchlight on Climate change as it presents a particularly pressing and complex challenge to Nigeria's security landscape. In Nigeria, where the effects of climate change are already being felt, integrating environmental considerations into security planning is not just a matter of policy—it is necessary to ensure the country's future stability and prosperity. We argue that climate change is a serious concern for Nigeria's environmental security, considering its impact on Nigeria's security, economic, social, infrastructure, and well-being. It has brought a growing burden to existing environmental concerns, including deforestation and land degradation, which have unfavorably affected Nigeria's agricultural output. It is also argued that Climate change will worsen if various international protocols to combat its effects are not adhered to or correctly enforced and if the anthropogenic nature of man's activities is not curtailed through sustainable practices. However, this research reviewed relevant literature based on qualitative data, with the primary sources being reports from international non-governmental organizations that have produced reports and other studies on climate change and environmental security in Nigeria.

### **Climate Change and Environmental Security in Imo state: Anthropogenic and Natural Drivers Discourse**

Some scholars have traditionally viewed environmental security in international relations through the lens of geopolitical power. David Haglund (1992:15) argued that the proponents of this concept emphasized the "man-milieu relationship," suggesting that the environment, understood as a multifaceted framework influencing states and leaders, played a pivotal role in international relations. This perspective refined long-standing practices linking geography, a quintessential environmental factor, with power distribution and influence on the global stage.

However, Haglund (1992:16) took another direction. He pointed out that what is noteworthy in contemporary discussions on security is the emphasis on environmental degradation as both a consequence



and a catalyst of interstate conflicts. In a similar vein, Porter (1995:218) observed that environmental security introduces a significant departure from traditional notions of national security. It addresses two distinct issues: the environmental factors that can potentially lead to violent conflicts and the impact of global environmental degradation on the well-being of societies and economies. The idea that environmental degradation can be considered a security issue when it serves as a cause of violent conflict aligns with the conventional definition of national security.

The points mentioned earlier emphasize that environmental security is a pressing reality and a global threat to the entire system. The increasing pressures on the Earth's ecological support systems will likely have profound consequences for human well-being and health, potentially as severe as traditional military threats. Recognizing the shifts in ecology and climate patterns and the resulting implications, nations have developed strategies to mitigate and adapt to the adverse effects of climate change.

As Mathew (1989:362-340) aptly noted, environmental challenges that transcend national boundaries are already eroding the conventional concept of national sovereignty to the extent that they should be regarded as our era's most critical security issues. She further highlighted that the proponents of ecological security attribute the depletion of the ozone layer, which shields humanity from harmful ultraviolet radiation to destructive environmental practices such as the indiscriminate destruction of tropical forests and the release of hazardous gases like Chlorofluorocarbon (CFCs) and halons by industries. According to her, it is to prevent national and global catastrophes resulting from environmental-related crises and the disruption of the planet's natural heritage that advocates for ecological security and calls for new forms of diplomacy, institutions, and regulatory frameworks to address the world's increasing environmental interdependence.

Climate change is one of the most significant challenges of the 21st century, particularly for developing countries like Nigeria. Nigeria is not exempt from its adverse impacts, which threaten environmental security, human livelihoods, and sustainable development. This research paper deploys vulnerability theory as a guiding theoretical framework to provide a lens through which to understand the nexus between climate change and environmental security in Nigeria.

In this direction, the Vulnerability Theory serves as a cornerstone for understanding the susceptibility of Imo State to climate change (Figure 1). Vulnerability is the degree to which a system is susceptible to and unable to cope with the adverse effects of climate change, including climate variability and extremes (IPCC, 2014). This theory posits that vulnerability is a function of exposure, sensitivity, and adaptive capacity. In the context of Imo State, the theory can be applied to examine how different communities within the state are exposed to climate-related hazards such as flooding, erosion, and extreme weather events and how their socio-economic conditions influence their sensitivity and adaptive capacity.



Figure 1: Map of Nigeria's administrative boundaries, highlighting Imo State. Source: Giovanni Boggioni, Lahac, UniEVANGELICA, 2024

The influence of human activities on climate change is profound and well-documented. The European Commission on Climate Action (2010) underscored that industrial activities such as burning fossil fuels, deforestation, and intensive livestock farming are principal contributors to global climate alterations. These activities emit significant quantities of greenhouse gases, particularly Methane and Carbon Dioxide (CO<sub>2</sub>), which are instrumental in trapping heat within the Earth's atmosphere, thereby exacerbating global warming. As IPCC (2021) highlighted, these greenhouse gases are the primary agents of climate change, creating an imbalance in the Earth's natural systems by enhancing the greenhouse effect. This disruption is further intensified by the increase in global emissions driven by heightened consumption of fossil fuels, as articulated by Perera (2018), leading to significant environmental consequences such as rising sea levels and extreme weather events.

In the light of the foregoing, evidence overwhelmingly supports the assertion that human activities are the central forces driving geological, biological and ecological changes in the Earth's system. Thus, rapid urbanization, industrial expansion, over-exploitation of natural resources, and deforestation are myriad activities altering the planet's climate. Deforestation, in particular, is critical as it reduces the number of trees that can absorb CO<sub>2</sub>, a crucial mechanism in regulating the environment. Furthermore, the extensive use of synthetic fertilizers in agriculture releases additional greenhouse gases, compounding the problem. The anthropogenic footprint on the environment is also evident in the escalating extinction rates of various animal species, both terrestrial and aquatic, which are directly linked to habitat loss and climate change.

While human activities are significant, natural factors also influence climate variability. According to a report by the United States Government (USG, 2019), natural events such as volcanic eruptions also temporarily alter climate patterns by releasing vast quantities of Sulphur dioxide (SO<sub>2</sub>), water vapor, dust, and



ash into the atmosphere. These volcanic aerosols have a short-term cooling effect on the Earth's climate and contribute to ozone layer depletion. NASA (2010) also acknowledges that before the Industrial Revolution, Earth's climate changes were predominantly driven by natural forces such as variations in solar radiation and volcanic activities. The Nigerian Hydrological Services Agency, as referenced by Umar and Gray (2022), emphasizes that natural factors, including extreme weather patterns influenced by climate change, soil moisture levels, and topographical features, are key contributors to flooding in Nigeria. Trenberth (2011) further argues that climate change, exacerbated by these natural factors, has led to altered precipitation patterns, affecting the distribution and intensity of rainfall, thereby increasing the frequency and severity of flooding.

Nigeria, despite being less prone to certain natural disasters associated with global warming, is not immune to the impacts of climate change. Rising sea levels and coastal erosion are evident consequences, leading to devastating flooding in various parts of the country. For instance, the flooding in Imo State in September 2023, which resulted in significant loss of life and property, underscores the severity of climate change impacts in Nigeria. A community Leader reported that this flooding, which occurred over six weeks, displaced numerous communities, highlighting the vulnerability of Nigeria's infrastructure and population to climate-induced disasters. Furthermore, in Imo State, the effects of climate change are starkly visible through widespread gully erosion, which has ravaged the land and led to severe environmental and socio-economic consequences. It is important to note that despite challenging incidents in Nigeria, flooding appeared to be the most severe the country has encountered in the past decade.

The forgoing discourse implies the stark visibility of climate change's consequences. Worthy note is that they extend beyond immediate physical impacts to broader socio-economic challenges. Thus, the interplay between anthropogenic and natural factors continues to drive climate change in Nigeria, with far-reaching impacts on the environment and society. Addressing these challenges requires a comprehensive approach that integrates mitigation, adaptation, and resilience-building strategies to safeguard Nigeria's environmental security and ensure sustainable development.

### **International Environmental Laws: Evolution and Regulatory Challenges**

A significant focus in the discourse on international environmental regulation can be found in the United Nations Framework Convention on Climate Change document. According to this document, the Kyoto Protocol was adopted on December 11, 1997, but did not come into force until February 16, 2005. The document outlines that the Kyoto Protocol operationalized the United Nations Framework Convention on Climate Change by obligating industrialized countries and transitioning economies to limit and reduce their greenhouse gas (GHG) emissions according to agreed-upon individual targets. The Convention requires these countries to adopt mitigation policies and measures and report on them periodically. As of 2022, the UNFCCC had 198 parties, and its highest decision-making body, the Conference of the Parties (COP), convenes annually to assess progress in addressing climate change. However, due to key signatory states not adhering to their commitments, the UNFCCC has faced criticism for its perceived failure to reduce carbon dioxide emissions since its inception.

In essence, the Kyoto Protocol is built upon the principles and provisions of the Convention and follows its annex-based structure. It exclusively binds developed countries and places greater responsibility on them under the principle of "common but differentiated responsibility and respective capabilities" because it acknowledges their significant role in the current high levels of GHG emissions in the atmosphere.

In their writings, Falola and Heaton (2008), highlights that Nigeria's origin as a nation can be traced back to the conquest of Lagos in 1851 and its subsequent annexation in 1861. Notably, Nigeria's focus on environmental regulation did not become significant until the country gained independence in 1960. This



observation was primarily based on the perception that ecological problems were predominantly the concerns of Western industrialized nations. Adegoke and Adegoroye (1994) posited that this contributed to Nigeria's neglect of environmental issues. Akin (1964) suggested that the British colonial rulers were more motivated by economic interests like commerce rather than environmental concerns. Rebecca (2005) echoed a similar sentiment, asserting that the colonial powers were primarily focused on exploiting the region for their national interests.

This perspective became evident in Oluwasegun's (2017) view, which emphasized that the colonial approach was primarily concerned with public health rather than broader environmental issues. Within the context of colonial medicine ideology, colonial administrations used public health concerns to legitimize their rule and enact racial segregation. The colonial era was also marked by establishing legislation and public health laws, such as the Criminal Code Law of 1916 and the Public Health Act of 1917, which aimed to address public health violations.

However, it is worth noting that starting in 1960, the discovery and exploitation of oil in Nigeria became a major source of environmental issues, particularly related to gas flaring and oil spillage, with significant impacts on oil-producing communities. Ogbodo (2010) argued that the drilling, exploitation, and processing of oil in Nigeria gave rise to a range of environmental challenges even in Imo State, Southeast Nigeria such that necessitated the development of environmental regulations and laws.

However, Nigeria appears to lack clear national policy objectives for the country's environment. Nevertheless, Nigeria has enacted various policies to align with multiple international conventions and protocols on the environment. Interestingly, Section 20 of the 1999 Nigerian Constitution articulates the underlying principles of environmental protection and management. This section states, "the state shall protect and improve the environment and safeguard the water, air, land, forest, and wildlife of Nigeria." Unfortunately, this constitutional provision is non-justiciable, meaning that the Nigerian government cannot be compelled to enforce these provisions to safeguard the environment. Numerous legislative statutes have been enacted to address this constitutional limitation, and several international treaties have been ratified to protect and preserve Nigeria's environment. It is important to note that Nigeria's statutes encompass acts, laws, decrees, edicts, and ordinances. An act passed by the Federal Legislature is called an "Act," while a statute passed by a state's House of Assembly is called a "law." Decrees are enactments by the central military government, while edicts are those of the state military government. Ordinances are laws passed by the Nigerian Central Legislative Assembly before October 1, 1954, when Nigeria adopted a Federal Constitution.

The Federal Environmental Protection Agency (FEPA) Act was enacted in 1988 in response to the Koko toxic waste dump incident, during which approximately 3,000 tons of toxic waste were illegally dumped in Koko port by Italian businessmen. The establishment of FEPA can be seen as the initial step in Nigeria's environmental governance. However, following substantial criticism, FEPA was abolished in 1999, and its responsibilities were transferred to the Ministry of Environment. Subsequently, the Act was revised to pave the way for enacting the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act in 2007. The mandate for active participation in the evolving global environmental protection process was conferred upon Nigeria, along with many other countries, at the Stockholm Conference in 1972. Besides the Stockholm Conference, numerous other international treaties, protocols, and conventions hold significance in environmental governance in Nigeria. Some notable examples include the Universal Declaration of Human Rights in 1948, the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter in 1972, the International Convention for the Prevention of Pollution of the Sea by Oil in 1954 (amended in 1962 and 1969), the Convention on the High Seas in 1958, the United Nations Conference on Desertification (UNCOD) in 1977, the International Conference on the Establishment of an International



Fund for Compensation for Oil Pollution Damages in 1978, the African Charter on Human and Peoples' Rights in 1983, the Convention for Cooperation in the Petroleum and Development of the Marine and Coast Environments of West and Central Africa in 1984, the United Nations Conference on Environment and Development (UNCED) in 1992, the United Nations Convention to Combat Desertification in 1994, the Vienna Convention for the Protection of the Ozone Layer, the Rio Declaration on Environment and Development, and several others.

To implement the Environmental Policy, Nigeria has formulated specific policies and action plans that, if effectively executed, could support the country's national climate change adaptation responses, particularly in areas such as drought and desertification, erosion and flood control, coastal zone management, national sanitation, forestry, and biodiversity protection. For instance, the National Policy on Drought and Desertification acknowledges the potential intensification of drought and desertification in the country's northern regions due to climate change. Consequently, the policy outlines strategies to mitigate the adverse impacts of climate change on drought and desertification. To address climate change-related challenges, the policy emphasizes the need to equip relevant agencies, institutions, and citizens with the necessary tools to collect, analyze, and utilize climate data effectively for drought and desertification mitigation. Moreover, the policy promotes land-use practices that enhance carbon dioxide sequestration, such as afforestation and agro-forestry, with the added benefits of reducing soil erosion and increasing crop productivity, thus supporting climate change adaptation and economic development. Additional long-term integrated strategies are detailed in the National Action Programme (NAP) to Combat Desertification and Mitigate the Effects of Drought, which was developed in 2000 and remains the primary implementation framework for drought and desertification policies.

The National Forest Policy has been finalized, and Nigeria has established the National Forestry Action Program (NFAP). NFAP is designed to prioritize sustainable forest management, encourage participatory development processes, facilitate private sector engagement in forestry development, and adopt an integrated approach. This comprehensive program comprises three subprograms: forest management, social forestry, and forest industries. Effective implementation of these initiatives can significantly expand Nigeria's forest cover, contributing to climate change mitigation and adaptation efforts and positioning the country to benefit from the global REDD+ program. The primary aim of the National Biodiversity Strategy and Action Plan (NBSAP) is to create a suitable framework and program tools for the preservation of Nigeria's biological diversity. This includes promoting its sustainable use to enrich the country's biodiversity and leverage its positive impact on climate change adaptation and mitigation strategies. NBSAP seeks to encourage the integration of biodiversity considerations into national planning, policies, and development plans (NBSAP, 2015).

On the other hand, the National Erosion and Flood Control Policy and its Action Plan aim to ensure a systematic and coordinated approach to managing and controlling erosion and flood hazards. The goal is to minimize their adverse impacts on the population and the environment.

Additionally, Nigeria introduced a new agricultural policy in 2001, aiming to achieve self-sufficiency in essential food supplies, boost agricultural raw material production for industries, enhance the production and processing of export crops using advanced technologies, and create job opportunities (AfDB 2005, FMARD 2001, Manyong et al 2003). This policy also seeks to reduce risks and uncertainties in agriculture, including those related to natural hazards like climate change, which can impact agricultural production and investment security. The policy framework covers various areas vulnerable to climate change impacts, including crops, livestock, fisheries, agro-forestry production, pest control, water resources, and irrigation.

Nigeria has an extensive coastline that stretches over 800 kilometers, featuring diverse geomorphological characteristics that are highly vulnerable to the impacts of climate change. Although a specific policy for coastal



zone management has yet to be developed, the country is actively participating in the UNDP/UNEP/UNIDO/GEF project aimed at addressing coastal area degradation and the depletion of living resources within the Guinea Current Large Marine Ecosystem (GCLME) through regional initiatives. A significant result of this project is establishing a Strategic Action Programme to promote sustainable environmental management across the sub-region. Several measures within this initiative present promising opportunities for proactive adaptation responses to climate-induced changes in Nigeria's coastal environment.

In energy policy and planning, Nigeria's National Energy Policy outlines guidelines to protect the environment during fossil fuel exploitation. It highlights the importance of exploring renewable and alternative energy sources, particularly solar, wind, and biomass. Nigeria envisions a future in which renewable energy plays a crucial role, aiming for sustainable and affordable renewable sources to supply half of the nation's total energy demand by mid-century. This strategy will significantly help reduce greenhouse gas emissions and decrease the country's reliance on fossil fuels.

The health policy of Nigeria is closely linked to climate change adaptation, given the expected increase in climate-related health issues. The National Health Policy (NHP) 's primary aim is to improve Nigerians' health status and achieve health-related Millennium Development Goals (MDGs). Supporting the NHP's implementation are policies such as the National Adolescence Health Policy, the National Reproductive Health Policy, and the forthcoming Nigerian Health Promotion Policy. These policies collectively seek to lower disease morbidity and mortality rates, tackle communicable diseases, and enhance Nigerians' overall quality of life and life expectancy in light of the challenges posed by climate change (National Climate Change Policy for Nigeria, 2021).

Moreover, Nigeria's transport sector faces vulnerability issues heightened by adverse weather conditions. The transport sector struggles with challenges such as a collapsed rail system, a weak civil aviation framework, and a poorly maintained road transportation network. Nigeria's comprehensive transport policy aims to tackle issues related to the economic regulation of urban transport, funding, land use and transportation planning, safety enforcement, institutional framework, and public-private partnerships within the transportation sector. Effectively implementing this policy is crucial for improving Nigeria's readiness to handle more severe weather conditions due to climate change. (National Climate Change Policy for Nigeria, 2021)

Department of Climate Change Unit (DCC): Nigeria has established a Department of Climate Change Unit (DCC) within the Federal Ministry of Environment in Abuja. The primary role of the DCC is to implement activities related to the Convention and protocols on climate change. It also serves as the coordinating body for the Inter-ministerial Committee on Climate Change, which includes representatives from various ministries such as Finance, Agriculture, Water Resources, the Energy Commission, the Nigeria National Petroleum Corporation (NNPC), Foreign Affairs, the Nigerian Meteorological Agency (NIMET), industry, NGOs like the Nigerian Environmental Study/Action Team, and academia. (National Policy on Climate Change, 2020)

Regarding afforestation initiatives, it is essential to recognize that afforestation serves as a significant response to mitigate the effects of climate change, with the Nigerian government actively participating in various afforestation programs. Nigeria is involved in the African Union Commission's "Green Wall Initiative," which aims to create a "green wall" of trees across the country's arid regions. This initiative seeks to combat deforestation while promoting agriculture and sustaining livelihoods in the Sudano-Sahelian zone, addressing climate change in alignment with the United Nations Millennium Development Goals. Additionally, the Presidential Initiative on the Afforestation Program for Environmental Sustainability has established ambitious targets to plant approximately 40 million trees annually. The government acknowledges the urgent need to address climate change challenges and has prioritized them on the national development agenda. Efforts are being intensified to integrate climate risk considerations into national development projects and strategies,



including NEEDS/SEEDs and the Economic Blueprint known as Vision 20:2020 (Casimir, Omeh, Ike 2014, Igbuzor 2009).

Related to Long-Term, Low-Emission Development Strategies (LT-LEDS), Nigeria, as a signatory to the Paris Agreement (PA), recognizes the crucial role of transitioning to low-emission development to achieve sustainable economic growth and reduce greenhouse gas (GHG) emissions while also yielding broader social, economic, and environmental benefits. In addition to its Nationally Determined Contributions (NDCs) outlining climate actions until 2030, the Paris Agreement, under Article 4.19, encourages all Parties to strive to develop and communicate LT-LEDS. This process considers common but differentiated responsibilities and respective capabilities, taking into account varying national circumstances. To fulfill this commitment, the Federal Government of Nigeria has initiated the development of its LT-LEDS, starting with an initial focus on a Long-Term Vision extending to 2050 for the nation. This vision provides a clear sense of direction for all stakeholders, guiding them in effectively managing the transition to a low-carbon economy. This transition aims to stimulate the growth of existing and emerging sectors, creating new jobs and economic opportunities for the country.

### **Challenges and Strategies for Enforcing Environmental Laws in Nigeria**

The enforcement of environmental laws in Nigeria encounters significant challenges that undermine efforts to tackle environmental degradation and foster sustainable development. It has been identified that poverty, selfishness, insecurity, militancy, low levels of environmental awareness, and corruption are key factors contributing to the limited implementation of environmental regulations in the country. These challenges are intensified by weak institutional capacity, a lack of political will, insufficient funding, and the absence of regulations. Consequently, the lack of awareness about environmental laws complicates enforcement efforts, leading to widespread environmental non-compliance.

A critical aspect of improving environmental law enforcement in Nigeria is enhancing the welfare of enforcement officers. Undeniably, better compensation, capacity-building incentives, and providing necessities such as food, clothing, and shelter for enforcement officers could contribute to achieving sustainable development goals. The rationale behind this approach is that well-compensated and motivated officers are more likely to perform their duties, thereby improving enforcement outcomes diligently.

However, addressing endemic corruption within enforcement agencies is crucial. It is important to note that tackling corrupt practices among enforcement officers requires stringent penalties, including dismissal, to deter others and uphold the integrity of environmental law enforcement. Failing to address corruption severely undermines environmental security and worsens climate change issues in Nigeria, as it allows for the continued violation of ecological laws without consequences. Furthermore, modern technology can be transformative in monitoring and enforcing environmental regulations. Technologies such as satellite imagery, Geographic Information Systems (GIS), and drones can provide real-time data and evidence of environmental violations, thereby improving the ability of enforcement agencies to detect and address infractions. However, despite the availability of such technologies, their use has been limited due to institutional and financial challenges.

A notable challenge in enforcing environmental laws in Nigeria is the gap between international multilateral ecological treaties and their domestic incorporation. Although Nigeria is a signatory to numerous international environmental agreements, many of these treaties have not been fully integrated into domestic law, which undermines the country's legal framework for environmental governance. This gap hinders enforcement agencies' ability to hold violators accountable under international standards and limits the legal remedies available within the domestic legal system.



Institutional efficiency is also worth mentioning. It is a critical determinant of effective environmental law enforcement in Nigeria. The National Environmental Standards and Regulations Enforcement Agency (NESREA) is the primary institutional agency responsible for environmental governance in the country. NESREA's mandate includes formulating ecological research and technology policies, conserving biodiversity, promoting the sustainable development of natural resources, and providing advisory support to the Federal Government on environmental issues (Njoku and Enebeli, 2023: 144).

Despite NESREA's broad mandate, the agency has encountered significant challenges in enforcing environmental laws. The difficulty in apprehending and prosecuting violators has resulted in ongoing environmental degradation. Moreover, NESREA's limited success in enforcing environmental regulations underscores the more significant issue of institutional inefficiency within Nigeria's environmental governance framework. This inefficiency stems partly from inadequate funding, bureaucratic delays, and poor inter-agency coordination, which undermines the agency's ability to fulfill its mandate effectively. Therefore, while NESREA plays a critical role in environmental governance in Nigeria, the enforcement challenges need urgent attention. Improved enforcement mechanisms, stricter adherence to environmental regulations, and institutional reforms are essential for addressing the persistent environmental issues faced by Nigeria. Strengthening the enforcement of environmental laws is crucial for protecting the environment, promoting sustainable development, and mitigating the impacts of climate change in Nigeria.

### Final Remarks

Given the preceding discussion, a wealth of literature exists that presents various studies and opposing viewpoints on the effects of climate change on environmental security and whether climate-induced environmental stress serves as a catalyst for interstate conflicts. Notably, there seems to be considerable consensus among security policy experts and multiple non-governmental organizations that view climate change as a threat multiplier in conflict scenarios.

It is undeniable that climate change represents a tangible and undeniable phenomenon that the global community is grappling with. The repercussions of climate change and its role as a threat multiplier are observable in both the northern and southern hemispheres, albeit with varying degrees of impact influenced by each continent's unique characteristics and the effectiveness of their adaptive and mitigating measures. The effects of climate change and its potential catalysts have led to severe consequences for Nigeria's environment.

These consequences include dwindling fish stocks, loss of biodiversity and ecosystem services, exacerbated poverty, diminished freshwater resources, heightened disease burdens, infrastructure damage, resource scarcity, crop failures, and reduced agricultural yields, which result in food insecurity. Furthermore, climate change exacerbates gender inequalities, as women often bear the brunt of providing for their families under increasingly challenging circumstances.

Furthermore, climate change's adverse impact includes the depletion of forest reserves and wetland destruction, which results in the loss of essential ecosystem services, such as food, medicine, and carbon sequestration. From a perspective aimed at addressing climate change threats, the Nigerian National Security Strategy (NSS), launched in 2019, recognizes forests as critical national assets and forest conservation as a strategic imperative.

Effectively addressing climate change adaptation requires the collective response of both state and non-state actors. It is widely acknowledged that state actors alone cannot adequately confront the challenges posed by climate change. In response, the Nigerian government has established various institutional frameworks and formulated numerous policies to mitigate climate change and its effects on human security. Despite achieving



significant milestones, environmental agencies in Nigeria have struggled to apprehend and prosecute offenders, leading to further environmental degradation.

The overarching inability of responsible agencies to protect the environment through the effective implementation and enforcement of relevant regulations and laws arises from several factors. These factors include deficiencies in the legal framework, institutional bottlenecks, corruption, inadequate funding, governance issues, intimidation, and a lack of awareness. Despite the numerous environmental protection laws, enforcing the right to a clean and healthy environment remains a work in progress in Nigeria. Consequently, addressing climate change challenges also involves addressing security threats. States must tackle the underlying causes of climate change to mitigate these security risks effectively.

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### **Statement Declaration**

I affirm that the content in this article is my original work, properly cited where necessary. All information is accurate to the best of my knowledge, and no financial interests are directly or indirectly related to this work.

### **Data Availability Statement**

Data supporting this study is included in the article.

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by [Kelechi Nwanegwo], [Udochu Eke] [JAMES Fajemoroye] and [Sandro Dutra]. The first draft of the manuscript was written by [Kelechi Nwanegwo] and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.