

## Environmental challenges and, Policy Imperatives to achieving Sustainable Development in Nigeria

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### **Abstract**

*This paper employs a qualitative research methodology, synthesizing data from academic literature, governmental reports, and publications by international organizations to analyze the multifaceted environmental challenges hindering Nigeria's pursuit of sustainable development. Key findings reveal a crisis state across multiple domains: one of the world's highest deforestation rates, pervasive air and water pollution far exceeding safe limits, chronic oil spillage in the Niger Delta, and systemic failures in waste management. The nation's high vulnerability to climate change, manifesting as desertification in the north and coastal erosion in the south, exacerbates these pressures. While Nigeria has developed an extensive body of environmental laws and policies, including ambitious Nationally Determined Contributions (NDCs), their effectiveness is critically undermined by a persistent implementation gap, weak institutional capacity, regulatory fragmentation, and pervasive corruption. This study accomplishes that achieving sustainable development requires a paradigm shift from policy formulation to rigorous implementation of policy and enforcement with instruments to enable, aside from pronouncing sanctions but go ahead to implement penalties. Key imperatives include strengthening governance frameworks, fostering judicial activism for environmental rights, closing the climate finance gap, promoting a circular economy, and empowering local communities as active partners in environmental stewardship: a bottom-up approach as well as vertical collaboration amongst various levels of government and other stakeholders. Without addressing these systemic governance failures, Nigeria's environmental crises will continue to threaten public health, economic stability, and the attainment of the Sustainable Development Goals (SDGs).*

**Keywords:** Environmental Policy, Sustainable Development, Socio-economic impacts, Nigeria, Environmental governance

### **1. Introduction**

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Nigeria presents a compelling case study in the complex interplay between economic development and environmental sustainability. As a nation endowed with vast natural resources, including significant oil reserves and diverse ecosystems, it has long been dubbed the "Giant of Africa" for its economic and demographic weight (IQAir, n.d.). However, this potential is overshadowed by severe and escalating environmental problems, including crude oil devastation in the Niger Delta

and contaminated resources across its communities and megacities (Ogunba, n.d.). The national preoccupation with economic advancement has historically led to the neglect of environmental resources, creating a dichotomy that now poses an existential threat to both the nation's ecological integrity and its long-term development prospects (Ogunba, n.d.).

The country faces varied critical environmental crises: rampant deforestation, pervasive pollution, and severe vulnerability to climate change. According to the United Nations, Nigeria has one of the highest deforestation rates in the world, estimated at 3.7% annually (Green.Earth, 2023). Its urban centers suffer from air pollution levels nearly ten times higher than World Health Organization (WHO) guidelines (UNEP GRID, n.d.), while water sources are severely compromised by industrial, agricultural, and domestic waste (Isukuru, 2024) and Eteng (2025). Compounding these issues, Nigeria is ranked among the ten most vulnerable countries to the impacts of climate change, facing desertification in the Sahelian north and sea-level rise along its extensive, low-lying coastline (World Bank, n.d.; Oloyede, n.d.).

In response, Nigeria has developed a comprehensive suite of environmental laws, policies, and international commitments. However, a significant "implementation gap" persists, where well-intentioned regulations fail to translate into meaningful action on the ground (Ogunkan, 2022). This paper seeks to investigate this disconnect by addressing the following research questions: What are the scale and primary drivers of Nigeria's key environmental challenges? How have national policies and legal frameworks evolved to address these issues, and what are their principal limitations? Finally, what are the critical policy imperatives required to align Nigeria's development trajectory with the principles of environmental sustainability?

This study adopts a qualitative approach, synthesizing existing literature to provide a holistic analysis. It begins with a literature review of Nigeria's primary environmental challenges and governance frameworks. The methodology section outlines the research approach, followed by a detailed presentation of findings, including case studies and data visualizations. The discussion section analyzes the systemic barriers to effective environmental management, leading to a conclusion that offers targeted recommendations for policy reform and institutional strengthening.

### **Justification for the Research**

Environmental decline is a major barrier to actualizing the targets of sustainable development in Nigeria. Increasing population growth, unparalleled urbanization, poor waste disposal and management and continuously deplorable environmental quality impacts public health and safety, economic productivity in terms of livelihood options, and falling ecological regimes by way of erosion and pollution. This investigate is justified as it seeks to examine the multidimensional challenges confronting Nigeria and the policy viewpoints if implemented that would best address the challenge within the sustainable development framework. Empirical studies, national environmental reports and global benchmarks would be leveraged to analyze the drivers, patterns and socio-economic implications of environmental decline. This paper seeks to generate further debates and views on environment-society dynamics and sustainable development in developing countries.

## **2. Literature Review**

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### **2.1 The State of Nigeria's Environment**

The literature presents a grim portrait of Nigeria's environmental health, characterized by rapid resource depletion and widespread contamination.

#### ***2.1.1 Deforestation and Land Degradation***

Nigeria's forest cover is diminishing at an alarming rate. In 2020, natural forest covered approximately 20 million hectares (Mha), or 22% of its land area (Global Forest Watch, n.d.-a). However, the country is losing this vital resource rapidly, with some estimates placing the annual deforestation rate as high as 3.7% (Green.Earth, 2023; UN REDD Nigeria, n.d.). Between 2001 and 2022, Nigeria lost 12% of its total forest cover (Wikipedia, n.d.-a). This loss is primarily driven by the expansion of agriculture, logging, and infrastructure development. This is highlighted in a paper linking deforestation to logging activities as a result of citizens seeking improved livelihoods and economic survival in the face of increasing poverty. Eteng, EO 2025. In the north, this degradation is intrinsically linked to desertification. The Sahel region, affecting 15 of Nigeria's 36 states and approximately 30 million people, is severely impacted by a combination of climate change and human pressures like overgrazing, leading to loss of arable land and increased resource conflict (Ibrahim, 2022; Copernicus, n.d.).

#### ***2.1.2 Pervasive Pollution***

Pollution of air, water, and land is a critical public health and environmental issue. Air quality in urban centers is particularly poor, with average annual PM<sub>2.5</sub> concentrations almost 10 times the WHO recommended value of 5µg/m<sup>3</sup> (UNEP GRID, n.d.). In 2019, Nigeria's nationwide average PM<sub>2.5</sub> reading was 21.40 µg/m<sup>3</sup>, with cities like Lagos experiencing daily peaks as high as 78.7 µg/m<sup>3</sup> (IQAir, n.d.). Key sources include emissions from aging vehicles, industrial plants using diesel, and the open burning of waste (IQAir, n.d.; Pona et al., 2021). Some of which is a fallout of food waste (Eteng, et al, 2025).

Water pollution is equally severe out of domestic uses with a lot of challenges in terms of quality (Eteng et al, 2025). A systematic review found that industrial waste, agricultural runoff, and domestic sewage are major contaminants of both surface and groundwater (Isukuru, 2024). UNICEF reports that 70% of water is contaminated at the point of consumption, contributing significantly to the nation's disease burden, including outbreaks of cholera, typhoid, and dysentery (UNICEF, 2022; sjmas.com, 2025). The Niger Delta represents an extreme case, where decades of oil exploration have resulted in an average of 240,000 barrels of crude oil spilled annually. These spills have contaminated water sources, reduced soil fertility by up to 40%, and caused a 60% reduction in household food security in affected communities (Ordinioha & Brisibe, 2013). Solid waste management remains a daunting challenge, with systemic failures leading to widespread open dumping and burning. It is estimated that only 30% of waste generated is efficiently collected, exacerbating public health risks and pollution (Omokaro, 2025; Earth.org, 2023).

### **2.1.3 Climate Change Vulnerability and Impacts**

Nigeria is recognized as highly vulnerable to climate change due to a confluence of geographic, social, and political factors (World Bank, n.d.-b). The country is already experiencing significant impacts. Average temperatures have risen by 1.2°C in recent decades and are projected to increase by a further 2.9°C to 5.7°C by the end of the century (Akatah, 2025). This warming trend intensifies desertification in the north and increases the risk of heatwaves and wildfires nationwide (Akatah, 2025). In the south, the low-lying coastline, home to critical economic infrastructure and dense populations, is threatened by sea-level rise. Projections indicate that a 0.2-meter rise could inundate significant land areas, displacing communities and damaging infrastructure (Oloyede, n.d.; IPCC, n.d.). Unpredictable and higher-intensity rainfall patterns are already causing more frequent and severe flooding, leading to crop loss and displacement (Brookings, n.d.).

## **2.2 Evolution of Environmental Policy and Governance**

Nigeria's environmental legal framework has evolved through distinct stages, from a colonial-era focus on public health and sanitation to a contemporary, more comprehensive approach (Ogunba, n.d.). The post-1987 "Koko Crisis," involving the dumping of toxic waste, was a pivotal moment that catalyzed the creation of federal environmental protection agencies and more robust legislation, such as the Environmental Impact Assessment (EIA) Act of 1992 (Ogunba, n.d.; Nuwahereza, 2024). The 1999 Constitution, in Section 20, mandates the state to "protect and improve the environment," and recent judicial activism has begun to interpret this, in conjunction with fundamental rights to life and dignity, as a justiciable right to a healthy environment (Mondaq, 2025).

Despite this progress, the literature consistently identifies a "major flaw" in Nigerian environmental policy: a lack of implementation and enforcement (Ogunkan, 2022). This governance deficit is attributed to a weak and uncoordinated institutional framework, corruption, lack of political will, insufficient funding, and a poor judicial response to environmental cases (Ogunkan, 2022; ICPC, 2024). Corruption, in particular, is cited as a prominent factor driving environmental degradation, as it undermines regulatory oversight and diverts funds intended for environmental protection (ICPC, 2024; Chatham House, 2025).

## **3. Methodology**

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This study employs a qualitative, descriptive research design based on a systematic review of secondary data. The research aims to synthesize existing knowledge to construct a comprehensive analysis of Nigeria's environmental challenges and the efficacy of its policy responses. The methodology is grounded in the interpretive tradition, seeking to understand the complex interplay of environmental, social, and political factors that shape the country's progress toward sustainable development.

The data for this paper were drawn exclusively from the provided corpus of web search results, which includes a diverse range of sources: peer-reviewed articles from academic databases (e.g., ScienceDirect, PMC), reports from international bodies (e.g., World Bank, UN, UNICEF, WHO), data from environmental monitoring organizations (e.g., Global Forest Watch, IQAir), government

policy documents (e.g., Nigeria's Nationally Determined Contributions), and articles from reputable research and news outlets.

The analytical process involved a thematic content analysis. Information from the source materials was systematically coded and categorized according to the primary themes of the research: (1) types and scale of environmental degradation (deforestation, pollution, climate impacts); (2) evolution and structure of environmental policy and law; (3) national commitments and targets (e.g., NDCs, SDGs); and (4) systemic barriers to effective governance (e.g., implementation gaps, corruption, financial constraints). Case studies, such as the Niger Delta oil crisis and desertification in the Sahel, were developed to provide in-depth illustrations of broader trends. A key limitation of this study is its reliance on secondary sources. The findings and conclusions are therefore contingent on the accuracy, scope, and date of the original materials. The research does not involve primary data collection, such as interviews or field surveys, but instead provides a comprehensive synthesis of the current state of knowledge as reflected in the available literature. To carry out a process that would involve the collection of primary data is a demanding approach requiring the deployment of massive and technically experienced practitioners whose supply is limited with attendant cost and logistics challenges involved thus the resolve to base our summation on highpoints of efforts by various and diverse agencies and international concerns involved in the environment and development discourse

#### 4. Findings

The synthesis of the reviewed literature reveals a profound and multifaceted environmental crisis in Nigeria, alongside a policy framework that is ambitious in scope but deficient in execution.

##### 4.1 The Scale of Environmental Degradation

The data indicates that environmental degradation in Nigeria is not a peripheral issue but a systemic crisis affecting public health, food security, and economic stability. Key indicators across different domains are summarized in Table 1.

Indicator	Statistic/Finding	Source(s)
Annual Deforestation Rate	Estimated at 3.7%, among the highest globally.	Green.Earth (2023); UN (cited in Green.Earth)
Tree Cover Loss (2001-2022)	12% of total tree cover lost.	Wikipedia (n.d.-a)
Air Pollution (PM2.5)	Average annual levels are almost 10 times the WHO recommended value.	UNEP GRID (n.d.)
Water Contamination	70% of water is contaminated at the point of consumption.	UNICEF (2022)
Annual Crude Oil Spills	An average of 240,000 barrels spilled per year in the Niger Delta.	Ordinioha & Brisibe (2013)
Solid Waste Collection	Only 30% of generated waste is efficiently collected and disposed of.	Earth.org (2023)
Climate Change Vulnerability	Ranked among the 10 most vulnerable countries globally.	World Bank (n.d.)
Impact of Oil Spills on Food Security	Up to a 60% reduction in household food security in affected areas.	Ordinioha & Brisibe (2013)

**Source: Outcome of summary from diverse available data**

#### **4.1.1 Case Study: The Niger Delta Oil Pollution Crisis**

The Niger Delta exemplifies the devastating convergence of resource extraction and environmental neglect. For over five decades, the region has endured unprecedented oil spillage, with an estimated 13 million barrels released since 1958 (Ordinioha & Brisibe, 2013). The consequences are catastrophic. Spills contaminate surface and groundwater with hydrocarbons and heavy metals, destroying aquatic life and rendering drinking water unsafe (Ordinioha & Brisibe, 2013; Mondaq, 2025). The pollution has decimated local livelihoods, particularly farming and fishing, leading to a 60% reduction in household food security and a 24% increase in childhood malnutrition in some communities (Ordinioha & Brisibe, 2013). The health impacts are severe, with studies linking exposure to Nigerian crude oil with hemotoxic and hepatotoxic effects, infertility, and cancer (Ordinioha & Brisibe, 2013). Despite legal battles and community uprisings, the pollution continues, highlighting a profound failure of both corporate responsibility and state regulation (The Guardian, 2022; Amnesty International, 2025).

#### **4.1.2 Case Study: Desertification in the Nigerian Sahel**

In northern Nigeria, the environmental challenge is one of creeping desertification. The Sahel region, which spans 15 states, is experiencing accelerated land degradation driven by a combination of climate change-induced drought and human activities, primarily overgrazing (Ibrahim, 2022; NASA Earthdata, 2021). This process affects an estimated 30 million people, or 17% of the national population (Ibrahim, 2022). The consequences include diminished agricultural productivity, water scarcity, and increased competition over dwindling resources, which can fuel conflict. Satellite imagery confirms significant shifts in land use, with vegetation cover giving way to barren land, threatening the livelihoods of millions who depend on agriculture and pastoralism (Copernicus, n.d.).

### **4.2 The National Policy and Legal Response**

Nigeria's policy response has evolved significantly, particularly since the late 1980s. The nation has ratified key international treaties and established a domestic legal architecture for environmental protection. However, this framework is characterized by a disconnect between policy and practice.

<b>Period</b>	<b>Key Characteristics</b>	<b>Examples/Milestones</b>
Colonial (1900–1956)	Focus on public health, sanitation, and nuisance law. Dearth of specific environmental legislation.	Provisions within public health ordinances.
Petroleum-Focused (1957–early 1970s)	Legislation driven by the discovery and commercialization of crude oil, with a focus on economic exploitation.	Laws governing oil exploration with minimal environmental safeguards.
Rudimentary (1970s–1987)	Perfunctory environmental provisions; environmental concerns seen as a hindrance to industrialization.	Limited federal environmental oversight.
Contemporary (Post-1987)	Catalyzed by the Koko toxic waste crisis. Establishment of federal agencies and comprehensive legislation. Increased environmental awareness.	FEPA (later NESREA), EIA Act (1992), Methane Guidelines (2023).

Source: Adapted from *Ogunba (n.d.)*

#### **4.2.1 Climate Commitments: The Nationally Determined Contributions (NDCs)**

As a signatory to the Paris Agreement, Nigeria has submitted progressively ambitious NDCs. The latest update (NDC 3.0) sets an unconditional target of reducing greenhouse gas (GHG) emissions by 20% below business-as-usual by 2030, and a conditional target of 47% with international

support (NDC Partnership, n.d.-a). The NDC 3.0 is economy-wide, covering sectors such as energy, agriculture, oil and gas, waste, and forestry (UNDP, 2025). Specific targets include:

- Achieving zero routine gas flaring by 2030.
- A 60% reduction in fugitive methane emissions from the oil and gas sector by 2035(UNDP, 2025; UNFCCC, n.d.-a).
- A 60% reduction in deforestation.
- Expanding the scope to include the waste sector, aiming to scale up recycling and waste-to-energy initiatives (NDC Partnership, n.d.-a; UNDP, 2025).

The National Council on Climate Change (NCCC) is tasked with overseeing the implementation and tracking of these targets (UNFCCC, n.d.-a). However, achieving these goals is heavily contingent on securing substantial international climate finance.

#### **4.2.2 The Rise of Environmental Constitutionalism**

A significant development in Nigeria's legal landscape is the judicial evolution toward recognizing a constitutional right to a healthy environment. Initially, Section 20 of the Constitution, which mandates the state to protect the environment, was considered non-justiciable (Mondaq, 2025). However, courts have carved out exceptions. In landmark cases like *Gbemre v. Shell and Centre for Oil Pollution Watch v. NNPC*, the judiciary has linked the right to life (Section 33) and dignity (Section 34) to environmental quality, holding that a "clean, poison-free, pollution-free and healthy environment" is an integral part of these fundamental rights (Mondaq, 2025). This jurisprudential shift provides a powerful legal avenue for citizens and communities to hold polluters and the state accountable, moving environmental protection from a mere policy objective to an enforceable constitutional right.

### **5. Discussion: Systemic Barriers to Sustainable Development**

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Despite a sophisticated legal framework and ambitious climate pledges, Nigeria's progress towards environmental sustainability is impeded by deep-seated systemic barriers. This section discusses the critical disconnect between policy and outcomes.

#### **5.1 The Governance and Implementation Deficit**

The most cited barrier is the profound gap between policy formulation and implementation. Nigeria's environmental governance system is described as being "beset with ineffectiveness," characterized by unenforceable laws, a lack of public participation, and a weak, uncoordinated institutional framework (Ogunkan, 2022). Agencies often have fragmented or overlapping mandates, leading to regulatory confusion and inaction. Enforcement is weak, with penalties often insufficient to deter large-scale corporate polluters. This deficit is not merely technical but is deeply intertwined with a lack of political will and institutional capacity (Ogunkan, 2022; ResearchGate, 2025).

## **5.2 Corruption and Lack of Accountability**

Corruption is a primary catalyst for environmental degradation in Nigeria. It manifests in various forms, from the issuance of permits for illegal logging and mining to the turning of a blind eye to industrial pollution in exchange for bribes (ICPC, 2024). Corruption drains national wealth, leads to the misallocation of resources, and undermines the integrity of environmental institutions (rsisinternational.org, 2025). Funds allocated for environmental projects, including climate finance, are often diverted, raising significant concerns about accountability (Trésor Économie, 2024). The partnership between Nigeria's anti-corruption body and the Environmental Investigation Agency (EIA) to combat wildlife trafficking is a positive step, but it underscores the scale of the challenge in linking environmental crime to corrupt practices (Mongabay, 2024).

## **5.3 Economic Pressures and Financial Constraints**

The imperative for economic growth often conflicts with environmental protection. The country's heavy reliance on fossil fuels, which constitute over 80% of the energy mix, creates a powerful path dependency that hinders the transition to renewable energy (The African Dream, 2025). Although Nigeria has immense potential for solar, wind, and hydropower, investment in renewables has historically lagged. For every \$3 invested in fossil-fuel power plants between 2015 and 2024, only \$1 was invested in solar and wind (Forbes, 2025). Furthermore, there is a massive climate finance gap. While Nigeria requires an estimated USD 27.2 billion for climate action, it received only USD 2.5 billion in 2021/22 (reglobal.org, 2025). High perceived investment risk, currency instability, and policy uncertainty deter the private capital needed to scale up green projects and meet NDC targets (Forbes, 2025; Africa Climate Insights, n.d.).

## **5.4 The Role of Civil Society and Community Engagement**

In the face of state inaction, non-governmental organizations (NGOs) and community-based organizations (CBOs) have emerged as key actors in environmental governance. NGOs are often at the forefront of advocacy, monitoring, and implementing climate adaptation and mitigation projects, sometimes acting ahead of government initiatives (ResearchGate, 2024). They play a critical role in promoting the sustainable use of natural resources and holding authorities accountable (ijrpr.com, n.d.). Similarly, community-based projects have shown effectiveness in fostering local environmental stewardship (Oyamo, 2025). However, their efforts are often localized and lack the scale and resources to address systemic national challenges. Empowering these groups and formally integrating them into the national governance framework is a significant opportunity. The success of community-based forest management in places like the Ngel Nyaki Forest Reserve offers a model for how local involvement can lead to better conservation outcomes (UBC Wiki, 2024).

## 6. Conclusion and Recommendations

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Nigeria though as a nation on the rise towards economic development, the nation is caught between its developmental aspirations and a rapidly deteriorating and dispassionate natural environment. The scale of deforestation, pollution, and climate vulnerability constitutes a systemic threat that undermines public health, economic resilience, and progress towards the Sustainable Development Goals. While the country has established a legal and policy architecture for environmental protection, its failure to enforce these regulations has rendered them largely ineffective. The gap between policy and practice, fueled by weak governance, corruption, and economic pressures, is the central challenge to achieving sustainable development in Nigeria. Moving forward requires a decisive shift from rhetoric to action. This paper puts forth the following policy imperatives:

- a. **Strengthen Governance and Enforcement:** The government must prioritize the enforcement of existing environmental laws. This includes adequately funding and empowering regulatory agencies like NESREA, streamlining institutional mandates to eliminate fragmentation, and imposing penalties that are stringent enough to deter non-compliance. A unified national environmental policy with clear, enforceable standards is essential (Omokaro, 2025).
- b. **Promote Judicial Activism and Access to Justice:** The recent trend of judicial recognition of environmental rights as fundamental human rights should be encouraged and expanded. Removing procedural barriers to environmental litigation and ensuring that courts can hold both state and corporate actors accountable is crucial for environmental justice (Mondaq, 2025).
- c. **Bridge the Climate and Green Finance Gap:** Nigeria must create a more attractive investment climate for renewable energy and climate adaptation projects. This involves ensuring policy stability, de-risking investments through public-private partnerships and blended finance mechanisms, and improving transparency to build investor confidence and attract the necessary international capital to meet NDC targets (Forbes, 2025; Africa Climate Insights, n.d.).
- d. **Combat Corruption in the Environmental Sector:** Anti-corruption agencies must intensify their focus on environmental crimes. Implementing transparent tracking systems for climate finance and revenues from natural resources can enhance accountability and ensure that funds are used for their intended purpose.
- e. **Empower Local Communities and Civil Society:** The government should formally recognize and integrate NGOs and CBOs into environmental governance structures. Adopting models of community-based resource management, where local populations have a stake in and benefit from conservation, can lead to more sustainable and equitable outcomes (Oyamo, 2025). Ultimately, Nigeria's path to a sustainable future depends on its ability to confront these governance failures head-on. Without a concerted commitment to implementation, accountability, and inclusive stewardship, the country's rich natural endowment will continue to be a source of crisis rather than a foundation for prosperity.
- f. **Adopt a Sustainable Agriculture approach:** Deforestation without efforts at biodiversity conservation or tree planting of the ecosystem displays all efforts at meeting the sustainable development goals as individuals and communities: rural and urban continue to make

efforts at improving standard of living with increasing population growth with little or no success of family planning, as avenues for population control.

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