



From NASPA-CCN to Action: Engaging the Private Sector in Financing Nigeria's Climate Resilience Pathway Beyond 2030

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Abstract

Nigeria's vulnerability to climate change poses severe threats to its development goals, demanding urgent and substantial climate finance. While the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) laid a foundational policy framework, its implementation was hampered by limited funding and weak private sector participation. With the enactment of the Climate Change Act (2021), Nigeria now possesses a legally binding framework that mandates climate planning and financing. However, despite growing international support, climate finance flows remain insufficient, with public and concessional sources dominating and private sector contributions averaging only 23% between 2019 and 2021. This study used qualitative review of secondary data and stakeholder policy analysis to critically assess Nigeria's evolving climate finance architecture, examining flows, instruments, providers, and institutional reforms. It identifies key barriers to private sector engagement, including regulatory uncertainty, lack of incentives, and underdeveloped project pipelines. The study concludes that private sector engagement is essential to close Nigeria's climate finance gap and achieve a climate-resilient development trajectory beyond 2030. Drawing on recent trends in green bonds, blended finance, and public-private partnerships, the paper offers actionable strategies for mobilizing private investment. It proposes the establishment of a National Climate Finance Platform, mandatory Environmental, Social, and Governance (ESG) disclosures, and targeted de-risking mechanism.

Keywords: Climate finance; Climate change policy; Climate resilience; Private sector engagement; Sustainable development

Introduction

Nigeria is highly vulnerable to the adverse effects of climate change, including more frequent floods, desertification, sea-level rise, and extreme weather events. These climate-related risks continue to threaten national development goals, affecting critical sectors such as agriculture, water resources, energy, and public health. In recognition of these growing threats, Nigeria took a major step in 2011 by launching the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN). This strategy provided a foundational framework for identifying sectoral vulnerabilities and prioritizing adaptation actions across different levels of governance [1]. However, while NASPA-CCN laid the groundwork for adaptation policy, it lacked the institutional and financial mechanisms required for effective implementation.

To strengthen its climate governance architecture, Nigeria enacted the Climate Change Act in 2021, marking a pivotal shift from policy recommendation to legally binding commitments. The Act established the National Council on Climate Change (NCCC) to coordinate national efforts and mandates the development of a carbon budget and climate action plans, integrating climate change into national planning frameworks [2]. Importantly, the Act also emphasizes the need for sustainable financing mechanisms to support both mitigation and adaptation efforts.

Yet, despite these advancements, a major challenge remains: the gap between Nigeria's ambitious climate policies and the actual mobilization of financial resources, particularly from the private sector. It is estimated that Nigeria will require more than \$177 billion by 2030 to finance its climate change response [3]. Between 2015 and 2021, Nigeria received approximately \$4.93 billion in

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climate finance. In 2021/22, total climate finance in Nigeria was \$1,784 million from public sources and \$760 million from private sources. In terms of private vs public climate finance between 2019 and 2021, public finance contributed \$1.46 billion, while private finance accounted for \$437 million. As of 2022, key climate finance providers to Nigeria from 2015 to 2021 include the World Bank (\$3.17 billion), France (\$616 million), and EU institutions (\$321 million) [4, 5]. Historically, climate finance flows into Nigeria have been dominated by international public sources and concessional loans, with limited domestic private sector involvement. Less than 20% of climate finance mobilized between 2015 and 2020 originated from private sources [4], indicating a substantial underutilization of private capital in the country's climate response. Between 2019 and 2021, private finance accounted for 23% (USD 437 million) of the total USD 1.90 billion climate finance. In 2021/22, private sources contributed USD 760 million to climate finance in Nigeria. Corporations contributed USD 496 million, households and individuals USD 65 million, and philanthropic foundations USD 60 million [6,5]. This underperformance is driven by several factors, including regulatory uncertainty, low awareness of climate investment opportunities, limited access to concessional financing instruments such as green bonds or blended finance, and the absence of strong risk-sharing mechanisms [7]. Furthermore, private investment in climate adaptation especially for vulnerable communities and ecosystems remains disproportionately low compared to mitigation-focused projects like renewable energy. Without a strategic framework to harness private capital, Nigeria risks falling short of its climate resilience goals and undermining the broader objectives of inclusive and sustainable development. While several studies such as Oxfam in Nigeria and Connected Development [8, 6, 9, 10], have examined climate finance flows in Nigeria, few others [11, 12,13], have critically explored the evolving role of the private sector in bridging the climate finance gap, especially in the context of the post-2030 climate agenda. There is a noticeable lack of empirical research and policy-oriented recommendations on how to effectively mobilize, de-risk, and channel private investments into climate-resilient sectors. This knowledge gap has limited the capacity of policymakers and development partners to design effective financial instruments and incentives that align with Nigeria's national adaptation priorities.

In light of these gaps, this paper seeks to advance the discourse on climate finance by focusing on the critical yet underexplored role of the private sector in Nigeria's climate resilience pathway beyond 2030.

The specific objectives of the study are to

1. Review the evolution of climate change policy in Nigeria, from NASPA-CCN to the Climate Change Act, and its implications for climate finance architecture;
2. Analyze the trends and patterns of climate finance flows in Nigeria over the past decade, with particular attention to sources, sectors, and private sector contributions;
3. Identify the key barriers and opportunities for enhancing private sector participation in climate finance;
4. Propose actionable strategies and policy recommendations for engaging the private sector as a vital partner in financing climate resilience and sustainable development in Nigeria.

By addressing these objectives, the paper aims to contribute to the development of a more inclusive and robust climate finance ecosystem, capable of delivering on Nigeria's national and international climate commitments.

Conceptual Framework

The conceptual framework for this study revolves around the interaction of three key concepts: Climate Finance, Climate Resilience, and Public-Private Partnerships (PPPs). These concepts are central to addressing Nigeria's climate challenges and ensuring long-term sustainable solutions beyond 2030. The framework establishes how private sector engagement in financing climate resilience strategies can contribute to a sustainable and climate-resilient Nigeria.

Climate Finance

Climate finance refers to the financial resources mobilized and allocated to address climate change mitigation and adaptation activities. In the context of Nigeria, climate finance plays a critical role in enabling the implementation of the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN), which outlines the country's strategic approach to addressing climate vulnerabilities. Climate finance sources can be categorized into public finance (government budgetary allocations, multilateral finance) and private sector finance (corporate investments, impact investing, green bonds, civil societies, Non-Governmental Organizations, communities and households) [14].

- **Public Finance:** Typically includes funds from national governments and international climate funds such as the Green Climate Fund (GCF), the Global Environment Facility (GEF), and the Adaptation Fund [15]. In Nigeria's case, these funds support adaptation and mitigation projects in sectors like agriculture, water resources, and energy.
- **Private Sector Finance:** The private sector's role in climate finance is pivotal, especially for scaling up investments. Instruments like green bonds, climate-related investments, and

impact investing have the potential to attract private capital [3].

Climate finance ensures that adequate resources are available to build climate resilience and to implement the strategic actions identified under the NASPA-CCN framework thereby enabling everyone to have access to resources and opportunities they need to thrive under a changing climate.

Climate Resilience

Climate resilience is the capacity of a system (including a country, sector, community, households and individuals) to anticipate, prepare for, and respond to climate change impacts, such as extreme weather events, droughts, floods, and rising temperatures (IPCC, 2022). For Nigeria, climate resilience involves not only reducing vulnerabilities to climate-related shocks but also enhancing the country's ability to adapt to changing climatic conditions.

Key dimensions of climate resilience include

- **Infrastructure resilience:** Enhancing the ability of infrastructure (e.g., energy systems, transportation, and water supply) to withstand climate impacts.
- **Economic resilience:** Building sectors such as agriculture, energy, and water management that can adapt to changing climatic conditions.
- **Social resilience:** Strengthening the social safety nets and livelihoods of vulnerable populations to cope with climate disruptions [16].

Climate resilience strategies in Nigeria include both mitigation (reducing emissions) and adaptation (building adaptive capacities), which require financing and investment across various sectors.

Public-Private Partnerships (PPPs)

Public-Private Partnerships (PPPs) are cooperative agreements between the government and private sector entities to jointly invest in and manage climate resilience projects [17]. In the context of Nigeria's climate pathway beyond 2030, PPPs are seen as a crucial mechanism for bridging the financing gap and enhancing the implementation of climate resilience strategies.

PPPs can facilitate

- Leveraging private sector capital for large-scale climate projects, including renewable energy investments, green infrastructure, and climate-resilient agriculture.
- Knowledge transfer between public and private sectors, where the private sector brings technical expertise and innovation to climate adaptation solutions.

- Risk sharing between the public and private sectors in financing long-term, high-risk climate resilience projects [18]. In the framework of NASPA-CCN, PPPs can enable more robust financing for climate action, especially as the government alone may not be able to mobilize sufficient resources.

Linking the Concepts

The study proposes that engaging the private sector in financing Nigeria's climate resilience pathway is pivotal to meeting the country's climate goals post-2030.

The conceptual link between climate finance, climate resilience, and PPPs can be summarized as follows:

- Climate finance provides the necessary financial resources that will enable the implementation of climate resilience strategies.
- Climate resilience ensures that these resources are used effectively in adapting to climate change impacts and mitigating future risks.
- PPPs provide a collaborative model that combines public sector policies and private sector innovation to generate sustainable financing solutions.

By fostering strong partnerships between the public and private sectors, Nigeria can tap into private sector expertise, funding, and technology, thus enhancing the effectiveness of its climate resilience pathway beyond 2030.

Theoretical Framework

This study adopts Institutional Theory as its guiding theoretical lens to examine how formal regulations, policies, and institutional norms shape the behavior of private sector actors in supporting Nigeria's climate resilience agenda beyond 2030. Institutional Theory posits that organizations are not merely driven by efficiency or profitability, but also by the need to conform to the formal and informal rules, norms, and expectations within their institutional environment [19]. It provides a powerful framework to understand how the private sector aligns its strategies, investments, and innovations with national climate objectives in response to evolving regulatory frameworks such as the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN). Central to Institutional Theory are three key institutional pillars - regulative, normative, and cognitive [20]. The regulative pillar underscores the role of laws, policies, and rules in shaping organizational behavior through coercive mechanisms. In the Nigerian context, the NASPA-CCN, the Climate Change Act (2021), and the revised Nationally Determined Contributions (NDCs) are instrumental in influencing private sector responses to climate change. These instruments not only define permissible conduct but also incentivize or penalize

compliance and non-compliance respectively. As DiMaggio and Powell (1983) note, such coercive pressures lead to isomorphism, whereby organizations adopt similar structures or behaviors to conform to regulatory expectations [21]. The normative pillar captures the influence of societal values, professional norms, and expectations that define appropriate conduct. The increasing social demand for environmental responsibility, driven by both local and international stakeholders including investors, consumers, and civil society encourages businesses to voluntarily integrate climate resilience considerations into their operations. This is particularly relevant in sectors like agriculture, extractives, and infrastructure, where environmental risks directly affect long-term viability. The cognitive pillar refers to the shared beliefs and taken-for-granted assumptions that guide how actors interpret their roles and the legitimacy of climate action. In Nigeria, changing perceptions about climate risk, sustainability, and environmental stewardship are gradually embedding climate resilience as a strategic business concern. However, cognitive alignment remains limited without deliberate policy signaling and institutional coordination. By applying Institutional Theory, this study seeks to analyze how Nigeria's climate adaptation policies, especially NASPA-CCN, have influenced or failed to influence the strategic behavior of the private sector. It also aims to identify the institutional voids and misalignments that hinder deeper engagement and financing. Institutional Theory thereby offers a framework to explain both the constraints and the enabling conditions under which private sector actors mobilize resources and align with national climate goals [22,23]. In summary, this theoretical framework allows for a comprehensive exploration of the interaction between climate policy instruments and institutional dynamics within Nigeria's private sector, helping to reveal how regulatory reforms and institutional strengthening can unlock private financing for climate resilience beyond 2030.

Methodology

The methodology employed in this study is the descriptive approach which relied primarily on secondary data sourced from various online platforms and publicly available reports. This approach allows the study to utilize the most current and comprehensive information on climate finance, climate resilience, and public-private partnerships (PPPs) as they pertain to Nigeria's climate goals. The data was collected from government reports, such as the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria [1,2], official publications from relevant Nigerian ministries, and national development plans. International reports and studies from organizations like the United Nations Framework Convention on Climate Change [24], the World Bank [25] and the Green Climate Fund [26] was also

included, focusing on climate finance mechanisms and the involvement of the private sector in climate projects. Academic papers and journal articles available on academic databases further provide insights into climate resilience, climate finance, and PPPs [14,17]. Additionally, private sector reports from organizations such as the Global Impact Investing Network [27], and the UNEP Finance Initiative (2020) was incorporated to examine the private sector's role in financing climate resilience. Publications from think tanks and research institutions like the African Development Bank [28] and the World Resources Institute [29] helped contextualize the study within the broader global climate finance landscape. The collected data undergo content and comparative analysis to identify key themes, trends, and best practices related to the private sector's role in financing Nigeria's climate resilience pathway. The thematic focus included the mobilization of climate finance, the role of PPPs in facilitating private sector participation, and the challenges and opportunities for increased private sector engagement. The study synthesized policies such as NASPA-CCN, evaluate their integration of private sector solutions, and explore the effectiveness of mechanisms like green bonds and impact investing. Data was cross-verified from multiple credible sources, ensuring validity and reliability. However, limitations include the potential lack of real-time or localized data, biases in reports, and limited coverage of some sectors. Ethical considerations are addressed by ensuring full citation and attribution of all secondary sources to maintain academic integrity and transparency.

Result of the Findings

Evolution of Climate Change Policy in Nigeria and Its Implications for Climate Finance Architecture

Nigeria's climate change policy has evolved over the last decade from foundational adaptation planning to the development of an integrated legal and institutional framework. This policy evolution - from the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) to the enactment of the Climate Change Act in 2021 - has important implications for the development of a coherent climate finance architecture. NASPA-CCN, launched in 2011, was Nigeria's first national adaptation strategy. It outlined the country's priorities in addressing climate vulnerabilities, particularly in agriculture, water resources, health, and energy [1]. While NASPA-CCN emphasized the integration of climate adaptation into sectoral development planning and promoted institutional coordination through the Department of Climate Change, it remained a policy-based document without legislative authority. Consequently, its implementation was largely donor-driven, lacked a structured financing strategy, and offered limited incentives or enforcement mechanisms to mobilize private sector participation in climate

adaptation [30]. The submission of Nigeria's Intended Nationally Determined Contribution (INDC) in 2015 under the Paris Agreement marked a turning point by broadening the scope of climate action to include both mitigation and adaptation. The revised Nationally Determined Contribution (NDC) submitted in 2021 set out a dual-target approach: an unconditional commitment to reduce greenhouse gas (GHG) emissions by 20 percent and a conditional target of up to 47 percent reduction by 2030, subject to international support [2]. This strategic shift introduced costed implementation pathways, with Nigeria estimating its climate finance needs at over \$177 billion by 2030. To begin addressing this gap, Nigeria issued Africa's first sovereign green bond in 2017, signaling a growing interest in innovative climate financing instruments [31]. However, access to climate finance remained constrained by weak legal and institutional frameworks, lack of transparency, and low private sector involvement [32].

The enactment of the Climate Change Act in 2021 addressed these gaps by providing a legally binding framework for climate governance in Nigeria. The Act established the National Council on Climate Change (NCCC) with the mandate to coordinate national climate actions, oversee the development of five-yearly National Climate Change Action Plans, and ensure mainstreaming of climate considerations into all development policies and programs [33]. Importantly, the Act introduced a carbon budget system and promoted market-based mechanisms such as carbon trading, thereby creating an enabling environment for private sector investment. It also institutionalized climate finance governance by assigning responsibilities for resource mobilization and monitoring to specific institutions. These provisions are expected to improve Nigeria's eligibility and readiness to access international climate finance, particularly from mechanisms such as the Green Climate Fund (GCF), Global Environment Facility (GEF), and Adaptation Fund. The implications of these developments for Nigeria's climate finance architecture are profound. First, the legal clarity provided by the Climate Change Act enhances investor confidence and encourages long-term planning in climate-sensitive sectors. Second, the institutionalization of climate finance mechanisms supports the creation of a coordinated platform to mobilize, pool, and track funding from diverse sources, including domestic budgets, international donors, and private investors. Third, the framework provides the basis for engaging subnational actors, thereby decentralizing access to climate finance and promoting community-based resilience initiatives. Fourth, it lays the groundwork for mainstreaming climate risk into financial sector regulation, including through potential mandates on environmental, social, and governance (ESG) disclosures. However, key challenges remain. Institutional coordination is still evolving, with overlapping mandates across government agencies.

Climate finance flows remain disproportionately directed toward mitigation rather than adaptation. Moreover, private sector awareness and capacity to access and deploy climate finance remain low [7].

Climate Finance Flow to Nigeria (2015–2021)

Between 2015 and 2021, Nigeria received a total of approximately \$4.93 billion in climate finance across 828 climate-related projects, averaging \$704 million per year. The annual financial inflow increased steadily, peaking in 2020 with over \$1.69 billion committed, reflecting heightened global attention to climate action that year. However, a slight drop occurred in 2021, indicating variability in annual inflows (Table 1).

Table 1 presents an overview of climate finance flows to Nigeria between 2015 and 2021, comparing the expected annual climate finance requirement with the actual funds received. Based on Nigeria's Updated Nationally Determined Contributions (NDCs), the country requires approximately \$17.77 billion annually amounting to \$177.7 billion by 2030 to effectively mitigate and adapt to the impacts of climate change. However, the data reveals a persistent and substantial gap between the expected and received amounts. Over the seven-year period, Nigeria received a total of approximately \$4.93 billion in climate finance, while the expected cumulative amount stood at about \$124.39 billion. This results in a total climate finance gap of approximately \$119.46 billion, with annual shortfalls consistently exceeding \$16 billion. The highest inflow was recorded in 2020, with over \$1.69 billion received, likely due to heightened global attention on climate issues during the post-Paris Agreement stocktaking period. In contrast, the lowest inflow occurred in 2016, with only \$100.5 million received. Several factors contribute to this significant gap. First, Nigeria faces challenges in accessing international climate funds due to complex application processes, limited institutional capacity, and insufficient expertise in preparing bankable projects. Second, the country's domestic climate finance framework remains weak and fragmented, marked by overlapping mandates among relevant agencies and poor integration of climate considerations into national budgets. Third, the private sector remains under-engaged, primarily due to high investment risks, lack of incentives, and the absence of green financial instruments such as climate bonds and carbon markets. Fourth, geopolitical and macroeconomic uncertainties including currency volatility, insecurity, and global crises like the COVID-19 pandemic and the Ukraine conflict have reduced investor confidence and diverted donor attention. Finally, limited domestic resource mobilization further exacerbates the challenge, as Nigeria's public spending on climate initiatives remains low and lacks a coherent long-term investment strategy. To address these challenges and bridge the climate finance gap, Nigeria must enhance institutional coordination, create a

conducive environment for private sector participation, integrate climate finance into national development planning, and expand its access to both international and innovative financial instruments.

Sources of Climate Finance in Nigeria

In Nigeria, climate finance sources include government funding, international climate funds (e.g., Green Climate Fund), multilateral development banks, and bilateral aid. Additionally, private sector investments, including blended finance mechanisms, public-private partnerships, and domestic banks, play a crucial role in financing climate resilience projects, particularly in adaptation and mitigation efforts beyond 2030. The diverse sources of climate finance in Nigeria for 2021/22 is presented (Table 2).

Table 2 shows that climate finance in Nigeria (2021/22) was dominated by public sources, with \$1,784 million mainly from government, bilateral and multilateral development finance institutions. Public actor's committed USD 1.8 billion in climate finance in 2021/22, a 20% increase from USD 1.5 billion in 2019/20. Of this public finance, 65% was provided on concessional terms [34]. Multilateral DFIs continued to be the largest provider of public climate finance in Nigeria, accounting for 67% of the public total. Corporations contributed \$496 million, indicating some private sector involvement, while contributions from households, individuals, and multilateral climate funds remained low. Institutional investors, commercial financial institutions, and foundations were largely absent or untracked. The data highlights the need to mobilize greater private sector participation, improve access to international climate funds, and enhance transparency and tracking of climate finance flows for effective climate resilience and sustainable development in Nigeria.

Key Climate Finance Providers to Nigeria (2015–2021): Insights and Implications

The key climate finance providers to Nigeria (2015–2021) include multilateral institutions such as the World Bank, African Development Bank, and the Green Climate Fund, which have supported a range of climate resilience projects. Bilateral donors, particularly the UK, Germany, and the United States, have also contributed significant funding as shown (Table 3).

Table 3 presents a breakdown of climate finance flows to Nigeria by major international providers between 2015 and 2021, reflecting the central role of development partners and multilateral institutions in financing Nigeria's climate agenda. Over this period, a total of 828 climate-related projects received USD 4.93 billion, and the top contributors accounted for a significant share of this support.

The World Bank emerged as the largest single provider, committing USD 3.17 billion; equivalent to 64% of total climate

finance. With 120 projects, the Bank's average commitment per project stood at over USD 26 million, signaling its emphasis on large-scale, high-impact initiatives, particularly in adaptation and mitigation infrastructure.

Other significant contributors include

- France, providing USD 616 million (13%) across 29 projects, with strong support to both adaptation and mitigation priorities.
- EU Institutions (excluding EIB) committed USD 321 million (7%), showing consistent engagement through grant financing and capacity-building support.
- The European Investment Bank (EIB), though involved in only five projects, had the highest average project size at over USD 41 million, likely focusing on major infrastructure and energy sector interventions.

The Green Climate Fund (GCF) contributed a single high-value investment of USD 99 million, underlining the fund's role in supporting transformative, flagship mitigation projects. Similarly, the Climate Investment Funds (CIF) provided a one-off but significant grant of nearly USD 30 million. Conversely, bilateral partners such as the United States (USD 82 million, 182 projects), UK (USD 53 million, 51 projects), and Germany (USD 49 million, 46 projects) engaged in numerous small-scale interventions, often focusing on capacity building, education, and community-based resilience projects with an average commitment below USD 1.1 million per project. Japan and Norway, while contributing lower total amounts, also highlight the diversity of donor involvement, often channeling funds through technical cooperation and adaptation activities. These figures reinforce a key point: climate finance to Nigeria is largely donor-driven, with limited private sector or institutional investor participation. While development partners have been instrumental in financing large adaptation and mitigation projects, the challenge remains in scaling private finance participation, particularly through blended finance mechanisms, risk-sharing tools, and policy incentives that can crowd in private capital. The disparities in average funding per project also suggest a need for better coordination and aggregation of smaller climate projects to make them more bankable and attractive to commercial investors - an essential step for mobilizing broader private sector support and achieving Nigeria's climate and sustainable development goals. Between 2019 and 2021, Nigeria's climate finance landscape saw a dominant role for public sector funding, primarily through multilateral and bilateral institutions. Private sector involvement remained limited, with significant contributions from non-concessional debt instruments and small-scale equity investments as shown in Table 4. The private-public split highlights the need for stronger private sector engagement,

particularly through blended finance, to scale up financing for climate resilience projects and ensure long-term sustainability beyond 2030 (Table 4).

Table 4 reveals that public finance continues to dominate, contributing 77% (USD 1.46 billion) of the total USD 1.90 billion climate finance, while private finance accounts for 23% (USD 437 million). In the mitigation category, private actors contributed 26%, with public finance supplying 74% of the total USD 1.10 billion. Adaptation projects saw even greater public sector dominance, with 95% of funding coming from public sources and only 5% from private investors. In contrast, dual-benefit projects (those that support both mitigation and adaptation) recorded a higher private sector share at 67%, highlighting the growing interest of private actors in integrated climate solutions. In a strategic effort to expand private sector participation, the Nigerian government, in collaboration with corporate stakeholders, has established a national Climate Fund. This initiative aims to leverage Green Climate Fund (GCF) resources and attract institutional investors for co-financing climate-related projects. Additionally, the Federal Ministry of Environment, through its Department of Climate Change and with support from UNDP, has convened Business Roundtables to raise awareness and drive private sector engagement. These efforts underscore Nigeria's commitment to mobilizing private finance for climate action and achieving a more balanced financing landscape.

In an effort to attract the private sector to participate in promoting investments in climate resilience, the Nigerian government launched in 2017 the Nigerian Green Bond Market. This aims to raise funds for climate-friendly projects, such as renewable energy, sustainable agriculture, and infrastructure as shown (Table 5).

Table 5 details the issuance of green bonds in Nigeria from 2017 to 2021. This Table specifically showcases a mechanism for mobilizing private sector finance towards climate-related projects. It highlights the types of issuers, including the Federal Government and private entities like North South Power Company and Access Bank, and the specific green projects funded, such as renewable energy (solar, wind, hydropower), afforestation, rural electrification, and flood defenses. The total amount raised through green bonds during this period (\$165.1 million USD) represents a segment of private sector contribution to climate finance. This table is crucial for the study as it provides concrete examples of how capital markets can be leveraged to finance green initiatives, demonstrating the potential and existing avenues for private sector involvement in supporting Nigeria's climate resilience and sustainable development goals. The Table 5 highlights the emerging but underdeveloped role of green bonds in mobilizing climate finance for resilience and sustainable development in Nigeria. However, the market remains nascent, and its growth

depends on increasing investor confidence, regulatory support, and clearer project pipelines.

National Budgets and Ministry Expenditures for Climate-related Projects

National budgets and ministry expenditures reflect Nigeria's domestic commitment to climate action. Between 2015 and 2022, key ministries allocated funds to climate-related projects, underscoring sectoral priorities are presented (Table 6).

Table 6 presents a breakdown of climate-related projects across key federal ministries in Nigeria between 2015 and 2022, based on the financial commitments embedded within their annual budgets. The Table 6 highlights six ministries whose mandates intersect significantly with climate action: Agricultural and Rural Development, Science and Technology, Environment, Power, Works and Housing, Water Resources, and Housing. Among these, the Federal Ministry of Agricultural and Rural Development accounted for the highest allocation, receiving \$29.40 million, reflecting the sector's pivotal role in adaptation and climate-smart agricultural initiatives. This was followed by the Ministry of Science and Technology with \$17.90 million, and the Ministry of Environment with \$14.96 million, both of which are central to mitigation, environmental governance, and climate monitoring efforts.

In contrast, the Ministries of Power, Works and Housing, Water Resources, and Housing received significantly lower allocations; \$7.94 million, \$1.48 million, and \$0.73 million, respectively despite their potential roles in enhancing climate resilience through infrastructure, water security, and urban adaptation. These figures, though indicative, underscore the fragmented and relatively modest domestic investment in climate-related projects when considered in the broader context of Nigeria's climate vulnerability and policy commitments.

Mapping these allocations provides a foundational step in understanding the domestic climate finance landscape, and sets the stage for more systematic tracking of climate finance flows; both from domestic sources and international climate finance mechanisms such as the Green Climate Fund (GCF), Global Environment Facility (GEF), and other bilateral support initiatives [35,4]. This mapping exercise also highlights the need to scale private sector engagement and unlock blended finance solutions in line with Nigeria's updated Nationally Determined Contributions (NDCs) and Climate Change Act (2021). However, limited and uneven funding highlights the need for strategic financing mechanisms. Strengthening transparency and aligning budgetary allocations with national climate goals is vital to mobilizing private sector investment beyond 2030.

Private Climate Finance in Nigeria: Trends, Gaps, and Opportunities

Private sector participation in climate finance is crucial for addressing Nigeria’s climate resilience and sustainable development goals. Recent data shows that private climate finance in Nigeria increased from USD 0.4 billion in 2019/20 to USD 0.8 billion in 2021/22, accounting for approximately 30% of the country’s total climate finance flows. This is significantly above the African average of 18%, indicating Nigeria’s relatively stronger capacity to attract private capital for climate initiatives [6]. However, this amount remains modest relative to the country’s

annual climate finance need of USD 177.7 billion, as estimated for implementing its Nationally Determined Contributions (NDCs) [5]. A sectoral breakdown of private climate finance reveals that corporations dominate, contributing USD 496 million (65%). This is primarily in the form of balance sheet equity financing directed at solar photovoltaic (PV) energy generation, notably the Gezhouba Lagos 360MW Solar PV Park, a landmark corporate renewable energy investment [36]. Compared to the African average, where corporate investment comprises 34% of private climate finance, Nigeria demonstrates a higher concentration of private corporate flows in climate-related sectors [6].

Table 1: Climate Finance Flow to Nigeria (2015–2021).

S/No	Year	Expected Amount (\$ Billion)	Amount Received (\$)	Deficit/Gap (\$ Billion)
1	2015	17,770,000,000	162,361,522	17,537,638,478
2	2016	17,770,000,000	100,485,490	17,599,514,510
3	2017	17,770,000,000	324,298,928	17,375,701,072
4	2018	17,770,000,000	862,214,466	16,837,785,534
5	2019	17,770,000,000	511,179,811	17,188,820,189
6	2020	17,770,000,000	1,691,829,969	16,008,170,031
7	2021	17,770,000,000	1,275,329,536	16,424,670,464

Source: Oxfam 2024

Table 2: Sources of Climate Finance in Nigeria (2021/22).

Sources	Amount (\$M)	Sources	Amount (\$M)
Public	1,784	Multilateral DFIs	1,187
		Government	224
		Bilateral DFIs	217
		National DFIs	150
		Multilateral Climate Funds	5
Private	760	Corporations	496
		Unknown	127
		Households/Individuals	65
		Foundations	62
		Institutional Investors	4
		Commercial FIs	3
		Funds	2

Source: CPI (2024)

Table 3: Nigeria’s Climate Finance Sources (2015 - 2022).

Provider	Number of Projects Committed 2015-2021	Total Climate Finance Committed 2015 – 2021 (USD)	(%) of Total Climate Finance Committed 2015 – 2021	Average USD Per Project
World Bank	120	3,170,451,160	64%	26,420,426
France	29	616,422,601	13%	21,255,952

EU Institutions (excl. EIB)	14	321,362,538	7%	22,954,467
EIB	5	207,298,964	4%	41,459,793
AfDB	10	155,360,563	3%	15,536,056
GCF	1	99,000,000	2%	99,000,000
United States	182	82,442,227	2%	452,979
United Kingdom	51	53,089,753	1%	1,040,976
Germany	46	49,841,538	1%	1,083,512
IFAD	14	38,255,262	1%	2,732,519
GEF	57	29,444,190	1%	516,565
CIF	1	29,270,700	1%	29,270,700
Norway	9	24,474,579	0%	2,719,398
Japan	75	15,776,781	0%	210,357

Source: Oxfam (2024)

Table 4: Private-Public Split of Climate Finance in Nigeria (2019-2021).

Category	Private	(%)	Public	(%)	Total (USD – Billions)
Mitigation	286,000,000	26	814,000,000	74	1.10
Adaptation	33,000,000	5	627,000,000	95	0.66
Dual Benefits	127,300,000	67	62,700,000	33	0.19
Total Finance (USD) Billions	437,000,000	23	1,463,000,000	77	1.90

Source: Climate Policy Initiative, 2022

Table 5: Nigerian Green Bond Market

Year	Amount (USD mn)	Green Bond Issuer	Use of Proceeds
2017	29	Federal Government of Nigeria	Solar energy and afforestation
2019	49	Federal Government of Nigeria	Wind & solar energy; rural electrification; afforestation/ reforestation
2019	23.5	North South Power Company Limited	Hydropower
2019	41	Access Bank PLC	Flood defenses; solar energy
2021	15.3	North South Power Company Limited	Solar energy
2021	7.3	One Watt Solar Limited	Solar energy
Total	165.1		

Source: CPI, 2022

Table 6: Breakdown of Ministries Budgeting for Climate Projects in Nigeria (2015-2022)

Ministry	Amount (\$m)
Agricultural and Rural Development	\$29.40 million
Science and Technology	\$17.90 million
Environment	\$14.96 million
Power, Works and Housing	\$7.94 million
Water Resources	\$1.48 million

Housing	\$0.73 million
Source: Nigerian Budget, 2015-2022	

Table 7: Breakdown of Nigeria’s Financial Instruments

Year	Concessional						Non-concessional				Not Specified	
	Grant		Debt Instrument		Equity and Shares in Collective Vehicles		Debt Instruments		Banks		Debt Instrument	
	USD	%	USD	%	USD	%	USD	%	USD	%	USD	%
2015	42,267,235	26%	119,650,582	74%		0%					443,705	0%
2016	98,199,496	98%	959,000	1%		0%					1,326,993	1%
2017	213,349,798	66%	110,949,130	34%		0%						0%
2018	43,528,300	5%	799,296,712	93%	14,634,722	2%	4,754,732	1%				0%
2019	42,312,415	8%	268,463,735	53%	13,515,594	3%	178,005,507	35%	8,882,561	2%		0%
2020	55,285,161	3%	1,374,061,185	81%	4,364,630	0%	258,118,993	15%				0%
2021	85,354,067	7%	1,033,413,354	81%		0%	156,562,115	12%				0%
Total	580,296,472	12%	3,706,793,698	75%	32514946	1	597441347	12	8882561	0	1,770,698	0%

Source: Oxfam (2024)

Households and individuals also played a modest role, contributing USD 65 million (9%) to small-scale solar PV installations. This trend reflects the increasing adoption of decentralized renewable energy solutions by private citizens and communities in response to energy access challenges and rising awareness of climate change impacts.

Philanthropic foundations contributed USD 60 million, mostly in the form of grants directed toward adaptation efforts, particularly within the Agriculture, Forestry, and Other Land Use (AFOLU) sector. This form of concessional funding remains vital for supporting non-commercial, resilience-focused projects that may not yield immediate financial returns but are essential for long-term sustainability [6].

Despite Nigeria having one of the largest pension fund markets in Africa, institutional investors accounted for less than 1% of tracked private climate finance. This is due to several barriers, including perceived investment risks, technology uncertainties, regulatory complexities, and the lack of investment-ready, bankable climate projects. Furthermore, commercial financial institutions also contributed less than 1%, reflecting the limited climate-aligned lending by banks and other lenders in Nigeria [6].

To bridge these gaps, it is imperative for Nigeria to leverage blended finance models that combine concessional and commercial capital. De-risking mechanisms such as guarantees, first-loss capital, and technical assistance can improve the risk-return profile of climate investments, making them more attractive to institutional players like pension funds and insurance firms. Moreover, targeted policy reforms, awareness creation, and

capacity building are needed to enhance the ability of financial institutions to assess and price climate risks and incorporate them into investment decisions [6].

Financial Instrument Breakdown of International Climate Finance

Climate finance instruments are financial tools used to mobilize resources for climate change mitigation and adaptation. These include grants, concessional loans, non-concessional loans, equity investments, and guarantees. Concessional instruments are typically offered by public or multilateral institutions at below-market terms, such as low interest rates or longer repayment periods, to support projects that may not be financially viable but have strong environmental or social benefits. In contrast, non-concessional instruments are provided at commercial or market-based terms and are generally favored by private sector investors seeking competitive returns. The choice of instrument depends on project risk, return potential, and policy objectives. The trajectory of climate finance and the types of financial instruments provided to Nigeria within 2015-2021 shows year-on-year difference (Table 7).

Table 7 reveals a disproportionate reliance on non-concessional debt instruments, which accounted for approximately 75% of total climate finance during the period. This financing pattern underscores the dominance of market-based loans in Nigeria’s climate finance landscape, reflecting limited use of concessional instruments that are typically essential for de-risking investments and catalyzing private sector participation. For instance, in 2020

and 2021 alone, non-concessional debt instruments accounted for 81% of climate finance inflows each year, a trend consistent with findings from the Climate Policy Initiative (2021), which observed that developing countries often face constrained access to concessional finance due to global allocation inefficiencies and limited donor commitments. Concessional finance, which made up only 12% of the total flows, spiked briefly in 2016 (98%) likely due to a large one-off disbursement, but has otherwise remained marginal, further highlighting the limited leverage of public or philanthropic capital to attract private investments.

Equity financing and shares in collective investment vehicles which are critical for long-term private sector engagement and confidence in climate resilience projects remain extremely underutilized, accounting for just 1% of total inflows. This is in line with observations by the African Development Bank [26], which notes that African countries have struggled to attract equity-based climate investments due to weak institutional frameworks, limited project pipelines, and perceived risks. Furthermore, the emergence of blended finance structures seen in the combination of grants, debt, and equity from 2018 onwards suggests a gradual but still insufficient attempt to diversify financing mechanisms. Blended finance is recognized by the OECD and the Global Innovation Lab for Climate Finance as a key approach to crowd in private capital, yet its application in Nigeria remains limited, especially in the context of financing adaptation and resilience infrastructure [37].

The data in Table 7 also shows negligible participation from domestic banks and unspecified debt instruments, pointing to either poor integration of local financial institutions in climate finance or significant gaps in tracking and reporting. The lack of substantial bank-led or private domestic finance confirms UNDP's assessment that Nigeria's financial sector is yet to mainstream climate risk assessment and resilience financing in its operations. As Nigeria moves from the policy orientation of NASPA-CCN to implementation, these financing trends underline the urgency of creating enabling environments that can foster private sector involvement through policy incentives, regulatory reform, and strategic use of public capital. According to the NDC Partnership, engaging the private sector is not only critical for scaling climate finance but also for ensuring the long-term sustainability of climate adaptation and mitigation efforts. Thus, the results reflect a highly skewed climate finance architecture that prioritizes debt over concessional and equity, with limited private sector leadership. For Nigeria to effectively finance its climate resilience pathway beyond 2030, as envisioned in its revised NDCs and National Adaptation Plan, there must be a deliberate shift towards mobilizing private capital through blended finance, improved risk-sharing instruments, and stronger domestic financial sector alignment with climate goals.

Barriers and Opportunities for Enhancing Private Sector Participation in Climate Finance in Nigeria

The private sector plays a critical role in bridging the climate finance gap in Nigeria, yet its participation remains limited due to a complex array of structural, regulatory, and market-based barriers. One of the most significant barriers is the absence of clear policy incentives and enforceable regulatory frameworks that mandate or encourage private sector engagement in climate finance. Although the Climate Change Act provides a legal foundation for climate governance, its implementation remains nascent, and many private actors lack clarity on how to align with or benefit from the law [7]. Additionally, there is limited awareness and technical capacity within the private sector to identify and develop bankable climate projects, particularly those with long-term adaptation benefits that may not offer immediate returns on investment [31]. Financial institutions, for their part, often perceive climate projects as high-risk due to regulatory uncertainty, weak project pipelines, and the lack of risk-sharing mechanisms such as credit guarantees or blended finance instruments [38]. Furthermore, environmental, social, and governance (ESG) standards are yet to be fully mainstreamed into Nigeria's financial regulations, reducing the pressure on businesses to consider climate risks in their investment decisions. However, several opportunities exist to unlock private sector potential in Nigeria's climate finance landscape. First, the growth of green finance instruments such as Nigeria's sovereign green bond issued in 2017 and 2019 - demonstrates market appetite for climate-aligned investments when backed by government credibility and policy support [39]. These instruments provide models that can be replicated and scaled through corporate green bonds, sustainability-linked loans, and climate funds managed in partnership with development finance institutions. Second, the institutionalization of the National Council on Climate Change under the Climate Change Act opens up space for public-private dialogue, policy co-creation, and targeted financial incentives, including tax reliefs and subsidies for green investments. Third, international climate finance sources such as the Green Climate Fund (GCF) and Global Environment Facility (GEF) present co-financing opportunities, especially if Nigeria strengthens its accreditation of national entities and project pipelines [32]. Fourth, the emergence of voluntary carbon markets and the global shift toward ESG-driven investment create new incentives for Nigerian businesses to engage in climate-aligned activities, particularly in sectors like renewable energy, sustainable agriculture, and nature-based solutions. Capacity building, regulatory reform, and the development of de-risking tools remain essential to convert these opportunities into sustained private investment flows.

Challenges to Private Sector Engagement in Climate Financing in Nigeria

Private sector engagement in climate financing in Nigeria faces several challenges that hinder its active participation in the country's climate resilience efforts. Key challenges include:

- **Limited Access to Finance:** The high cost of capital and limited access to concessional funding are significant barriers. Private investors are often deterred by the high risks associated with climate projects and the lack of financial incentives [40]. The dependence on non-concessional debt financing exacerbates this issue, as market-based terms may not align with the long-term needs of climate resilience projects.
- **Regulatory and Policy Uncertainty:** Nigeria's climate finance landscape is characterized by inconsistent policies and regulatory frameworks that create uncertainties for private investors. The lack of clear incentives, tax breaks, or risk-sharing mechanisms impedes private sector interest in long-term investments [5].
- **Inadequate Project Pipelines:** There is a shortage of bankable climate projects that are ready for investment. Many climate resilience projects in Nigeria remain in the conceptual or planning phase, without the necessary feasibility studies, which makes it difficult to attract private capital [28].
- **Weak Institutional Capacity:** Local financial institutions and regulatory bodies often lack the technical capacity to effectively manage and direct climate finance. This leads to inefficiencies in fund allocation and increases the perception of risk [41].
- **Environmental and Social Risks:** Climate resilience projects often involve high environmental and social risks, such as land acquisition issues or community opposition. These risks can discourage private investment, as investors seek projects with more predictable and lower-risk outcomes [42].
- **Lack of Climate Risk Data:** Insufficient access to reliable climate risk data and forecasting models makes it difficult for private investors to assess the potential return on investment or the resilience of climate-related projects [5].

Addressing these challenges requires creating a more conducive environment for private sector participation by improving access to finance, enhancing regulatory frameworks, ensuring clearer project pipelines, and providing better data and technical support for climate resilience projects in Nigeria.

Actionable Strategies and Policy Recommendations for Engaging the Private Sector in Climate Resilience and Sustainable Development in Nigeria

To effectively engage the private sector as a vital partner in financing climate resilience and sustainable development in Nigeria, a multifaceted strategy is required that addresses institutional, financial, and policy-related challenges. First, there is a need to establish clear regulatory frameworks and fiscal incentives that de-risk climate investments for private actors. This includes the provision of tax credits, green subsidies, concessional loans, and guarantees for climate-resilient infrastructure, renewable energy projects, and nature-based solutions [7]. Second, the Nigerian government should institutionalize mandatory climate risk disclosures through financial sector regulators such as the Central Bank of Nigeria (CBN) and the Securities and Exchange Commission (SEC), thereby mainstreaming Environmental, Social, and Governance (ESG) criteria into financial decision-making and encouraging green investment [38]. Third, the creation of a National Climate Finance Platform led by the National Council on Climate Change (NCCC) would help coordinate domestic and international climate finance flows while also serving as a one-stop hub for the private sector to access funding, technical support, and project pipelines. Such a platform could be integrated with international mechanisms like the Green Climate Fund (GCF) and the Adaptation Fund, enabling public-private co-financing models and the scaling up of bankable climate projects [32]. Fourth, the government should develop sector-specific investment frameworks, particularly in key areas such as renewable energy, sustainable agriculture, resilient urban development, and climate-smart water management. These frameworks should be supported by policy guarantees and performance-based incentives to attract long-term private capital. Fifth, there is a need for capacity building and awareness campaigns targeting financial institutions, small and medium enterprises (SMEs), and corporate leaders to enhance their understanding of climate finance instruments, risk assessment, and reporting standards. Establishing climate finance incubators and accelerators, in collaboration with development partners and commercial banks, can nurture innovation and support early-stage green ventures. Finally, strengthening public-private dialogue mechanisms is essential. This includes setting up advisory boards, climate investment roundtables, and PPP units at both national and subnational levels to ensure policy coherence, stakeholder alignment, and shared accountability [39].

Conclusion

Nigeria's transition from policy frameworks like NASPA-CCN to a legally grounded climate governance structure under the Climate Change Act marks a pivotal shift in addressing its climate vulnerabilities. However, despite notable progress in mobilizing public and donor-based climate finance, the scale of investment remains grossly inadequate relative to the country's estimated

annual need of \$177.7 billion. This underscores the urgent necessity of private sector engagement as a complementary and catalytic force. Current trends reveal promising but insufficient private participation, with climate finance still heavily reliant on non-concessional debt and dominated by public institutions. The study identifies institutional misalignments, low investor confidence, regulatory gaps, and limited access to risk-sharing instruments as critical barriers. Yet, opportunities abound in green bonds, blended finance, ESG-aligned investments, and voluntary carbon markets. To unlock private capital at scale, Nigeria must strengthen policy coherence, enhance financial sector capacity, and develop investment-ready project pipelines. Establishing a National Climate Finance Platform, mainstreaming climate risk disclosures, and incentivizing climate-resilient investments are key. Ultimately, a proactive and well-structured private sector engagement strategy is indispensable to achieving a climate-resilient, inclusive, and sustainable development pathway for Nigeria beyond 2030 [43,44].

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