

CLIMATE JUSTICE FOR THE VULNERABLE: INTEGRATING SCIENTIFIC EVIDENCE AND HUMANISTIC VALUES IN NIGERIA'S ENVIRONMENTAL POLICIES

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Abstract

Climate change presents both an environmental and moral crisis, particularly in countries like Nigeria that contribute minimally to global greenhouse gas emissions yet suffer disproportionately from its effects. Rising sea levels, desertification, erratic rainfall patterns, and biodiversity loss are intensifying, with the poorest communities bearing the heaviest burdens. Scientific evidence from the Nigerian Meteorological Agency (NiMet) and the Intergovernmental Panel on Climate Change (IPCC) underscores the urgency of policy action. However, Nigeria's existing climate strategies often fail to embed humanistic values that prioritise equity, dignity, and participation in governance. This paper examines Nigeria's climate vulnerability through the lens of climate justice, integrating empirical climate data with human rights-based frameworks. It analyses three case studies: flooding in Bayelsa State, drought in Yobe State, and deforestation in Cross River State revealing persistent gaps in implementation, weak enforcement, and exclusion of local voices in decision-making. Findings show that climate governance remains overly technocratic, reactive, and insufficiently inclusive, missing opportunities for equitable adaptation and mitigation. A Climate Justice Policy Framework is proposed, grounded in scientific forecasting, indigenous ecological knowledge, and participatory governance. Recommendations include targeted climate

financing for vulnerable groups, stronger environmental law enforcement, climate literacy integration into education, and institutionalised annual climate justice audits.

Keywords: *Climate Justice, Vulnerable Communities, Environmental Policy, Scientific Evidence, Humanistic Values, Nigeria*

1. Introduction

Climate change has emerged not merely as an environmental phenomenon but as a defining social justice challenge of the 21st century. Its impacts are distributed unevenly across geographies and socio-economic classes, with vulnerable populations, those least responsible for greenhouse gas emissions, bearing a disproportionate burden (IPCC, 2022). For Nigeria, Africa's most populous country and largest economy, climate change represents both an environmental crisis and a human development challenge.

While Nigeria's per capita carbon emissions remain low at approximately 0.7 metric tons per year compared to the global average of 4.5 metric tons (World Bank, 2023), the country ranks among the most climate-vulnerable states due to its geographic diversity, socio-economic fragility, and heavy dependence on climate-sensitive sectors such as agriculture and fisheries. Rising sea levels threaten coastal megacities like Lagos, while desertification jeopardises livelihoods in the Sahelian north.

The concept of climate justice reframes climate change as an ethical and political issue. It calls for fair distribution of climate burdens and benefits, recognition of differentiated vulnerabilities, and protection of the rights of future generations. Central to climate justice is the integration of scientific evidence, which provides measurable and predictive insights into climate risks with humanistic values that ensure policies are inclusive, equitable, and respectful of human dignity.

In Nigeria, the challenge lies not in the absence of data or policy frameworks, but in the disconnect between scientific knowledge and human-centred governance. Despite adopting the Paris Agreement (2015) and formulating the National Climate Change Policy (2021–2030), implementation remains hindered by weak institutions, underfunding, and limited community engagement.

This paper addresses the following core questions:

- a. How does current scientific evidence describe Nigeria's climate vulnerability?

- b. In what ways do existing environmental policies integrate (or fail to integrate) humanistic values?
- c. What practical steps can bridge the gap between scientific knowledge and climate justice in Nigeria?

2. Literature Review

2.1 Global Context of Climate Justice

The concept of climate justice emerged from environmental justice movements of the late 20th century, which highlighted how marginalised communities disproportionately bear environmental harms. In the global climate arena, this evolved into demands for equity in mitigation, the frameworks of the Paris Agreement of 2015 aided its adaptation, recognising the principle of “common but differentiated responsibilities” under the UN Framework Convention on Climate Change (UNFCCC), acknowledging that all nations share a responsibility for climate action, but industrialised countries must bear greater obligations.

Studies by Roberts and Parks (2007) and the Mary Robinson Foundation (2015) show that climate justice involves three dimensions:

1. **Distributive justice** – equitable distribution of climate burdens and benefits.
2. **Procedural justice** – inclusive decision-making processes.
3. **Restorative justice** – compensating and rehabilitating affected communities.

2.2 Nigeria's Climate Governance Framework

- I. Nigeria's climate governance has evolved since its National Policy on Climate Change (NPCC) set out adaptation and mitigation strategies enacted in 2012 and subsequent Nationally Determined Contributions (NDCs)– pledging a 20% unconditional and 47% conditional emissions cut by 2030.

However, Ebele and Emodi (2016) argue that while the framework is aligned with international standards, its implementation is hindered by funding constraints, political interference, and institutional overlaps.

Key policies include:

- I. National Adaptation Strategy and Plan of Action (NASPA) – outlines adaptation priorities for vulnerable sectors such as like agriculture, health, and disaster management.
- II. Nigeria Climate Change Act (2021) – establishes a National Council on

Climate Change with legal authority.

III. Renewable Energy Master Plan (REMP) – targets increased renewable energy penetration.

Despite these efforts, the Climate Change Act lacks strong enforcement provisions, and climate financing remains largely donor-dependent with weak inter-agency coordination, political interference, and insufficient community participation are persistent barriers

2.3 Regional Climate Hazard Profiles

Table 1: Regional Climate Hazard Profiles in Nigeria (Compiled from NiMet, 2023; IPCC, 2022)

Region	Dominant Climate Threat	Affected Sectors	Vulnerable Groups
Niger Delta	Sea-level rise, flooding	Fisheries, housing	Coastal poor, fisherfolk
North-East	Desertification, drought	Agriculture, livestock	Smallholder farmers, pastoralists
South-East	Gully erosion	Infrastructure, farming	Rural farmers, low-income traders
Middle Belt	Rainfall variability	Agriculture, water	Small-scale farmers, women farmers

These trends demonstrate that Nigeria's climate vulnerability is **multi-scalar**, with localised hazards demanding region-specific adaptation strategies.

3. Scientific Evidence of Nigeria's Vulnerability

Scientific assessments paint a stark picture of Nigeria's climate trajectory.

Key findings:

- I. **Temperature Rise:** Average temperature has increased by ~1.1°C since

- pre-industrial levels.
- II. **Sea-Level Rise:** Coastal waters rising at 3.5 mm/year, threatening over 15 million people in the Niger Delta.
 - III. **Rainfall Variability:** Increased unpredictability leading to both droughts and floods in the same year.
 - IV. **Desertification:** Over 60% of land in northern Nigeria at risk.

3.1 Overview of Climate Risks

Indicator	Trend / Rate	Implications
Temperature Rise	+1.1°C since pre industrial levels	Increased heat stress, reduced crop yields, higher vector - borne disease spread
Rainfall Variability	Alternating droughts and floods; unpredictable onset	Agricultural disruption, food insecurity, water management challenges
Sea-Level Rise	~3.5 mm/year along coastline	Coastal erosion, displacement risk for ~15 million Niger Delta residents
Desertification	Affecting 60% of northern land; advancing ~0.6 km/year	Loss of arable land, increased migration, pastoral–farmer conflicts
Extreme Weather Events	Increased incidence of floods, droughts, windstorms	Infrastructure damage, public health emergencies, economic losses

Table 2 – Key Climate Indicators for Nigeria (1980–2023)

(Source: IPCC, 2022; NiMet, 2023; World Bank, 2020; UNCCD, 2021)

4. Humanistic Values in Climate Policy

4.1 Defining Humanistic Climate Governance

Humanistic values in policy-making emphasise equity, dignity, and participation

(Okonkwo & Eze, 2021):

- i. **Equity** demands that adaptation efforts target those least able to cope.
- ii. **Dignity** ensures that solutions such as relocation do not erode cultural heritage or identity.
- iii. **Participation** grants the community's agency in designing and executing policies that affect them.

4.2 Current Gaps in Nigerian Climate Governance

While Nigeria's National Climate Change Policy (2021) mentions social inclusion, the practical integration of humanistic principles is minimal:

1. **Top-Down Policy Design:** Federal climate strategies often neglect grassroots realities.
2. **Limited Indigenous Knowledge Integration:** Traditional coping mechanisms are underutilised.
3. **Funding Bias:** Climate finance disproportionately favours urban infrastructure over rural adaptation.

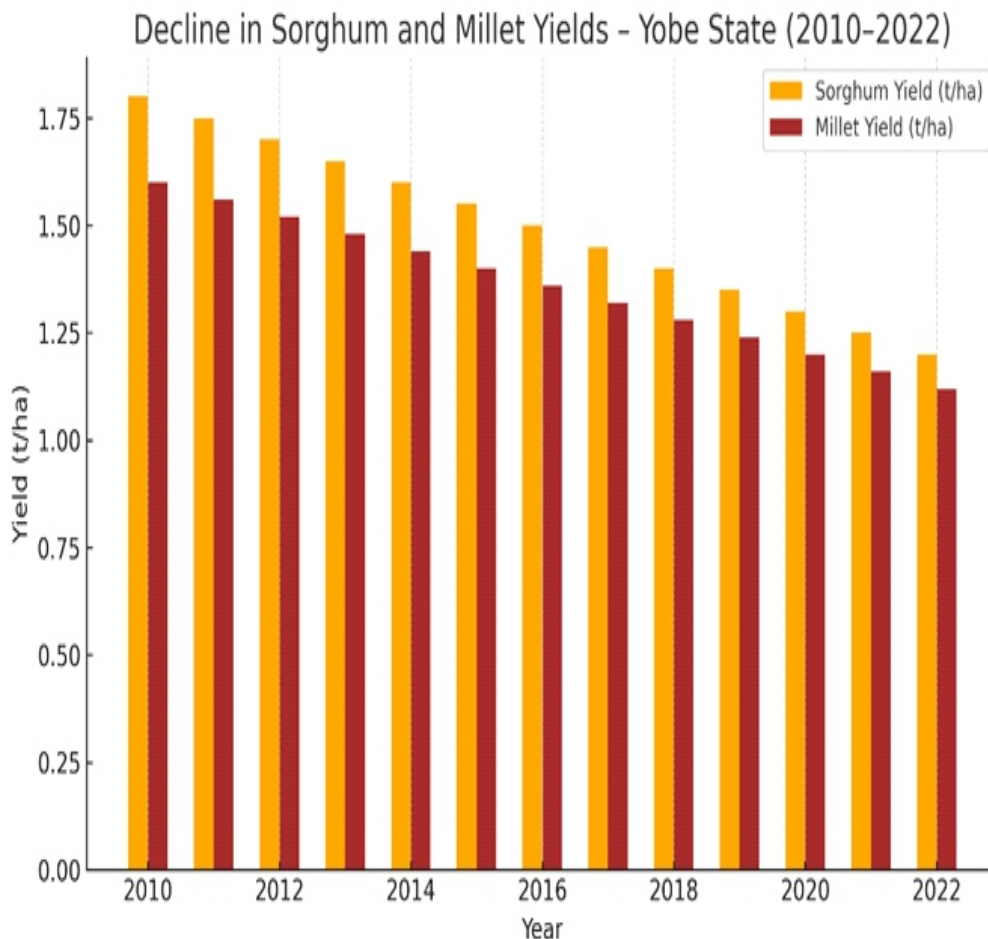
5. Case Studies: Lived Realities of Climate Injustice

5.1 Bayelsa State: Recurrent Flooding

Bayelsa, located in the Niger Delta, experiences annual flooding, displacing tens of thousands. In 2022, floods submerged 80% of the state's landmass, affecting over 700,000 residents (NEMA, 2022). While government relief focused on temporary shelters, cultural and economic ties to ancestral lands were overlooked. Fisherfolk lost boats and nets, disrupting livelihoods and food supply chains.

5.2 Yobe State: Drought and Desertification

In Yobe, prolonged dry spells have reduced crop yields by over 35% in the past decade. Nomadic pastoralists are forced to migrate further south, triggering resource-based conflicts. Despite available meteorological data predicting drought patterns, adaptation measures such as climate-resilient seeds remain inaccessible to most farmers due to cost and distribution inefficiencies.



Source: Yobe State Ministry of Agriculture

5.3 Cross River State: Deforestation

Cross River's tropical rainforest, home to endangered species and indigenous communities, is being depleted at an alarming rate due to illegal logging. Although forest protection laws exist, enforcement is weak, and corporate actors often operate with impunity. This loss of biodiversity not only undermines

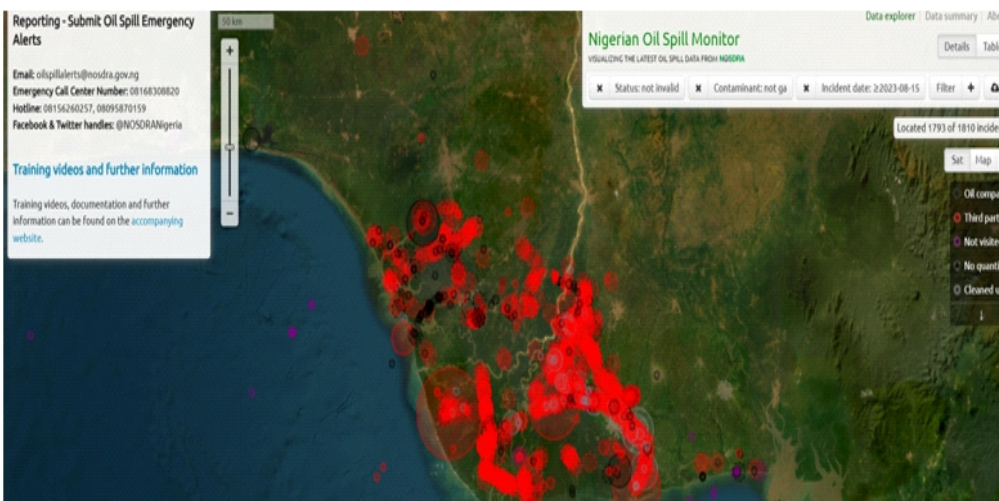
ecological resilience but erodes indigenous livelihoods tied to forest resources.

Year	Forest Cover Loss (km ²)	Number of Actions	Enforcement	Observed Illegal Logging Incidents
2018	310	12		47
2019	345	15		53
2020	402	11		62
2021	425	14		69
2022	440	10		71

Source: Cross River State Ministry of Environment (2023).

5.4 Delta State: Oil Pollution and Ecosystem Degradation

Delta State, also in the Niger Delta, suffers from chronic oil spills, gas flaring, and soil degradation, affecting farming and fishing communities. In 2022 alone, over 1,200 hectares of farmland were contaminated by oil spills, displacing thousands of residents (Niger Delta Watch, 2023). Local communities report declining fish stocks, polluted rivers, and health issues linked to toxic exposure. Government interventions have been largely reactive, emphasizing compensation rather than systemic environmental remediation.



Source: National Oil Spill Detection and Response Agency (2025)

6. Bridging Science and Humanism in Policy

An **integrated climate justice framework** should combine:

1. **Scientific Forecasting:** NiMet's seasonal climate predictions integrated into local farming calendars.
2. **Targeted Vulnerability Mapping:** Direct adaptation funds to communities identified through hazard mapping.
3. **Indigenous Knowledge Systems:** Blend traditional flood warning signs, crop rotation patterns, and water conservation techniques with modern scientific tools.

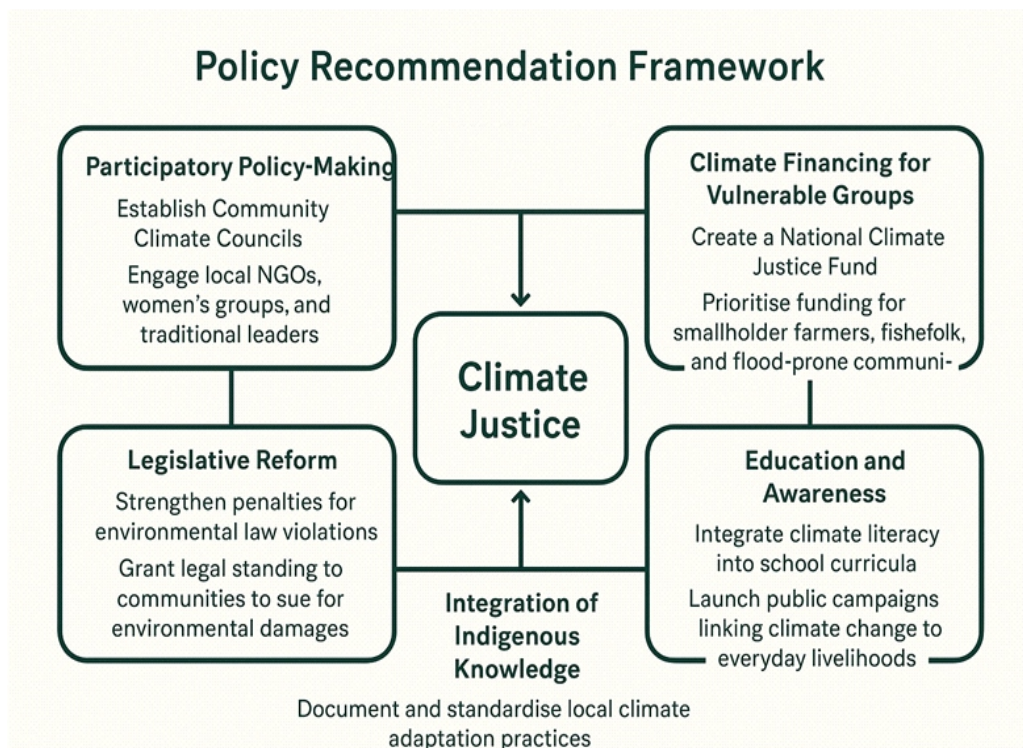
7. Policy Recommendations

7.1 Participatory Policy-Making

Effective climate governance requires the meaningful involvement of local communities in decision-making processes. Establishing Community Climate Councils in each state would institutionalise participatory governance, allowing residents to identify risks, prioritise interventions, and monitor outcomes (Reid et al., 2020). Engagement should extend beyond formal authorities to include local NGOs, women's groups, youth associations, and traditional leaders, recognising their unique contextual knowledge and social capital. Co-creation of adaptation strategies ensures policies are culturally relevant, socially acceptable, and more likely to be sustained over time (Agrawal, 2019).

7.2 Climate Financing for Vulnerable Groups

Financial resources remain a critical barrier to effective climate adaptation. A National Climate Justice Fund, sourced from domestic carbon taxes and international climate finance mechanisms (e.g., Green Climate Fund), could provide predictable and sustained support for vulnerable populations. Prioritising smallholder farmers, fisher folk, and flood-prone communities ensures that resources reach those disproportionately affected by climate shocks. Funding should not only cover immediate relief but also support long-term resilience measures, such as climate-resilient crops, improved irrigation systems, and community-led early warning infrastructure (World Bank, 2021).



7.3 Legislative Reform

Existing environmental laws in Nigeria are often undermined by weak enforcement and limited accountability mechanisms. Strengthening penalties for environmental law violations, including oil spills, deforestation, and illegal mining, would enhance deterrence. Furthermore, granting legal standing to communities to pursue litigation for environmental damages empowers local populations and reinforces the principle of environmental justice (Okowa, 2022).

Legislative reform should also integrate climate considerations into urban planning, agricultural policy, and industrial regulation to reduce systemic vulnerabilities.

7.4 Education and Awareness

Building climate literacy is essential for fostering adaptive capacities at the individual and community levels. Integrating climate change education into school curricula from primary to tertiary levels ensures that future generations are equipped with the knowledge and skills to address environmental challenges. Complementary public awareness campaigns should target adult populations, illustrating the direct links between climate hazards and livelihoods, such as flooding, crop loss, and fishery decline. Awareness programs may leverage mass media, social media, and community theatre to reach diverse audiences effectively (UNESCO, 2020).

7.5 Integration of Indigenous Knowledge

Indigenous knowledge systems offer practical, locally tested strategies for coping with climate variability. Documenting and standardising local adaptation practices such as traditional flood management techniques, seasonal crop rotations, and water conservation methods can complement scientific approaches. Partnerships with academic and research institutions can facilitate validation, scaling, and integration of indigenous methods into broader climate adaptation frameworks, ensuring culturally grounded and sustainable solutions (Berkes, 2018).

8. Conclusion

Nigeria's climate crisis represents both a scientific and moral challenge. While empirical data underscores the urgency of interventions illustrating recurrent flooding in Bayelsa, oil pollution in Delta, drought in Yobe, and deforestation in Cross River, humanistic values provide the ethical compass guiding action. Addressing these challenges requires dismantling top-down policy silos, amplifying local voices, and prioritising the dignity and agency of vulnerable communities. A climate justice approach, anchored in evidence, empathy, and equity, is essential to safeguard Nigeria's ecosystems and secure sustainable livelihoods. Only by bridging scientific knowledge with local wisdom, participatory governance, and targeted financing can Nigeria achieve meaningful resilience against the multifaceted impacts of climate change.

References

- Agrawal, A. (2019). Environmental governance and climate resilience: Lessons from community-based adaptation. *Global Environmental Change*, 54, 3–12.
- Akinbami, J. F., et al. (2020). Climate change and sustainable development in Nigeria. *Renewable Energy Journal*, 45(3), 223–240.
- Berkes, F. (2018). *Sacred ecology* (4th ed.). Routledge.
- Bullard, R. (1990). *Dumping in Dixie: Race, class, and environmental quality*. Westview Press.
- Ebele, N. E., & Emodi, N. V. (2016). Climate change and its impact in Nigerian economy. *Journal of Scientific Research and Reports*, 10(6), 1–13.
- FAO. (2022). *Drought impact assessment in West Africa*. Rome: FAO.
- Intergovernmental Panel on Climate Change. (2022). *Climate change 2022: Impacts, adaptation and vulnerability*. Cambridge University Press.
- IPCC. (2022). *Climate change 2022: Impacts, adaptation, and vulnerability*. Cambridge University Press.
- Mary Robinson Foundation. (2015). *Principles of climate justice*. Dublin.
- NEMA. (2022). *2022 flood impact report*. Abuja: National Emergency Management Agency.
- NEMA. (2022). *Flood impact assessment in Nigeria*. Abuja: National Emergency Management Agency.
- NiMet. (2023). *Annual climate review*. Abuja: Nigerian Meteorological Agency.
- Nigerian Meteorological Agency. (2023). *Annual climate review*. Abuja: NiMet Publications.
- Okonkwo, C., & Eze, E. (2021). Climate change adaptation strategies in Nigeria: Bridging science and community knowledge. *African Journal of Environmental Policy*, 15(2), 87–104.
- Okowa, W. J. (2022). *Climate change and policy responses in sub-Saharan Africa*. Port Harcourt: Pearl Publishers.
- Reid, H., Seddon, N., & Barrow, E. (2020). Ecosystem-based adaptation: Linking adaptation and disaster risk reduction. *Environment and Urbanization*, 32(1), 1–20.
- Roberts, J. T., & Parks, B. C. (2007). *A climate of injustice*. MIT Press.
- UNCCD. (2021). *The Great Green Wall progress report*. Bonn: United Nations Convention to Combat Desertification.
- UNESCO. (2020). *Education for sustainable development: A roadmap*. Paris: United Nations Educational, Scientific and Cultural Organization.
- World Bank. (2020). *Sea-level rise and coastal risk profile for Nigeria*. Washington, DC: World Bank.
- World Bank. (2021). *Climate risk profile: Nigeria*. Washington, DC: World

Bank.

World Bank. (2023). *World Development Indicators*. Washington, DC: World Bank.