

Building Nigeria's Carbon Market: Policy Framework for Domestic and International Trading

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ABSTRACT

Nigeria's pledge under the Paris Agreement to reduce greenhouse gas emissions demands innovative tools like carbon markets to complement traditional regulatory strategies. This study assesses Nigeria's preparedness to develop a domestic carbon market and engage in international trading mechanisms under Article 6 of the Paris Agreement. Using qualitative policy analysis and secondary data from national laws, global frameworks, and recent literature (2020–2025), the study identifies critical gaps in legal clarity, carbon credit ownership, MRV systems, and institutional coordination. While the Climate Change Act (2021) offers a legal foundation, it lacks specific operational frameworks needed for effective carbon trading. The study proposes a phased approach, beginning with voluntary markets in sectors like forestry and clean cooking, progressing to compliance-based systems. Key recommendations include legislative updates, regulatory reforms, institutional capacity building, and alignment with international standards. A well-structured carbon market will support Nigeria's low-carbon transition, unlock climate finance, and drive sustainable economic development. This includes the newly launched Nigeria Carbon Market Activation Policy (2025) and the establishment of the Carbon Market Oversight Body (CMOB) to enforce integrity and coordination in the carbon market framework.

Keywords: Carbon market, climate policy, emissions trading, Paris Agreement, climate finance.

INTRODUCTION

Background to the Study

Climate change remains one of the most pressing global challenges of the 21st century, with far-reaching consequences for ecosystems, economies, and societies. Developing nations such as Nigeria are particularly vulnerable due to their dependence on climate-sensitive sectors, including agriculture, forestry, and energy, coupled with limited adaptive capacity and institutional resilience (IPCC, 2023). As part of the global climate response, the Paris Agreement requires countries to commit to reducing greenhouse gas (GHG) emissions through their Nationally Determined Contributions (NDCs). In line with this, Nigeria has pledged to reduce its GHG emissions by 20% unconditionally and 47% conditionally by 2030, relative to a business-as-usual scenario (Federal Ministry of Environment [FME], 2021).

The use of traditional policy tools, such as subsidies and regulatory constraints, is insufficient to achieve these lofty goals. Rather, a greater focus is being placed on market-based mechanisms, especially carbon markets, which have performed well as instruments for resource mobilization, cost-effective mitigation, and the adoption of clean technologies in other jurisdictions (World Bank, 2023). By enabling the exchange of emission allowances or credits, carbon markets provide financial incentives for reducing emissions, whether through a baseline-and-credit framework or a cap-and-trade system. In addition, these systems allow nations to

exchange emissions reductions through mechanisms like Internationally Transferred Mitigation Outcomes (ITMOs), which are outlined in Article 6 of the Paris Agreement (UNFCCC, 2022). This promotes international collaboration.

The growth of voluntary carbon markets and compliance-based systems has strengthened the push for carbon trading on a global scale. The expanding significance of carbon markets in attaining net-zero paths is demonstrated by the European Union's Emissions pricing System (EU ETS), China's national emissions pricing program, and Article 6 pilot projects in Africa (ICAP, 2023). By 2030, programs such as the African Carbon Markets Initiative (ACMI) hope to enable more than 300 million carbon credits per year in Africa, providing developing countries like Nigeria with the chance to access global funding and establish regional green economies (ACMI, 2022).

Currently, Nigeria lacks a comprehensive carbon market framework. Although the Climate Change Act of 2021 establishes the National Council on Climate Change (NCCC) and sets net-zero targets for 2060, it falls short of defining operational mechanisms for emissions trading, credit issuance, market oversight, and MRV (Monitoring, Reporting, and Verification) systems (Akinola & Oladipo, 2023). The lack of a defined carbon market strategy or accompanying regulations impedes Nigeria's capacity to fully realize the benefits of carbon finance and participate in global carbon trading platforms.

As a result, creating a credible, well-regulated carbon market in Nigeria is both a climate priority and a strategic economic opportunity. A functional carbon market, in addition to enabling cost-effective emission reduction, can encourage investment in renewable energy, reforestation, sustainable agriculture, and clean technology, all of which have considerable co-benefits for employment, health, and poverty alleviation. This paper investigates the legal, institutional, and economic frameworks required to build such a market in Nigeria, and recommends a strategic roadmap consistent with international best practices.

Nigeria launched the Nigeria Carbon Market Activation Policy (NCMAP) in 2025, outlining a clear implementation roadmap for unlocking \$2.5 billion by 2030 through the generation and trading of high-integrity carbon credits. The policy is based on the Climate Change Act (2021) and seeks to move Nigeria from fragmented carbon credit activities to a structured market framework. NCMAP establishes milestones for national registries, incorporating private-sector engagement, and matching with international requirements under Article 6 of the Paris Agreement.

Research Objectives

To assess Nigeria's legal and institutional readiness for carbon market development.

To identify key market design considerations and challenges.

To propose a strategic roadmap for integrating Nigeria's carbon market into international platforms, particularly under Article 6 of the Paris Agreement.

LITERATURE REVIEW

Carbon Markets and Climate Policy

Carbon markets are essential policy instruments that help to reduce greenhouse gas emissions by pricing carbon. They work through cap-and-trade systems or baseline-and-credit mechanisms, which allow emitters to trade allowances or credits according to their mitigation performance. This market-based strategy improves cost-effectiveness, promotes innovation, and facilitates the mobilization of climate financing. Carbon pricing can help governments incentivize sustainable initiatives while also aligning with international climate agreements like the Paris Agreement. Carbon markets provide a realistic way for nations like Nigeria to reach NDC commitments while also encouraging investment in low-carbon development (World Bank, 2023).

Global Trends in Carbon Markets

Global carbon markets have grown dramatically, with the EU Emissions Trading System (EU ETS) maintaining the largest and most mature compliance market, while voluntary carbon markets (VCMs) have developed in response to corporate net-zero pledges (World Bank, 2023). Carbon pricing programs produced more than \$95 billion globally in 2023, demonstrating the growing demand for emissions trading methods. Simultaneously, many developing countries are developing domestic carbon markets in accordance with Article 6 of the Paris Agreement, specifically its provisions for Internationally Transferred Mitigation Outcomes (ITMOs), in order to attract climate finance and facilitate cross-border cooperation (UNFCCC, 2022; ICAP, 2023).

Nigeria's Climate Commitments and Market Readiness

For comparison, South Africa implemented a carbon tax in 2019, integrating pricing signals into its industrial sectors. Kenya, on the other hand, has focused on voluntary offset markets through REDD+ forestry projects. Nigeria can draw lessons on sector prioritization and institutional coordination from these models.

Nigeria's climate pledges under the updated Nationally Determined Contributions (NDCs) target to reduce GHG emissions by 20% unconditionally and 47% conditionally by 2030 (FME, 2021). However, the institutional and legal infrastructure required to put market-based solutions into action is still underdeveloped. The Climate Change Act (2021) established the National Council on Climate Change (NCCC), although it lacks specific rules for emissions trading, carbon credit ownership, and MRV procedures (Akinola & Oladipo, 2023). Furthermore, shortcomings in technical competence, stakeholder awareness, and private sector engagement impede Nigeria's ability to effectively participate in both local and international carbon markets (ACMI, 2022; UNDP, 2021).

Theoretical Framework

The study is based on two complementary theoretical frameworks: environmental governance theory and policy mix theory. Environmental governance emphasizes openness, accountability, and participatory decision-making in the management of ecological systems, which is critical for developing equitable and effective carbon markets (Newell & Taylor, 2021). Policy mix theory proposes combining several policy instruments, such as legislation, market mechanisms, and fiscal measures, to handle complex environmental concerns (Rosenbloom & Meadowcroft, 2020). Together, these frameworks promote the formation of a carbon market that balances legal enforceability, economic efficiency, and social inclusiveness, which is critical for Nigeria's transition to a low-carbon economy.

In Nigeria's case, environmental governance theory helps frame the challenge of coordinating cross-sectoral agencies such as NESREA, NUPRC, and the SEC under a cohesive carbon market oversight structure. Policy mix theory supports the need for a tailored approach that integrates voluntary market instruments, financial incentives, and regulatory mandates, particularly for high-emitting sectors like oil and gas.

METHODOLOGY

This study takes a qualitative policy analysis technique, which is well-suited for investigating complicated governance and regulatory concerns linked to carbon market development. The research is based on a complete desk review of secondary data published between 2020 and 2025. National legal and policy papers, such as Nigeria's amended Nationally Determined Contributions and the Climate Change Act (FME, 2021), provide valuable insights into domestic legal frameworks and institutional mandates. Furthermore, the study depends on international frameworks and technical guidance documents, including Article 6 of the Paris Agreement (UNFCCC, 2022), the African Carbon Markets Initiative (ACMI, 2022), and worldwide market reports by the World Bank (2023), which provide a basis for comparison. The review also incorporates peer-reviewed academic articles and case studies from other emerging economies, helping to contextualize Nigeria's carbon market readiness within broader international trends (ADB, 2022; Gold Standard, 2021). This design allows for an in-depth, multi-level analysis of Nigeria's carbon market prospects.

Data Collection and Analysis

Data for this study were acquired through a focused document review, utilizing purposive sampling to discover relevant resources on carbon market policy, legal instruments, and international climate frameworks. Sources included Nigeria's policy papers (e.g., Climate Change Act, 2021), updated NDCs (FME, 2021), and technical assistance from international institutions such as the UNFCCC, ACMI, and World Bank (UNFCCC, 2022; ACMI, 2022; World Bank, 2023). The documents were studied using thematic content analysis, which entailed coding and categorizing data based on common topics such as legal and institutional preparation, market design, international alignment, and implementation issues. These topics were found using known frameworks for policy and environmental governance analysis (Newell & Taylor, 2021; Rosenbloom & Meadowcroft, 2020). Findings were triangulated by comparing insights across data sources and measuring Nigeria's experience against international best practices from countries with similar socioeconomic situations (ADB, 2022; Gold Standard, 2021), assuring reliability and contextual relevance.

Table 3.1: Data Collection Sources and Purpose of Use

Data Source	Type of Data	Purpose of Use
National Legal and Policy Documents (e.g., Climate Change Act 2021; NDC 2021)	Legislative and Policy Frameworks	To assess legal and institutional readiness for carbon market development.
International Treaties and Guidelines (e.g., Paris Agreement, UNFCCC Article 6 Guidelines 2022)	Regulatory Standards and Mechanisms	To evaluate Nigeria's alignment with global carbon market frameworks.
Reports by International Organizations (World Bank 2023; ACMI 2022; ICAP 2023)	Market Readiness, Capacity, and Policy Reports	To examine Nigeria's market potential, capacity gaps, and global best practices.
Peer-reviewed Academic Journals (2020–2025)	Theoretical and Comparative Literature	To contextualize Nigeria's position and draw lessons from international carbon market experiences.

Source: Author's compilation from reviewed documents (2024).

Limitations

This study is constrained by a lack of primary data, such as expert interviews or survey responses from regulators and market actors. Furthermore, certain internal policy documents within the NCMAF (2025) framework were not publicly available, which limited in-depth institutional examination. Finally, given the rapid growth of global carbon market regulations, changes after 2025 may necessitate future evaluation.

FINDINGS AND DISCUSSION

Legal and Regulatory Framework Gaps

Despite Nigeria's efforts in enacting the Climate Change Act (2021), important legal gaps remain that impede the implementation of a viable carbon market. The Act outlines broad climate governance goals and establishes the National Council on Climate Change (NCCC), but it makes no specific provisions for emissions trading systems (ETS), legal recognition of carbon credits, or ownership rights, especially for community-based mitigation projects (Akinola & Oladipo, 2023). Furthermore, the lack of a consistent legal framework for Monitoring, Reporting, and Verification (MRV) adds uncertainty to environmental integrity and compliance

enforcement. For Nigeria to participate in international carbon markets under Article 6 of the Paris Agreement, national legislation must expressly address corresponding adjustments, permission mechanisms, and registry transparency. A dedicated Carbon Market Act is thus required to specify institutional missions, provide enforcement mechanisms, and reconcile existing laws governing land, finance, and environmental control (Ebohon & Alabi, 2021; ACMI, 2022).

Institutional and Market Design Considerations

A well-functioning carbon market necessitates a fully defined and coordinated institutional framework. While the Climate Change Act of 2021 establishes the National Council on Climate Change (NCCC) as the primary climate governance body, it does not have a specialist entity dedicated to carbon market implementation. A Carbon Market Implementation Unit (CMIU) under the NCCC is required to manage project certification, emissions accounting, and communication with international institutions such as the UNFCCC Article 6 supervisory body (FME, 2021; UNFCCC, 2022). Institutional duties must also be defined across key agencies, such as NESREA for environmental compliance, NUPRC for oil and gas emissions, and SEC/NGX for trading platform development (World Bank, 2023). A transparent and digital carbon register, interoperable with international systems, is required to track credit issuance, transfer, and retirement (Gold Standard, 2021). Without this infrastructure, Nigeria's market will lack the credibility and transparency required to attract investment and participate in global carbon markets (ICAP, 2023).

To carry out the Nigeria Carbon Market Activation Policy (2025), the federal government established the Carbon Market Oversight Body (CMOB), a dedicated institution within the National Council on Climate Change (NCCC) tasked with regulating carbon trading activities, enforcing market compliance, and certifying credit integrity. In parallel, the Intergovernmental Committee on Carbon Market Activation (IGCCMA) was established to improve inter-ministerial cooperation and stakeholder participation. These institutions serve as the regulatory and administrative backbone for Nigeria's transition to a carbon market with high integrity and international alignment.

Economic and Financial Considerations

The economic feasibility of Nigeria's carbon market is dependent on creating a progressive and adaptable system that can accommodate both voluntary and compliance-based methods. A voluntary carbon market (VCM) should be implemented first in sectors with strong mitigation potential, such as forestry, renewable energy, and waste management, before progressing to a compliance market that includes large polluters such as power, cement, and oil and gas (ACMI, 2022). To promote credit generation, Nigeria should establish strong baseline-and-credit systems or cap-and-trade schemes, depending on sectoral readiness (Stiglitz et al., 2021). Green bonds, carbon project development funds, and tax breaks can all be used to minimize project entry barriers and attract climate funding (World Bank, 2023). Furthermore, integrating carbon finance into capital markets, possibly via the Nigerian Exchange (NGX), can boost liquidity and investor trust. Without financial de-risking and incentive measures, private sector participation will be limited, impeding the growth of Nigeria's carbon trading ecosystem (ICAP, 2023).

While the forestry and clean cooking sectors have historically drawn donor-funded voluntary carbon programs, they are not Nigeria's best bets for large-scale carbon credit creation. Oil and gas (especially gas flaring reduction), off-grid energy and electrification, and industrial process emissions (e.g., cement) are more significant and commercially viable areas. These sectors account for a significant portion of national GHG emissions and are supported by existing regulatory supervision and the possibility for scalable investment. For example, methane abatement projects in the Niger Delta, solar mini-grid extensions, and energy efficiency gains in cement manufacturing might collectively liberate tens of millions of high-integrity carbon credits each year, particularly through Article 6 procedures. This approach not only aligns with Nigeria's emissions profile but also maximizes international demand for verifiable, permanent, and additional emissions reductions.

Integration into International Markets

To effectively profit from the global carbon economy, Nigeria's local market must be aligned with international frameworks, namely Article 6 of the Paris Agreement. Article 6.2 promotes bilateral and multilateral cooperation through Internationally Transferred Mitigation Outcomes (ITMOs), while Article 6.4 establishes a centralized mechanism for trading verified carbon credits under UN supervision (UNFCCC, 2022). Effective participation necessitates national authorization procedures, effective Monitoring, Reporting, and Verification (MRV) standards, and the adoption of appropriate changes to avoid double counting. Establishing a clear national carbon registry is crucial to facilitating credit issuance and international transfers. Furthermore, Nigeria's participation in platforms such as the African Carbon Markets Initiative (ACMI) strengthens its Article 6 compliance capabilities by giving access to technical expertise, market visibility, and international purchasers (ACMI, 2022). Integrating Nigeria's carbon market globally can help to access climate finance and establish the country as a regional carbon trading hub (World Bank, 2023).

Challenges and Mitigation Strategies

Despite the opportunities, Nigeria confronts numerous significant hurdles in establishing a functioning carbon market. The lack of a specialized Carbon Market Act produces legal ambiguity about credit ownership, project authorization, and market enforcement (Akinola & Oladipo, 2023). Institutional fragmentation and overlapping responsibilities amongst agencies impede effective coordination, emphasizing the necessity for a centralized Carbon Market Implementation Unit (CMIU) inside the NCCC (ICAP, 2023). Furthermore, technical capacity limitations in MRV system design, emission baseline establishment, and project validation hinder Nigeria's ability to issue high-integrity carbon credits (Gold Standard, 2021). Financial constraints are also a hurdle, particularly for early-stage projects and small-scale developers, necessitating the use of risk-reduction mechanisms like carbon funds and performance-based incentives (World Bank, 2023). Finally, low stakeholder knowledge and private sector hesitation impede market growth. These issues can be met by thorough law change, targeted capacity building, and strategic collaboration with international partners like ACMI and the UNFCCC.

According to UNDP (2021) and World Bank (2023) research, business sector participants view legal ambiguity and MRV complexity as major deterrents. Civil society organizations express concerns about equitable benefit sharing for community-led carbon programs. Addressing these views is critical for promoting inclusive carbon market development.

Challenge	Proposed Mitigation
Legal ambiguity	Enact the Carbon Market Act (Akinola & Oladipo, 2023)
Institutional gaps	Establish CMIU; capacity building (ICAP, 2023)
Weak MRV infrastructure	Develop sector-specific protocols (Gold Standard, 2021)
Limited finance	Launch carbon fund, leverage green bonds (World Bank, 2023)
Low awareness	Stakeholder outreach and engagement programs (UNDP, 2021)

Stakeholder Perspectives

To enhance practical relevance, this study incorporates insights from key stakeholders, including government agencies, private investors, and local communities. Agencies such as the NCCC and NESREA have highlighted the need for clearer mandates and capacity building for emissions trading and MRV systems (UNDP, 2021). Private sector actors' express interest in carbon finance but cite regulatory uncertainty and credit ownership issues as deterrents (World Bank, 2023). Local communities and civil society groups raise concerns over benefit-sharing and exclusion from project planning, particularly in land-based offsets (Newell

& Taylor, 2021). These perspectives emphasize the importance of inclusive governance and safeguards in Nigeria's carbon market framework.

Federal-State Coordination and Local Incentives

The success of Nigeria's carbon market depends on strong coordination between federal and subnational actors. While the National Council on Climate Change (NCCC) leads policy formulation, effective implementation requires integrating state governments and local authorities. Currently, limited capacity and overlapping mandates hinder decentralized project development and MRV execution. Strengthening collaboration through joint climate action committees, harmonized regulatory frameworks, and integrated planning mechanisms can improve alignment. In addition, incentive structures such as revenue-sharing from carbon credit proceeds, state-managed climate funds, and technical support for state MRV systems will be crucial for mobilizing local governments. These measures can help scale participation, especially in land-use, waste, and energy sectors at the community level.

CONCLUSION AND RECOMMENDATIONS

Conclusion

Nigeria's path to a sustainable, low-carbon future is intrinsically connected to the successful establishment of a transparent, credible, and inclusive carbon marketplace. While the Climate Change Act of 2021 established an initial conceptual basis, it lacked the detail and legal precision required to operationalize carbon trading. A specific Carbon Market Act is urgently needed to identify ownership of carbon credits, regulate market activities, and develop compliance mechanisms (Akinola & Oladipo, 2023). Furthermore, institutional reform is required to establish clear mandates, eliminate role duplication, and allow a centralized organization, such as a Carbon Market Implementation Unit (CMIU), to coordinate market operations (ICAP, 2023). To preserve environmental integrity and investor trust, robust Monitoring, Reporting, and Verification (MRV) systems, as well as a national carbon registry and digital infrastructure, must be implemented.

A phased implementation strategy is critical. By establishing voluntary carbon markets in sectors such as forestry and clean energy, Nigeria may gradually acquire the institutional expertise and stakeholder confidence required to transition to a compliance-based system (World Bank, 2023). With legal clarity, institutional capability, and international alignment, particularly with Article 6 of the Paris Agreement, Nigeria can position itself as a leader in Africa's carbon market landscape (UNFCCC, 2022; ACMI, 2022).

Recommendations

Legislative and Regulatory Reform

Nigeria's carbon market growth must start with a strong legal base. While the Climate Change Act of 2021 establishes extensive mandates, it does not specifically address carbon credit ownership, emissions trading mechanisms, or compliance enforcement. To address these deficiencies, a specific Carbon Market Act should be created. This legislation must define carbon credits as tradable financial or environmental assets, specify rights and obligations for project developers and credit buyers, and provide consequences for fraud or noncompliance (Akinola & Oladipo, 2023).

It should also include mechanisms for corresponding adjustments, as required by Article 6.2 of the Paris Agreement, to ensure environmental integrity and avoid double counting of emissions reductions (UNFCCC, 2022). To minimize institutional conflicts, the new legislation must be consistent with current laws controlling land use, environmental protection, and financial regulation (Ebohon & Alabi, 2021).

Institutional Strengthening and Market Governance

The effectiveness of a carbon market depends on the competence and coordination of its governing institutions. The National Council on Climate Change (NCCC), while mandated as the central policy body, requires operational enhancement through the creation of a Carbon Market Implementation Unit (CMIU). This

unit is responsible for rule-making, credit validation, MRV certification, and liaison with international registries and markets (ICAP, 2023). Other agencies must be assigned specific roles: NESREA for environmental protections, NUPRC for oil and gas emissions oversight, SEC and NGX for financial regulation and exchange operations, and the CBN for green finance and carbon tax policy assistance (World Bank, 2023). Inter-agency coordination frameworks, collaborative training, and shared information systems should be implemented to ensure uniform enforcement, reduce overlap, and foster institutional synergy.

Infrastructure and Technical Capacity

A successful carbon market hinges on a credible system for tracking, verifying, and reporting emissions reductions. Nigeria must develop and implement sector-specific MRV protocols, following ISO 14064 standards and IPCC guidelines, tailored to priority sectors such as energy, agriculture, and forestry (Gold Standard, 2021). A digital National Carbon Registry must also be created to manage the issuance, transfer, and retirement of credits and ensure interoperability with global platforms such as the UNFCCC's Article 6.2 registry. In addition, capacity-building efforts are essential across multiple levels. These include training government officials, independent verifiers, project developers, and community stakeholders in carbon accounting, credit certification, and safeguard enforcement (UNDP, 2021). Without technical infrastructure and human capital, Nigeria risks market inefficiency, low credit quality, and investor mistrust.

Market Development and International Engagement

To catalyze early participation and gain credibility, Nigeria should adopt a phased market development strategy. The initial phase should focus on a voluntary carbon market (VCM), emphasizing sectors with high mitigation potential and low entry barriers, such as afforestation/reforestation (REDD+), clean cookstoves, and landfill methane capture. Lessons from these pilots can inform regulatory improvements and capacity building, eventually enabling a shift to a compliance-based carbon market targeting sectors with higher emissions like oil and gas, cement, and power (ACMI, 2022). To incentivize private sector participation, the government should provide fiscal incentives, such as tax rebates for low-carbon projects, concessional finance, and access to green bonds and carbon guarantee funds (World Bank, 2023). Lastly, Nigeria must proactively engage in international platforms, including the African Carbon Markets Initiative (ACMI) and bilateral ITMO partnerships, to attract investment, share methodologies, and integrate into global trading systems (UNFCCC, 2022; ICAP, 2023).

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