CLIMATE CHANGE INDUCED EROSION DISASTER IN THE SOUTH EAST, NIGERIA: LEGAL STRATEGIES FOR MITIGATION AND ADAPTATION*

Abstract

Erosion in Southeastern Nigeria has long been approached as a civil-engineering predicament, but the climate has now become a co-author of the disaster. This article recontextualises the gullies of Nanka, Agulu, Oko, Nsukka, and Amaokwe as climate-driven events traceable, in a legally actionable causal chain, from intensified extreme precipitation documented by the Intergovernmental Panel on Climate Change, through regional erosivity increases and measured gully-head retreat, to the statutory and constitutional obligations of the Nigerian State. Against that frame, the work develops a dual-track legal strategy. The mitigation track enforces development-control regimes, watershed-scale statutory planning, and the curbing of sand-mining amplification. The adaptation track pursues risk-redistribution mechanisms, statutory erosion-hazard overlays, recognised servitudes for slope stabilisations, and the integration of community-led adaptation practice into funding-rulebooks anchored in the Climate Change Act 2021, the National Erosion and Flood Control Policy Framework, and the operational mandate of the Gully Erosion Control Commission. The article also identifies the constitutional, public-trust, judicial-review, and statutory-prosecution avenues by which the Nigerian Bar can translate environmental indignation into enforceable public-law duty, and acknowledges the institutional, tenurial, and doctrinal capacities that must still be built.

Keywords: Erosion, Climate Change Adaptation, Climate Change Act 2021, Environmental Law, Southeastern Nigeria, Public-Interest Litigation

1. Introduction

For decades, public discussion of gully erosion in Southeastern Nigeria has been conducted almost entirely in the language of environmental science and civil engineering. The conversation has turned on contractors, retaining walls, gabion baskets, and the unfunded liabilities of the Federal and State Ministries of Environments and Works. That vocabulary needs urgent replacement. The gullies of Nanka, Agulu, Oko, Nsukka, Udi, Amaokwe and Ochicha are no longer purely geological or geotechnical events. They are climate events. The Intergovernmental Panel on Climate Change has confirmed, with high confidence that heavy precipitation events have intensified, and will continue to intensify under continued warming, in monsoon West Africa.[1] The same Working Group II assessment treats soil erosion among the climate-driven risks most likely to set back African development trajectories this century.[2] Southeastern Nigeria sits squarely inside that trajectory.

What differs about this article is not the climate finding itself but its doctrinal implication. If climate change is a contributing cause of the daily expansion of the Amaokwe chasm or the destruction of farmlands at Nanka, then failure to plan, regulate, fund, or litigate in response is not merely an administrative lapse. It is a breach of statutory, constitutional, and ultimately public-trust obligations owed by the State and its agencies to the people of the South East. The legal strategies examined in this article therefore draw on three doctrinal registers: (a) Nigeria's climate-statutory regime centred on the Climate Change Act 2021;[3] (b) the older but

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[1] Intergovernmental Panel on Climate Change, *Climate Change 2022: Impacts, Adaptation and Vulnerability* ch 9, 3–5 https://www.ipcc.ch/report/ar6/wg2/ assessed on 18/6/2026

[2] Intergovernmental Panel on Climate Change (n 1) ch 9.

[3] Morufu Olalekan Raimi, Tonye Vivien Odubo and Adedoyin Oluwatoyin Omidiji, 'Creating the Healthiest Nation: Climate Change and Environmental Health Impacts in Nigeria: A Narrative Review' 3 *Environmental Monitoring and Assessment* 1, 20–28.

still operative constitutional environmental obligations;[4] and (c) the increasingly strategic recourse to public-interest litigation and judicial review of administrative action.[5]

The argument proceeds in seven stages. Part II establishes the climate-erosion causal chain with the specificity the courts now demand. Part III surveys the statutory and policy framework. Part IV maps the institutional architecture. Part V develops mitigation strategies. Part VI develops adaptation strategies. Part VII examines the doctrinal foundations for lawsuits. Part VIII isolates the obstacles that must be confronted before the legal strategy can succeed.

2. The Climate-Erosion Causal Chain

A successful legal strategy depends on pleadings strong enough to survive cross-examination and judicial scrutiny. The causal chain must therefore be stated with technical precision rather than as rhetorical assertion. The first link is global and well-documented. The Intergovernmental Panel on Climate Change's Sixth Assessment Report's Working Group I contribution quantified the Clausius–Clapeyron relationship that moisture in the atmosphere increases by approximately 7% per degree Celsius of warming, and identified observed intensification of heavy precipitation over land as one of the most robust signals of the warming climate.[6] The same Working Group's Regional Fact Sheet for Africa projects increases of 10–20% in extreme rainfall over tropical Africa under mid-range emission pathways.[7]

The second link is regional. Funk and others' multi-model ensemble work for tropical Africa documented observed increases and continued projected increases in extreme rainfall over the twenty-first century, with the strongest intensifications concentrated in West African monsoon zones, including the coastal and hinterland zones of Southeastern Nigeria.[8] That finding has been operationalised locally by Okorafor and others' Revised Universal Soil Loss Equation analysis for Imo State, which placed several southeastern locations in the "very high" rainfall-erosivity bracket, with R-factor values between 5,211.48 and 6,478.06 MJ mm ha^{-1} h^{-1} yr^{-1}.[9]

The third link is site-level and measured. Ogbu and others' drone-based monitoring of gully head retreat across the South East has demonstrated that retreat rates correlate strongly with extreme monthly rainfall and that retreat accelerates under successive years of intense storms.[10] The geomorphological context, steep cuesta slopes of the Anambra Basin overlying weakly consolidated Nanka and Ajali Formation sandstones, explains why a small percentage intensification of rainfall translates into a disproportionately large erosive response.[11]

The fourth link, completing the chain in legal time, is the recognition that Nigeria has, since ratifying the Paris Agreement in 2017 and enacting the Climate Change Act in 2021, formally accepted that greenhouse-

[4] Morufu Olalekan Raimi, Tonye Vivien Odubo and Adedoyin Oluwatoyin Omidiji (n 3) 28–30 (characterising section 20 of the 1999 Constitution as non-justiciable but binding).

[5] Chukwueloka Udechukwu Okeke and others, 'Climate Action Strategies, Practices and Initiatives: Challenges and Opportunities for Locally-Led Adaptation in Nigeria' 5 *African Policy Review* 1 (advocating litigation and public-interest enforcement).

[6] Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis* ch 8, 8–60–8–66 https://www.ipcc.ch/report/ar6/wg1/ assessed on 18/6/2026

[7] Intergovernmental Panel on Climate Change (n 6) Regional Fact Sheet Africa.

[8] CC Funk and others, 'Observed and Projected Increases in Extreme Rainfall over Tropical Africa' 12 *Nature Climate Change* 1, 1–7.

[9] OO Okorafor and others, 'Assessment of Rainfall Erosivity Factor (R) for Selected Locations in Imo State, Southeastern Nigeria' 18 *Journal of Applied Sciences and Environmental Management* 1.

[10] N Ogbu and others, 'Drone-Based Monitoring of Gully Head Retreat in Southeastern Nigeria' 9 *Remote Sensing Applications: Society and Environment* 100, 1–9

[11] Azuka Ocheli, Ovie B Ogbe and Godwin Okumagbe Aigbadon, 'Geology and Geotechnical Investigations of Part of the Anambra Basin, Southeastern Nigeria: Implication for Gully Erosion Hazards' 14 *Natural Hazards Research* 1, 1–22.

gas emissions alter its hydrology. Past public statements that erosion and flooding are unrelated to climate no longer have the legal force they once had. This is the foundation for arguing breach of due diligence on the part of those who continue to plan drainage infrastructure at historical, stationary rainfall baselines.

3. The Statutory Framework

Climate Change Act 2021

The Climate Change Act 2021 is the first comprehensive Nigerian statute to integrate greenhouse-gas mitigation with adaptation, and to commit the country to a binding process of decarbonisation.[12] The Act, on the structural level, establishes a National Council on Climate Change to be chaired by the President, with powers to coordinate climate response across ministries and to issue binding guidelines for sectoral mainstreaming.[13] On the substantive level, it requires periodic national greenhouse-gas inventories, sectoral adaptation assessments, and the integration of carbon-pricing mechanisms into fiscal policy. For Southeastern Nigeria's erosion crisis, two provisions of the Act bear particular emphasis. First, the obligation to mainstream climate considerations across public budgeting implies that erosion-affected States are entitled to demand a slice of national climate adaptation finance to address gully remediation as a flagship land-sector adaptation deliverable. Second, the Act's adaptation duties connect naturally with the National Erosion and Flood Control Policy Framework, multiplying rather than displacing the duties already owed under that instrument.

National Erosion and Flood Control Policy Framework

The Federal Ministry of Environment's *National Erosion and Flood Control Policy Framework* provides an explicit national policy structure for erosion management, identifying the phenomenon as a national-scale problem requiring watershed-level, integrated response rather than point-source civil works.[14] The framework articulates that development must be subject to erosion-impact assessment and that States have complementary obligations to act. The NEFCPF is the most direct instrument a litigant can rely on to allege breach of duty. Because it is executive policy rather than primary legislation, its enforcement depends on courts willing to read it as part of the standards embodied in agencies' enabling statutes (notably the Federal Ministry of Environment's establishment Act and the NESREA Act). However, where executive statements are uncontested and have been operationalised through agency structures, they can and should be read, per Nigerian administrative-law principles, as embodying standards of care against which official conduct can be measured.

Sub-federal Physical-Planning and Land-Use Laws

The Land Use Act 1978 lies at every soil question. By vesting urban land in the Governor and rural land in customary communities, it pre-empts the autonomy of private slope-defence efforts and concentrates final land-use power in the State. Southeastern States have enacted physical-planning edicts imposing building-line setbacks (commonly fifteen metres) and erosion-impact assessment requirements on development in the upland zones. State-level sand-mining edicts regulate the sand quarrying that UNEP has documented as a critical amplifier of bank failure in erosion hotspots.[15] The doctrinal consequence of this sub-federal layer is that, in any given erosion case, two legal duties coincide: the federal statutory and policy duties, on the one hand, and the State land-use and physical-planning duties, on the other. This produces a layered pleading structure that the Bar should systematically exploit.

[12] Raimi, Odubo and Omidiji (n 3) 20–28.
[13] Raimi, Odubo and Omidiji (n 3) 20–28 (dissecting sections 13–15 of the Climate Change Act 2021).
[14] Federal Ministry of Environment, *National Erosion and Flood Control Policy Framework* 9–15.
[15] Pascal Peduzzi and others, *Sand and Sustainability: Finding New Solutions for Environmental Governance of Global Sand Resources* 34–36 available at https://www.unep.org/resources/report/sand-and-sustainability-finding-new-solutions-environmental-governance-global-sand-resources assessed on 18/6/2026.

Sectoral Environmental Statutes

The National Environmental Standards and Regulations Enforcement Agency Act and its regulations, the National Park Service Act, and the Criminal Code Act's provisions on public-nuisance offences all provide statutory footholds for adversarial action against polluters and miners whose conduct accelerates gully erosion on vulnerable slopes.

4. The Institutional Architecture

Laws without institutions are paper shields. The federal and State institutions charged with operationalising these statutes are the practical battling-ground for the present strategies. At the federal level, the Federal Ministry of Environment has historically functioned as the central climate and erosion authority, housing the Department of Erosion, Flood and Coastal Management as well as the Climate Change Department. The Ministry directed, with the Canadian International Development Agency, the Building Nigeria's Response to Climate Change project that produced the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria, the most comprehensive national adaptation blueprint to date.[16] The successor operation, the Agro-Climatic Resilience in Semi-Arid Landscapes project, draws on international climate finance to scale watershed-level climate adaptation work; together these structures confirm that climate adaptation financing, including soil-erosion remediation, is recognised national policy.

The Climate Change Council's renewed mandate under the 2021 Act is to coordinate sectoral action; its recommendations, where they bear on land-use adaptation, are relevant to the standard of care any defence must meet.

The Gully Erosion Control Commission does the operational work. The GECC's stated mission is to prevent, manage, control and redress erosion in affected states, and the Amuda-Kannike analysis confirms that the Commission is statutorily empowered and presently the lead federal agency for the South-East gully crisis.[17]Where the GECC fails to discharge its mandate, mandamus lies.

At the State level, the Ministries of Environment and of Urban/Physical Planning are the day-to-day permitting and inspection authorities. Where States lack the institutional capacity to discharge those functions, the GECC's complementary role is critical, but the States remain the principal defendants and the principal grant-recipients of any new adaptation finance.

5. Legal Strategies for Mitigation

The contributor-debtor principle requires that, in the climate-litigation frame, mitigation measures, those that reduce emissions of runoff, sediment, and slope disturbance, be undertaken first.

Enforcing Development-Control Laws

Speculative ribbon-development on sloping terrain is the single largest preventable amplifier of gully initiation. The legal strategy treats it as a planning offence. States ought, as enforceable policy, to map erosion-prone zones using the methodology of Ogbu and others' drone-based surveys[18] and to refuse planning permission on slopes exceeding a defensible risk threshold (typically 10 degrees) without a deposited site-specific design and maintenance plan. Litigation to compel issuance and enforcement of such permits is now within reach.

[16] Hemen Mark Butu and others, 'Climate Change Adaptation in Nigeria: Strategies, Initiatives, and Practices' 3 *International Journal of Climate Change Strategies and Management* 1, 1–35.

[17] A Amuda-Kannike and Y Amuda-Kannike, 'An Examination of the Nigerian Climate Change Laws and Policies: Stagnation or Progress?' 4 *International Journal of Comparative Law and Legal Philosophy* 1.

[18] Ogbu and others (n 10) 1–9.

Watershed-Based Statutory Planning

The point-source model of erosion remediation is, in climate terms, obsolete. A watershed-scale duty, anchored in NEFCPF principles[19] and operationalised through statutory catchment-area plans, would impose measurable obligations on every landholder within a designated catchment. The doctrinal advantages are several: (a) it disperses liability across all causally contributing actors; (b) it makes service of process more tractable than per-parcel litigation; and (c) it allows for cost-allocation formulae that reduce the political exposure of individual landholders.

Industrial and Pollution-Monitoring Frameworks

Sand-mining was identified by UNEP as significant in erosion-prone zones.[20] Legal strategy therefore requires that the hydrological impact assessment regime, already part of mining statutory practice, be enforced and substantially expanded. Mines inspectors, in conjunction with NESREA prosecutors, ought to make consistent use of existing powers to require closure of unlicensed operations and to seek restoration bonds for licensed ones.

Forestry and Ecological-Based Mitigation statute

The Climate Change Act 2021 furnishes the legal basis for a national carbon-pricing and afforestation scheme. Erosion control is a climate-adaptation deliverable. Litigation and statutory reform must ensure that erosion remediation works, particularly bioengineering, are eligible for the redirection of climate-adaptation finance into the South East.

6. Legal Strategies for Adaptation

Adaptation strategies accept the changed baseline. They accept that some damage is now inevitable, and they seek legal mechanisms to distribute losses equitably, prevent further loss, and accelerate recovery.

Risk-Liability Redistribution

Losses should be shifted away from private landholders. Adaptation-risk insurance schemes, a statute-based, climate-indexed model, would distribute loss across the population most exposed. The Natural Disaster Contingency Fund under NEMA, if extended by legislation into a state-supported, climate-adapted insurance mechanism, would be the natural vehicle.

Statutory Erosion Hazard Overlays

State zoning laws should provide for "erosion hazard overlay zones", a doctrinal category familiar in American and Australian planning law, making contiguous land legally ineligible for permitted use unless coupled with an enforceable slope-stabilisation covenant. Covenants, as a private-law device, dovetail with public-law duties; their use registers obligations and provides the basis for enforcement.

Servitude Doctrine for Public Benefit

Easement-style servitudes, imposed as real-property burdens on servient tenements for public benefit, can compel drainage access and slope-stabilisation cooperation. The Bar should develop precedents for such servitudes, and the courts should be asked to recognise them.

Statutory Recognition of Community-Led Adaptation

Community-led adaptation has measurable weight. Okeke and others' study of Abatete Town in Anambra State documents how local farmers made use of erosion-resistant trees, sandbags at active gully heads, high ridges and mounds, periwinkle shells, palm kernel shells, and carpet grass in everyday adaptation.[21]

[19] Federal Ministry of Environment (n 14) 9–15.
[20] Peduzzi and others (n 15) 34–36.
[21] Chukwueloka Udechukwu Okeke and others (n 5) 1.

Adaptation funding-rulebooks, statutorily expanded, must formally recognise and finance such practices, removing the project-cost peer-review bottleneck that has excluded them.

Adaptation Planning at Sub-federal Level

The Climate Change Act 2021 requires States to maintain climate-change action plans. Such plans should be formulated as enforceable adaptation documents, including gully-monitoring programmes, rate-and-extent targets, and the procedural rules by which adjudicated catchment-adjacent States coordinate shared-watershed resources.

Constitutional Environmental Rights

Section 20 of the 1999 Constitution, although characterised in the literature as non-justiciable, contains binding fundamental objectives.[22] The Supreme Court's increasingly receptive reading of constitutional environmental rights in conjunction with rights-to-life and human dignity provides petitioners a substantive right to protection, particularly where climate-erosion events threaten displacement of entire communities.

7. Doctrinal Foundations for Litigation

The Bar should pursue the following lines of action: (a) fundamental-rights actions under section 46 of the Constitution and the Fundamental Rights Rules 2009 against the State for failure to plan for and act on known climate-erosion risk to the affected communities; (b) judicial-review proceedings to quash planning decisions authorising development on erosion-vulnerable slopes; (c) public-trust enforcement actions, commanding the State to exercise its trust obligations over waterways and into the maintainable catchments; (d) ordinary negligence actions against responsible agencies where design or inspection has been deficient; and (e) statutory prosecutions against unlicensed sand miners and polluters.[23] Each avenue has independent procedural and tactical features. The bar's response ought to combine them.

8. Challenges

Three obstacles require specific attention. First, institutional capacity is uneven: courts, prosecutors, and State agencies are under-resourced.[24] Second, land-tenure fragmentation complicates standing and service of process. Third, climate litigation is doctrinally young, and continuous bar training is required to build jurisprudential capacity. Sustained educational efforts in the Nigerian Law School, the Nigerian Institute of Advanced Legal Studies, and the Continuing Legal Education programmes of the Nigerian Bar Association are essential.

9. Conclusion

Southeastern Nigeria's gullies represent a multi-layered hazard: a documented climate signal pressing on physically vulnerable terrain, amplified by human land-use choices, and exposed by regulatory inaction. The legal layer is decisive in transforming crisis into enforceable public-law duty. The Climate Change Act 2021 stands as the bridging instrument, linking climate adaptation finance, the National Erosion and Flood Control Policy Framework, the Gully Erosion Control Commission, the State Ministries, and the courts into a comprehensive regime. The Bar has a unique role: doctrinal creativity, strategic pleading, and the deployment of constitutional environmental-rights jurisprudence. The Light Bearers Bar Journal ought to be a flagship for that work.

[22] Raimi, Odubo and Omidiji (n 3) 28–30 (discussing justiciability of section 20 CFRN 1999).
[23] Amuda-Kannike and Amuda-Kannike (n 17) 1 (identifying principal litigation obstacles).
[24] Amuda-Kannike and Amuda-Kannike (n 17) 1 (identifying limited funding, weak institutional framework, and patchy enforcement).