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# **Declaration**

I declared that I am the sole author of this thesis. This final version, approved by my examiners, includes any required revisions. It is an original work, not previously submitted for any academic degree. All sources and contributions are properly acknowledged and cited.

# Abstract

The phenomenon of climate change presents a substantial threat to both humanity and the earth, which has led to global efforts to tackle the activities that contribute to it and seek remedies. Nigeria, ranking second in terms of carbon emissions in Africa between 2016 and 2021, exhibits an extensive reliance on fossil fuels, particularly within the energy sector. The nation is highly vulnerable to the impacts of climate change, such as severe weather phenomena, rising sea levels, and disruptions in agricultural activities. Nigeria has demonstrated its commitment to international agreements, such as the Paris Agreement, by pledging to combat climate change and decrease its carbon emissions. Banks have a vital role in providing financial support for infrastructure and development projects, and they have the ability to direct investments towards projects and initiatives that have low carbon emissions. Financial products, such as green, social, and sustainability-linked bonds, are increasingly being used to provide finance for initiatives that are beneficial to the climate. These instruments also allow investors to match their portfolios with environmental and social objectives.

The aim of the research is to identify the shortcomings and challenges that impede banks from giving priority to low-carbon investments, as well as to examine the strategic utilization of sustainable finance instruments. The primary research questions include the factors that impact the investment decisions of the banking sector in low-carbon initiatives, the potential harmonies and conflicts between profitability targets and decarbonization efforts, and the impact of various financial and non-financial institutions in the market for green bonds. The study aims to assess the current investment in low-carbon projects by Nigerian banks, assess the effectiveness of existing bond strategies, identify barriers and difficulties, and to examine possibilities for collaboration between banks, government agencies, and international organizations.

The study utilized a qualitative methodology to collect data by examining policy documents, literature, and the official websites of the various Nigerian institutions. Interviews were also conducted with stakeholders in the fields of sustainability, sustainable finance, and banking. The findings of this study make a significant contribution to the literature. They will also assist banks in incorporating Environmental, Social, and Governance (ESG) standards into their lending policies, thereby improving sustainability throughout their financial operations. Ultimately, the study will help Nigeria move towards a sustainable, low-carbon economy by providing valuable information for making financial decisions, developing bond strategies, and establishing a policy framework.

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# List of Abbreviations

5Ds - Five Dimensions of Decarbonization  
ACMI - African Continental Market Integration  
ACreSAL - Agro-Climatic Resilience in Semi-Arid Landscapes  
AFC - Africa Finance Corporation  
AFDB - African Development Bank  
AFOLU - Agriculture, Forestry, and Other Land Use  
BOA - Bank of Agriculture  
BOI - Bank of Industry  
BM - Bank Manager  
CBI - Climate Bonds Initiative  
CBN - Central Bank of Nigeria  
CFA - Chartered Financial Analyst  
CO<sub>2</sub> - Carbon Dioxide  
COP - Conference of the Parties  
CSA - Climate-Smart Agriculture  
DSTs - Dynamic Stochastic Models  
DFIs - Development Finance Institutions  
EBA - European Banking Authority  
ECB - European Central Bank  
EIB - European Investment Bank  
ERGP - Economic Recovery and Growth Plan  
ESG - Environmental, Social, and Governance  
ETS - Emission Trading Scheme  
ETP - Energy Transition Plan  
EU - European Union  
EV - Electric Vehicle  
FITs - Feed-in Tariffs  
FMDQ - Financial Market Dealers Quotations  
FRCN - Financial Reporting Council of Nigeria  
GDP - Gross Domestic Product  
GABV - Global Alliance for Banking on Values  
GHG - Greenhouse Gas  
GRI - Global Reporting Initiative  
GSIA - Global Sustainable Investment Alliance

GT Banks - Guaranty Trust Banks  
HEDA - Human and Environmental Development Agenda  
HFCs - Hydrofluorocarbons  
HVAC - Heating, Ventilation, and Air Conditioning  
ICMA - International Capital Market Association  
ICT - Information Communications Technology  
IDPs - Internally Displaced Persons  
IEA - International Energy Agency  
IFCs - International Finance Corporations  
IPCC - Intergovernmental Panel on Climate Change  
IRENA - International Renewable Energy Agency  
ISFNZ - International Standards for Finance for Net Zero  
KGFT - Kenyan Green Finance Taxonomy  
KPIs - Key Performance Indicators  
LMA - Loan Market Association  
LNG - Liquefied Natural Gas  
Mt - Megatonne  
NCCC - National Climate Change Commission  
NCCG - Nigerian Code of Corporate Governance  
NCF - Nigerian Conservation Foundation  
NDB - Nigerian Development Bank  
NEMSF - Nigerian Electricity Market Stabilization Facility  
NERC - Nigerian Electricity Regulatory Commission  
NGB - Nigerian Green Bonds  
NGN - Nigerian Naira  
NREEEP - Nigerian Renewable Energy and Energy Efficiency Policy  
NSFBP - National Sustainability Framework for Banking Principles  
NZE2050 - Net Zero Emissions by 2050  
NZBA - Net-Zero Banking Alliance  
OECD - Organisation for Economic Co-operation and Development  
OHCHR - Office of the United Nations High Commissioner for Human Rights  
PCAF - Partnership for Carbon Accounting Financials  
PES - Payment for Ecosystem Services  
PRB - Principles for Responsible Banking  
PRI - Principles for Responsible Investment  
PWC - PricewaterhouseCoopers

REA - Rural Electrification Agency

SASB - Sustainability Accounting Standards Board

SBN - Sustainable Banking Network

SFE - Sustainable Finance Expert

SFI - Sustainable Finance Initiative

SLP - Sustainability Linked Performance

SO - Sustainability Officer

SPTs - Sustainability Performance Targets

SDGs - Sustainable Development Goals

SEC - Securities and Exchange Commission

SFDR - Sustainable Finance Disclosures Regulation

UNEP - United Nations Environment Programme

UNFCCC - United Nations Framework Convention on Climate Change

UBA - United Bank for Africa

USD - United States Dollar

# Chapter One

## Introduction

### 1.1 Background of the study

Nigeria, a developing nation with a rapidly growing economy, faces significant challenges in its journey towards decarbonization. Nigeria contributes to global carbon emissions due to its high reliance on fossil fuels, especially in the energy sector. Fossil fuel financing in Nigeria continues to dominate. Its financing remains prevalent in Nigeria. From 2016 to 2021, the country ranked second in Africa for the quantity of fossil fuel projects financed (Stout, S., & Meattle, C. 2022). Of these, one Liquefied Natural Gas (LNG) project received USD 2.77 billion in funding alone, more than the total amount of climate finance tracked in 2019/2020 (Geuskens & Butijn, 2022).

However, the country is also highly vulnerable to the impacts of climate change, including extreme weather events, rising sea levels, and agricultural disruptions. Findings by USAID (2023) show that rising sea levels are the most fantastic driver of flooding and waterborne disease in the country. Drought and global warming also impair fisheries and agricultural output, which lowers food security and has a detrimental effect on nutrition and health.

In recent years, there has been a global push towards reducing carbon emissions and transitioning towards a low-carbon economy. Regardless of its vulnerabilities, Nigeria, as a signatory to international agreements such as the Paris Agreement, is committed to mitigating climate change and reducing its carbon footprint. This necessitates a comprehensive approach involving various sectors, including the banking sector. The banking sector is crucial to Nigeria's decarbonization journey through investment decisions and financial strategies. Recently, the sustainability reports of some Nigerian banks reflect a commendable shift towards reducing direct and indirect emissions throughout their operations. Some banks have effectively tracked their emission trends and implemented mitigation strategies.

In its 2022 Sustainability Report, the United Bank for Africa (UBA) for example, outlined various initiatives aimed at emission reduction. Notable efforts include converting 119 Automated Teller Machines (ATMs) to renewable energy sources, transitioning to paperless communication, and prioritizing environmentally compliant suppliers in procurement processes. This has made significant strides in reducing its greenhouse gas (GHG) emissions as part of its commitment to achieving net-zero status by 2050 (ThisDay 2024).

As major financiers of infrastructure and development projects, banks can drive investment towards low-carbon projects and initiatives. Banks can brutally influence corporate actors' (stakeholders) actions vis-à-vis GHG emissions reductions through climate-related decision-making processes and product/market

innovations through capital allocation, loans, and otherwise. The most significant of which are direct or indirect (Bowman 2010).

Allocating capital to specific projects, such as renewable energy, energy efficiency, sustainable transportation, and other climate-friendly sectors, catalyses decarbonization (Bowman 2010). Banks can demonstrate their capability of facilitating the transition to a greener economy. The banking sector can also leverage bond strategies to support decarbonization efforts in Nigeria. Green, social, and sustainability-linked bonds are increasingly used to raise capital for environmentally sustainable projects (S&P Global 2023).

These financial instruments provide funding for climate-friendly initiatives and offer investors an opportunity to align their portfolios with environmental and social goals. The practice of allocating funds specifically for projects with measurable ecological effects promotes responsible investment strategies and facilitates the shift towards an economy that is both low-carbon and resource-efficient (Distelkamp and Meyer, 2019). Hence, the banking sector in Nigeria holds significant potential to contribute to decarbonization by promoting investment in low-carbon projects and adopting bond strategies that support sustainable development.

## **1.2. Statement of the Problem.**

This research attempts to ascertain a great need to focus on the role financial institutions, especially the banks, can play in the quest for decarbonization to a low carbon economy (transition). The banking sector in Nigeria faces a pressing challenge in aligning its investment strategies with the urgent need to transition to a low-carbon economy. Despite growing global momentum towards decarbonization, Nigerian financial institutions often prioritize conventional investments over those supporting sustainable, low-carbon projects. A typical example was the claim made by a senior executive officer of the Africa Finance Corporation (AFC), owned by Nigeria's central bank and other African financial institutions. Sanjeev Gupta, executive director of financial services AFC at the Reuters IMPACT climate conference in London:

"We cannot and will not run away from fossil fuel-based investing because the continent's development needs are so huge," he emphasized. "The world still needs energy security; the world still needs energy source diversity. "No energy mix in the world in the next 50 years says no oil and gas, so why would we not develop our resources and fund our fiscal budgets? (Reuters 2023)"

Thus, the statement made by Gupta explains the challenge between combating climate change and the economic needs of the countries, especially the developing economies. Thus, this misalignment exacerbates climate change's impacts, undermines economic resilience, and jeopardizes Nigeria's ability to meet its international climate commitments. A report released by development charity Action Aid revealed that banks worldwide gave \$3.2 trillion to the fossil fuel industry in Global South countries (in which

Nigeria is among) in the seven years since the 2015 Paris climate agreement, which aimed to limit global warming to 'well below' 2 degrees Celsius by slashing emissions (Action Aid, 2023).

It is rhetorical to ask whether these funds have any impact vis-à-vis decarbonization. Could this lack of emphasis on financing low-carbon initiatives hinder Nigeria's access to green finance opportunities, impeding its competitiveness in the evolving global economy? Hence, this research aims to identify the gaps and barriers preventing banks from prioritizing low-carbon investments.

It will investigate the strategic use of sustainable finance instruments, such as green and sustainability-linked bonds, comparing Nigeria's sustainable finance practices with international benchmarks. The research will highlight areas of alignment and divergence. Moreover, it will target specific strategies for the Nigerian banking sector to implement, aimed at channelling investments into low-carbon projects. This endeavor aims to aid the country's decarbonization and sustainable development transition.

### **1.3. Research Questions.**

This study will attempt to answer the following fundamental questions:

1. What are the key factors influencing the banking sector's investment decisions in low-carbon projects in Nigeria, and how do these decisions impact the country's decarbonization efforts?
2. What are the potential synergies and conflicts between the profitability goals for Nigerian banks and their role in promoting decarbonization through investment in low-carbon projects and bond strategies?
3. How does the involvement of various financial and non-financial institutions in the green bond market in Nigeria influence the distribution of capital towards decarbonization initiatives?
4. How well is Nigeria doing to meet its commitment to international treaties and agreements regarding climate change?

### **1.4. Objectives of the Study.**

The study aims to investigate the roles of the banking sector in Nigeria's decarbonization journey:

1. To assess Nigerian banks' current level of investment in low-carbon projects, including renewable energy, energy efficiency, and sustainable transportation initiatives.
2. To evaluate the effectiveness of existing bond strategies employed by Nigerian banks to finance low-carbon projects, analyzing their impact on decarbonization efforts and sustainability.
3. To identify the gaps, compare the Nigerian banking sector's role in achieving net-zero carbon emissions with international standards.
4. To identify the key challenges and barriers Nigerian banks face in scaling up investment in low-carbon projects and adopting sustainable bond strategies.
5. To investigate potential opportunities for collaboration between Nigerian banks, government agencies, and international organizations to accelerate the transition towards a low-carbon economy.

6. To provide recommendations for policy interventions, regulatory frameworks, and financial incentives that can enhance the role of the banking sector in supporting Nigeria's decarbonization objectives while promoting economic growth and financial stability.

## **1.5. Significance of the Study.**

This study will have many practical and theoretical implications. While the transition has become a topic of concern and discussion across all sectors of the economy and among various stakeholders such as state governments, universities, and NGOs, it is crucial to recognize and highlight the pivotal role of the banking sector in this journey. Therefore, the study will offer a clear view of what banks and other financial institutions in Nigeria can do to assist in the quest for decarbonization and transition towards sustainable endeavours.

The banks might use the findings of this study to identify gaps in their dealings using international benchmarks and to improve their performance vis-à-vis net-zero commitment.

The study will help the banks learn how to integrate environmental criteria into lending practices, enhancing sustainability across financial operations. It will support policymakers in crafting effective climate change mitigation policies and aligning financial strategies with environmental and social objectives. It will help climate change experts and activists identify how far Nigeria has come as a member of the Paris Agreement and Kyoto Protocol (Paris Agreement: Signed on 22 September 2016, ratified on 16 May 2017; Party to Kyoto Protocol: Ratified on 10 December 2004) meeting up with its commitment regarding 1.5 degrees by 2030.

Furthermore, it will contribute to Nigeria's transition to a sustainable, low-carbon economy through informed financial decisions, bond strategies, and a policy framework.

Finally, but most importantly, this study is important for academia and scholarship. It will shed light on the crucial intersection of finance and sustainability, offer practical strategies for aligning financial practices with environmental goals, contribute to the expanding knowledge base on sustainable development in emerging economies, and provide valuable insights for future policy decisions regarding climate change mitigation and financial regulation.

## **1.6. Scope of the Study.**

While banks can contribute extensively to decarbonization efforts beyond conventional perspectives, this study focuses on the Nigerian banking sector's role in investing in low-carbon projects. It examines the strategies involving bonds in place to support the government's agenda of transitioning to a low-carbon economy.

## **1.7. Operational Definitions:**

1. **Banking Sector:** institutions that provide financial services like deposits, loans, and investments.
2. **Bond Strategies:** Plans for investing in bonds to optimize returns and manage risks.

3. **Decarbonization:** is the process of reducing carbon emissions to combat climate change.
4. **Energy Efficiency Initiatives:** Measures aimed at reducing energy consumption and waste while maintaining or improving productivity.
5. **Green Bonds:** Bonds specifically fund environmentally beneficial projects.
6. **Investment:** the allocation of funds into assets or projects with the expectation of generating returns or achieving specific objectives.
7. **Low Carbon Projects:** Initiatives minimizing carbon emissions or intensity in economic activities.
8. **Renewable Energy Infrastructure:** facilities or systems harnessing energy from naturally replenishing sources like sunlight, wind, or water.
9. **Sustainability-Linked Loans:** Loans with terms linked to borrowers' sustainability performance.
10. **Sustainable Transportation:** Modes of transportation that minimize environmental impact and promote social and economic equity.



# Chapter Two

## Literature Review

### 2.1. Definition of decarbonization

Banks are uniquely positioned to drive significant strides towards decarbonization within their operations while supporting decarbonization efforts through their investments (Atos). Limiting global warming to 1.5°C requires countries to aim for net-zero emissions by 2050, achievable through comprehensive decarbonization strategies. This involves transitioning to renewable energy sources like wind and solar, electrifying various sectors, and implementing carbon capture and storage initiatives in agriculture and forests. Successful decarbonization demands transformation across all sectors, including power generation, industry, transport, buildings, and agriculture (Cho, R. 2022).

Decarbonization, within the scope of sustainable finance, encompasses diverse approaches tailored to specific circumstances and objectives. The IPCC AR-5 of Working Group III (IPCC, 2014a) defines decarbonization "as the process by which countries or other entities aim to achieve a low-carbon economy, or by which individuals aim to reduce their carbon consumption." Similarly, the IPCC Special Report on 1.5 °C (IPCC, 2018) slightly alters this definition, framing it "as the process by which countries, individuals, or other entities aim to achieve zero fossil carbon existence. Typically, this refers to reducing CO<sub>2</sub> emissions associated with electricity, industry, and transport" (Wimbardi & Djalante,2020). Decarbonization revolves around anthropogenic behavioral changes affecting the environment, society, and economy.

It encompasses both climate change mitigation and adaptation efforts. Scholars, governments, and NGOs have consistently advocated for decarbonization. Rogelj et al. (2015) underline the urgent need for significant decarbonization efforts to lower carbon intensity in the energy sector, aiming to prevent exceeding the critical threshold of 1.5°C warming by mid-century. They advocate for immediate expansion and investment in low-carbon technologies, particularly electricity generation, focusing on developing nations.

Rockström et al. (2017) also outline a decarbonization roadmap to achieve long-term global temperature targets. This roadmap involves transforming the energy sector, implementing carbon management strategies in agriculture, and restoring degraded lands through afforestation.

They stress the importance of governance, financial mechanisms, and technological support to implement these approaches effectively. However, the extent to which financial mechanisms should be used and how they should be used were not explicitly stated. It is essential to acknowledge potential challenges and counterarguments. Some critics may question the feasibility or economic viability of specific decarbonization strategies. Addressing these concerns requires careful consideration of technological advancements, policy frameworks, and investment incentives to overcome barriers to implementation.

## 2.2. Nigeria's Commitment to Decarbonization.

Transitioning to a low-carbon economy in Nigeria is imperative for sustainable development and mitigating climate change impacts, as highlighted in the Climate Transparency Report 2020. As of 2018, Nigeria's annual emissions stood at approximately 347 Mt carbon dioxide equivalent (CO<sub>2</sub> e), with the energy and agriculture, forestry, and other land use (AFOLU) sectors being the primary contributors.

The energy sector alone accounted for around 60 per cent of total emissions, encompassing emissions from various sources such as fugitive emissions from the oil and gas sector, transportation, electricity generation, and residential and industrial consumption. Meanwhile, AFOLU activities contributed around 25 percent of emissions, with waste and industrial processes making up the remaining percentage (Bhattacharya A. et. 2023).

Despite being the fourth-largest emitter in Africa, Nigeria's average per capita emissions are relatively low, significantly below the African average, and substantially lower than OECD countries (Ayompe et al., 2021). This underlines the need for a just transition towards a low-carbon economy in Nigeria, ensuring that communities are not left behind.

Implementing policies and initiatives aimed at reducing emissions from the energy sector, promoting sustainable agricultural practices, managing waste effectively, and improving industrial processes will be essential for Nigeria to achieve its emission reduction goals while fostering equitable development and social justice.

This transition must prioritize the well-being of communities, particularly those most vulnerable to the impacts of climate change, to ensure a fair and sustainable outcome for all.

The future trajectory of Nigeria's greenhouse gas (GHG) emissions over the next decade and the strategies to fulfil public commitments are significant considerations. According to government estimates, Nigeria's total emissions are projected to increase to 453 MtCO<sub>2</sub>e by 2030, with a slight shift in the distribution of emissions (FME, 2021a). Specifically, the energy sector's share is expected to decrease to 51 per cent, while emissions from agriculture, forestry, and other land use (AFOLU) are anticipated to rise to 33 per cent.

Nigeria's nationally determined contribution (NDC) aims for an unconditional 20 per cent reduction in emissions below the business-as-usual scenario by 2030. Additionally, with adequate international support, the country targets a 47 per cent reduction (FME, 2021a). Notably, most of these conditional reductions are anticipated in the electricity sector. A transition to a greener scenario entails meeting these targets, which would involve diversifying the electricity generation mix away from fossil fuel-based self-generation. Over the past decade, the Nigerian government has introduced various adaptation and mitigation measures and enacted several policies and legislation to support decarbonization activities.

Notable examples include the Climate Change Act of 2021, which establishes an institutional framework for achieving Nigeria's decarbonization objectives. In this context, the discussion primarily focuses on proposed measures for the energy and agriculture sectors, given their significant contributions to

GHG emissions. Promoting renewable energy sources is also considered part of the broader strategy for mitigating emissions and transitioning towards a more sustainable energy landscape (decarbonization).

### **2.2.1. Energy Sector.**

The Nigeria Energy Transition Plan (ETP), launched in 2022, is central to Nigeria's decarbonization strategy. This plan outlines a pathway for the country to achieve carbon neutrality by 2060, emphasizing a just transition to mitigate potential job losses resulting from declining global demand for fossil fuels. Additionally, it aims to enhance access to modern energy services for the Nigerian population, with targets set at 90 per cent electrification by 2030 and universal electrification by 2040. While renewable energy is a focus, the ETP also advocates using natural gas as a "transition fuel" to support Nigeria's long-term net-zero goals. The plan addresses emission reduction across various sectors, including power generation, residential and commercial buildings, transportation, oil and gas, and industry.

### **2.2.2 Agriculture, Forestry, and Other Land Use (AFOLU) Sector.**

Regarding the Agriculture, Forestry, and Other Land Use (AFOLU) sector, the federal government has outlined high-level adaptation strategies for crop and livestock production, water resources, fisheries, and related elements. As outlined in various government publications, these strategies include climate-smart agriculture (CSA) initiatives aimed at increasing agricultural productivity and mitigating climate change impacts. One specific goal is to reduce the fraction of crop residues burned by half by 2030. Additionally, forestry and land use measures target the improvement and restoration of southern Nigeria's natural forests and mangrove ecosystems, along with efforts to reduce fuel wood harvesting and protect forest land.

### **2.2.3. Sustainable Energy.**

As of 2019, Nigeria aimed to achieve 30 GW of installed on-grid capacity by 2030, with approximately 13.8 GW coming from grid-connected renewables, representing around 45 per cent of total capacity and 30 per cent of generation (Roche et al., 2020). According to a transition scenario proposed by Roche and colleagues (2020), renewables could increase their share in the energy composition sufficiently to meet the Nigerian government's target of 15 per cent by 2030, excluding large hydropower.

Potential solutions for both off-grid and on-grid settings include standalone solar photovoltaic (PV) systems, hybrid mini-grids, the expansion of large hydropower, and the integration of solar PV and other non-hydro renewables into the on-grid sector. However, financing these options will be crucial for achieving the targets by 2030. Nevertheless, a clear pathway exists for further investment in renewable energy, particularly solar, to drive electricity generation in Nigeria in the future.

### **2.2.4. Climate Change Act.**

The Climate Change Act, enacted in 2021, is a fundamental piece of legislation providing legal and institutional support for Nigeria's climate-related initiatives. This act establishes the National Council on Climate Change, which includes key government officials, private sector representatives, and civil society

members. The council's responsibilities encompass setting emission targets, implementing mitigation measures, developing a carbon budget for Nigeria, and establishing mechanisms such as carbon taxes and emissions trading.

Notably, the act introduces the Climate Change Fund, which is financed through appropriations from the National Assembly, international sources, and revenue generated from carbon taxes and emissions trading. This fund supports Nigeria's climate actions (Bhattacharya, A. 2023). Nonetheless, the later discussion will stress the banking sector's role in the country's plan to decarbonize the economy through investment and bond strategies.

### **2.2.5. Just Transition**

The increasing global commitment to tackling climate change has revealed that achieving a zero-carbon or net-negative world would require significant and unprecedented changes impacting numerous facets of human and non-human species life on Earth (IPCC, 2018).

Just Transition refers to a framework to ensure that the shift towards a low-carbon economy is fair and inclusive. It seeks to address the socio-economic impacts of decarbonization on workers, communities, and other stakeholders by integrating social and environmental justice principles into climate policy. The concept encompasses multiple forms of justice, including procedural, distributive, recognition, and restorative justice, to address the broader implications of decarbonization and its potentially unequal effects across different geographical (Abram, S., et al. 2022).

Just Transition operates through a whole-systems approach that involves multiple policy spheres, including health, industrial policy, social welfare, and housing. This approach recognizes the need for coordinated efforts across various sectors to achieve decarbonization while ensuring social equity (Abram, S., et al. 2022).

Nigeria's commitment to the Paris Agreement includes ambitious targets for CO<sub>2</sub> emission reductions and ending gas flaring by 2030. However, despite these commitments, the country continues to increase oil production (Dangote Petroleum Refinery, for example), highlighting the need for a more defined roadmap to transition from oil dependency.

In both the petroleum and agriculture sectors for instance in Nigeria, there is significant interest in transitioning due to the perceived utility value, including better jobs, wages, and improved living conditions. This interest underlines the potential of green technologies and new skills acquisition to provide new opportunities. Climate change and CO<sub>2</sub> abatement are recognized as important but secondary factors.

Communities are developing alternative energy sources, such as devices to power boats and generators without petrol or diesel. Additionally, respondents believe in unexploited opportunities for job creation in agriculture, transportation, recreation, and tourism, which can help offset job losses during the transition.

In the agriculture sector, there is a strong push towards agro-ecology, which includes using organic fertilizers and reducing reliance on chemical inputs. This traditional practice for sustainable farming is seen as a viable part of the transition to a low-carbon economy.

For a just transition, workers in the fossil fuel sector face risks of redundancy. A just transition involves promoting a diverse energy mix with a higher proportion from renewable sources and clean technologies. This transition requires global climate stabilization funds to support workers and communities dependent on fossil fuels, ensuring their livelihoods are secured during the shift.

Workers in the oil sector have not received adequate training for new skills required for the energy transition. There is a call for investment in new technology for clean energy transitions and social protection measures to mitigate job losses. These measures are crucial for ensuring a smooth transition and maintaining social stability.

The transition to a low-carbon economy requires shifts in production and consumption, including greener technologies and reducing greenhouse gas emissions. The agriculture and petroleum sectors, being major employment sources, are critical to this transition. Ensuring these changes are just and equitable is essential for addressing environmental and social impacts (Ojo, G. U., & Mustapha, H. 2021).

### **2.3. Role of the Banking Sector.**

Banks and other financial institutions are increasingly expected to actively promote green economy investment as a crucial decarbonization measure. Consequently, providing credit and loans to fossil fuels projects is now seen as counterproductive to environmental efforts. Such investments are considered "anti-greening financial lending," focusing on ventures not dedicated to conserving natural resources, exploring alternative energy sources, or implementing environmentally friendly practices (Koester, 2016). This stance opposes various international, national, and local initiatives to reduce greenhouse gas emissions (Odeku, K. O. 2017).

One effective, scientifically proven measure to decarbonize is for banks to invest in ventures with low carbon emissions (Campiglio, 2016). The Kyoto Protocol, an international agreement under the United Nations Framework Convention on Climate Change, mandates its parties to adhere to internationally binding emission reduction goals (Bodansky, 2010). This encourages countries to increase investment in environmentally friendly projects and ventures through their financial institutions (Geels, 2013).

Banks are crucial in promoting green investments by providing credit and loan facilities to companies venturing into or already engaged in eco-friendly businesses (Draft, 2012). These businesses are committed to improving their environmental performance while enhancing competitiveness (Hirsch, 2011). The problem is whether the banking sector needs to do more regarding investment and bond issues to support the state government in decarbonizing the economy.

## 2.4 Landscape of Sustainable Finance in Nigeria.

Sustainable finance refers to considering environmental, social, and governance (ESG) considerations when making investment decisions in the financial sector, leading to more long-term investments in sustainable economic activities and projects (European Union 2022). The future of finance is stakeholder capitalism. Companies can no longer operate by prioritizing shareholders as the dominant audience. Now, employees, communities, customers, regulators, and the planet require their “voices” to be heard. That means decision-making needs to be fluent in integrating all factors—including environmental, social, and governance (ESG) factors—when choosing where to allocate capital (G. Sinclair 2021).

In the case of Nigeria, In the fiscal years of 2019 and 2020, Nigeria witnessed an average annual investment of USD 1.9 billion from both the public and private sectors directed towards climate-related endeavors. However, this amount only represents a mere 11% of the staggering USD 17.7 billion required annually to achieve the Nationally Determined Contribution (NDC) target of reducing emissions by 47% below business-as-usual levels by 2030. When juxtaposed with Nigeria's substantial GDP of USD 432 billion in 2020 and the vast potential for low-carbon development, it becomes apparent that the current climate finance inflow is disproportionately small.

Despite the urgent need for climate action, fossil fuel projects continue dominating Nigeria's investment landscapes. Between 2016 and 2021, Nigeria ranked second in Africa for the number of fossil fuel projects financed. Notably, a single liquified natural gas (LNG) project received USD 2.77 billion, surpassing the total climate finance tracked in 2019/2020. This reliance on fossil fuel financing entails challenges in redirecting financial flows towards sustainable, low-carbon alternatives (Stout, S., & Meattle, C. 2022).

The financing gap in priority sectors remains glaring within Nigeria's climate finance framework. With an annual requirement of USD 17.7 billion to fulfill the conditional NDC commitments, the current investment levels fall significantly short. Particularly concerning is the need for more adaptation finance, which amounted to USD 663 million, failing to align with Nigeria's vulnerability to climate change impacts, as evidenced by its low ranking in ND GAIN's vulnerability index (Stout, S., & Meattle, C. 2022).

To effectively address climate challenges, there's crucial to augment adaptation finance alongside mitigation efforts. Despite mitigation finance totaling USD 1.1 billion in 2019/2020, adaptation financing must be substantially increased to fulfil Nigeria's NDC objectives. Presently, concessional debt emerges as the primary channel for climate finance, with minimal contributions from grant- and equity-based finance.

The disparity between public and private sector investments is noteworthy, with private sector contributions accounting for only 23% of the total climate finance committed in 2019/2020. This highlights the untapped potential for greater private sector involvement in driving climate-resilient investments within Nigeria. Hence, the involvement of the banking sector as a private entity holds significant importance. Thus,

addressing these gaps and increasing the scale of climate finance inflows is imperative for Nigeria to effectively tackle climate change and transition towards a sustainable future.

### **2.4.1. Green Bonds and Other Sustainable Financial Instruments.**

Green bonds are a specific debt instrument defined by the Securities and Exchange Commission (SEC) as financing exclusively allocated to projects with positive environmental impacts (SEC Green Bond Rules 2018). Unlike traditional bonds, which fund various projects, green bonds channel investments solely into environmentally beneficial endeavours such as renewable energy and sustainable buildings (World Economic Forum, 2023). Another noteworthy sustainable financial instrument is the sustainability-linked bond (SLB), where the bond's characteristics are tied to predefined sustainability objectives, Endeavor sure through Key Performance Indicators (KPIs) against Sustainability Performance Targets (SPTs) (ICMA, 2023).

Unlike green bonds, SLBs offer flexibility in fund allocation, but failing to meet the set targets can increase the issuer's interest rates (Bouzidi & Papaioannou, 2022). Nigeria's commitment to the Paris Climate Agreement is evident in its issuance of Africa's inaugural sovereign green bond in 2017, followed by a second series in 2019. These bonds raised NGN 10.69 billion and NGN 15 billion, respectively, to fund projects related to energy, land use, and other sectors. However, independent evaluations assessing the project's environmental, social, and economic impacts aligned with Nigeria's nationally determined contributions (NDCs) are notably lacking (Adejo, 2022).

Access Bank pioneered Nigeria's first corporate Green Bond in corporate finance, valued at 15 billion Naira (approximately \$41 million). This five-year, 15.5 per cent fixed-rate Senior Unsecured Green Bond due in 2024 garnered significant demand. It primarily finances projects on water infrastructure, solar power generation, and flood mitigation. Access Bank's rigorous evaluation, aligned with the Climate Bonds Initiative (CBI) standards, identified projects across eleven sectors as beneficiaries, including renewable energy, sustainable waste management, and clean transportation (SFI, 2020).

Green and sustainability-linked bonds represent innovative financial instruments that channel investments into environmentally beneficial projects, with the former exclusively funding such endeavours and linking financial characteristics to predefined sustainability objectives. Nigeria's issuance of sovereign green bonds underlines its commitment to decarbonization, yet independent evaluations assessing their alignment with nationally determined contributions still need to be improved. Continuing efforts to enhance transparency, accountability, and impact assessment are essential for advancing the effectiveness of green finance instruments in addressing pressing environmental challenges.

### **2.4.2 Role of Development Finance Institutions (DFIs).**

Development Finance Institutions (DFIs) are specialized financial institutions that provide long-term finance for private-sector projects, particularly in developing countries. They are often established or backed by governments or international organizations to promote economic development, poverty reduction, and job

creation in emerging markets. DFIs typically offer various financial services, including loans, equity investments, guarantees, and technical assistance. They focus on sectors such as infrastructure, energy, agriculture, healthcare, and education, which are crucial for economic growth and social and sustainable development.

DFIs play a critical role in directly financing investments needed to realize the SDGs and human rights and leveraging resources from the private sector. Investment in transport, energy, water, Information Communications Technology (ICT), and other infrastructure sectors is an important part of this effort. They demonstrate advisory and normative roles in developing national policy legal and regulatory frameworks (OHCHR 2023).

In Nigeria, like many other countries, there are quite many DFIs. They include the Bank of Agriculture (BOA), the Bank of Industry, the Development Bank of Nigeria PLC, the Federal Mortgage Bank of Nigeria, the Nigeria Export-Import Bank, and The Infrastructure Bank (CBN). However, which role they play regarding decarbonization is a question that must not be answered in a hurry. Beyond boundaries, DFIs such as the AfDB have contributed positively to value-added agriculture sector development in Nigeria through loans (Ewubare, D. B., & Onah, A. O. 2022). "Agriculture is a sector that has been considered as one of the carbon emissions key players in Nigeria and was explained under Agriculture, Forestry, and Other Land Use (AFOLU) above.

Like their regional counterpart, DFIs in Nigeria hold significant potential to spearhead the nation's decarbonization endeavours. With the country grappling with energy challenges and ambitious climate targets, DFIs can channel finances into renewable energy projects, leveraging Nigeria's vast solar, wind, hydro, and biomass resources to diversify its energy mix and diminish reliance on fossil fuels. Though it is easier said than done because of systematic corruption and ineffective governance mechanisms, re-strategizing their investment decisions will be a turn-off for carbon emissions.

## **2.5 Regulatory Environment for Sustainable Finance in Nigeria.**

Nigeria's evolving regulatory landscape for sustainable finance is increasingly addressing environmental, social, and governance (ESG) concerns while promoting responsible financial practices. The Central Bank of Nigeria (CBN) plays a critical role in this transformation, as evidenced by Dikau and Volz (2021), who discuss the impact of central bank policies on green finance and sustainability, highlighting the CBN's potential to catalyze the financial sector's transition towards decarbonization (Dikau & Volz, 2021).

Moreover, the Securities and Exchange Commission (SEC) of Nigeria has introduced initiatives to improve ESG-related transparency and disclosure among listed companies, as explored by Oyewole (2021). These efforts by the SEC are vital in enabling investors to make more informed decisions and align with global ESG standards aiming for low carbon emissions (Oyewole, 2021).



Nigeria's commitment to sustainable finance is also evident in its Green Bond Program, which mobilizes capital for environmentally sustainable projects. However, the country needs help in implementing these initiatives, such as stronger regulatory enforcement and capacity building among financial institutions.

Other strategic government policies, particularly in the agricultural sector, also play a crucial role in the sustainable finance landscape. Onyiriuba et al. (2020) highlight the importance of governmental policies in agricultural financing, which are integral to achieving sustainable development in Nigeria (Onyiriuba et al 2020). These policies are essential for creating an enabling environment for sustainable finance, contributing to the economy while craving for decarbonization and environmental sustainability.

Despite these challenges, the regulatory environment for sustainable finance in Nigeria is gradually maturing, creating a conducive environment for investments that yield positive environmental, social, and financial returns. Thus, it is way too far behind to meet the standards of some countries, especially in Europe.

## **2.5.1 Existing Guidelines and Frameworks.**

### **2.5.1.1 Central Bank of Nigeria (CBN) Sustainable Banking Principles.**

The introduction of the Sustainable Banking Principles by the Central Bank of Nigeria (CBN) in 2012 marked a significant shift towards integrating sustainability in Nigeria's banking sector. These principles aimed to encourage banks to consider environmental, social, and governance (ESG) factors in their operations, focusing on areas like environmental and social risk management, financial inclusion, and sustainable lending.

The positive impacts of CBN's Sustainable Banking Principles are evident. Enhanced Environmental and Social Risk Management practices have become more proactive in assessing environmental and social risks, leading to more responsible financing practices (Ojong et al 2014). The principles have facilitated the promotion of Financial Inclusion, extending banking services to underserved populations (Nwagwu 2020), thereby driving economic growth and poverty reduction. Sustainable Lending Practices have also seen a surge, with banks offering loans for environmentally friendly projects (Oyegunle and Weber 2015). Moreover, Corporate Responsibility and Transparency have improved significantly within banking operations, aligning with global reporting standards (Michael and Oluseye 2014).

However, alongside these achievements, notable drawbacks and challenges must be addressed. Implementation Challenges persist, with some banks facing difficulties in fully integrating these principles due to factors such as lack of expertise and inadequate infrastructure (Ojong et al. 2014). The lack of robust mechanisms to measure the actual environmental and social impact of banking practices poses a significant limitation (Oyegunle and Weber (2015). The potential conflict between prioritising sustainability and achieving short-term profitability goals is also a notable challenge (Nwagwu 2020).

Moreover, Regulatory and Policy Gaps may hinder the effective enforcement of sustainable banking (Dikau and Volz 2021). Market Readiness and Consumer Awareness also pose barriers to the growth of

sustainable banking, with the readiness of the market to embrace sustainable products and services, along with a general lack of consumer awareness (Nwobu 2015).

In a nutshell, while the Sustainable Banking Principles introduced by the CBN have positively impacted the Nigerian banking sector by driving a shift towards more responsible and sustainable banking practices, challenges remain in terms of implementation, impact measurement, balancing economic goals with sustainability, and ensuring regulatory compliance.

### **2.5.1.2 Green Bond Program.**

Nigeria's Green Bond Program, initiated in 2017, represents a groundbreaking stride in Africa's sustainable finance sector. This pioneering effort is designed to support environmentally sustainable projects that include renewable energy, afforestation, and climate resilience initiatives. The significance of this program lies in its potential to foster sustainable development and address climate change, which are crucial issues facing not just Nigeria, but the global community.

The development of Nigeria's Green Bond Program aligns with the global shift towards sustainable finance, a movement emphasising the integration of environmental, social, and governance (ESG) factors into investment decisions. The importance of incorporating sustainability aspects into financial market actors' decision-making processes underlines the relevance of such programs in driving green innovation and climate change mitigation efforts (Ionescu 2021).

However, the journey of integrating green finance into Nigeria's economic framework has its challenges. Ozili (2022) notes the absence of a comprehensive regulatory framework for green finance instruments in Nigeria, despite the country's early adoption of the green bond market in Africa. This gap in the regulatory framework could potentially hinder the effective implementation and scaling of green finance initiatives. The importance of a robust regulatory environment is crucial for ensuring that green bonds achieve their intended environmental outcomes and offer a reliable investment for financiers.

Financial inclusion is another critical element in the context of sustainable finance. Financial inclusion acts as a catalyst for sustainable development, implying that broadening access to green finance can have a far-reaching impact on achieving low carbon or decarbonization which falls under broader targets of sustainability goals. Therefore, Nigeria's Green Bond Program should not only focus on project financing but also on making these financial instruments accessible to a wider segment of the population.

The transition towards green banking practices is an essential component of sustainable finance. Financial regulators and institutions like CBN and SEC can play a role in developing green banking policy frameworks with a specific focus (Park and Kim 2020). This should include not only the creation of green financial products like green bonds, but also the development of banking practices that support environmentally sustainable projects to achieve decarbonization.

Nigeria's Green Bond Program marks a significant step towards integrating sustainable finance into the national economic framework. However, the success of this program depends on addressing some of the

drawbacks earlier mentioned. As Nigeria continues to lead the way in Africa's green finance sector, it sets a precedent for other nations to follow in the pursuit of a more sustainable and climate-resilient future. Indeed, other countries in the continent are following in their footsteps to ensure decarbonization and climate targets are achieved.

### **2.5.1.3 Securities and Exchange Commission (SEC) Regulations.**

The Securities and Exchange Commission (SEC) in Nigeria, initially established as a branch of the Central Bank of Nigeria in 1962 and known then as the Capital Issues Committee (Oladapo, O., 2022), is the main regulator of the Nigerian capital markets. In recent years, the SEC has focused on integrating environmental, social, and governance (ESG) considerations into its regulatory framework. This includes introducing ESG reporting requirements for listed companies and promoting sustainable investment practices among asset managers.

Significant efforts towards decarbonization are evident in SEC Nigeria's initiatives, such as the development of green bond rules in 2018. These rules specify how proceeds from green bonds should be used and managed, requiring issuers to submit annual reports detailing the allocation of funds, anticipated impacts, performance indicators, and metrics (Securities and Exchange Commission, 2018). This approach aims to ensure transparency and accountability, which is crucial for assessing the effectiveness of projects in reducing greenhouse gas emissions and achieving other environmental benefits.

Alongside the green bond rules, the SEC has also adopted the Nigerian Sustainable Finance Principles (NSFP), which are designed to foster a resilient and sustainable capital market. The principles encourage entities to incorporate ESG factors into their operations to mitigate negative impacts. This includes creating ESG policies, and environmental management programs, complying with labour standards, and implementing corporate social responsibility initiatives. The SEC also promotes collaborative partnerships for capacity building, emphasizing the importance of stakeholder collaboration in managing ESG risks and developing sustainable policies.

Furthermore, the SEC highlights the significance of financing priority sectors like green finance, advocating for the measurement and disclosure of investments in these areas to contribute to national economic growth. Additionally, the principles emphasize respecting human rights, promoting women's economic empowerment, supporting job creation, and enhancing financial inclusion. This includes advocating for equal employment opportunities and policies that benefit women. Lastly, the SEC mandates regulated entities to report their progress in implementing these principles and to ensure proper ESG disclosures, which involves developing reporting criteria, setting targets, and establishing a sustainable finance reporting template (Guidelines on Sustainable Financial Principles for the Nigerian Capital Market, April 2021). The SEC's comprehensive approach, combining regulatory measures and incentives, aims to integrate sustainability into the core of Nigeria's capital market operations, reflecting a global trend towards more responsible and environmentally conscious investment practices.

#### **2.5.1.4 Corporate Governance Codes.**

Nigeria has corporate governance codes and guidelines that emphasise the importance of sustainability and responsible business practices. These codes, such as the Nigerian Code of Corporate Governance, and the CBN corporate governance guidelines encourage companies to consider ESG factors in their decision-making processes and disclosure practices.

The importance of sustainability in promoting long-term corporate performance is emphasised in the Nigerian Code of Corporate Governance (NCCG). The code stresses in its principle 26 titled “sustainability” the need for corporations to function as responsible corporate citizens by highlighting occupational, social, environmental, and community health and safety aspects. This dedication links business operations with more general societal and environmental goals in addition to promoting economic success.

The code encourages corporations (which in this instance banks) to use responsible investment approaches that take governance, social, and environmental aspects into account. With this strategy, financial institutions may be sure to benefit society and the environment in addition to pursuing financial rewards. Through the evaluation of investments' ethical and sustainable implications, banks coordinate their operations with more general social and environmental objectives.

Through their lending and investment choices, banks are acknowledged to play a crucial role in advancing sustainable practices. Positive change can be implemented by banks by including sustainability requirements in their financial services. This entails evaluating how funded projects will affect society and the environment, pushing for sustainable business practices among clientele, and endorsing programs that improve the general welfare of society and the planet.

Though not expressly mentioned, the code emphasises sustainability and suggests the significance of decarbonization initiatives. Banks can take an active role in the decarbonization process by supporting energy-efficient technologies, funding renewable energy projects, and pulling out of industries that rely heavily on fossil fuels. Banks can play a major role in the shift to a low-carbon economy by giving priority to investments that reduce carbon emissions (NCCG) 2018 & CBN Corporate Governance Guidelines 2023).

In summary, the codes emphasize the significance of integrating environmental, social, and governance (ESG) considerations into investment and business decisions through their focus on sustainability, responsible investing, and the strategic role of corporations. This integrated strategy helps to position corporations (here banks) as significant stakeholders in a more environmentally conscious and sustainable economic environment by supporting sustainable development and decarbonization measures.

#### **2.5.1.5 International Standards and Frameworks.**

The Global Reporting Initiative (GRI) standards and the UN Principles for Responsible Investment (PRI) are two examples of international frameworks and standards for sustainable finance that Nigerian financial institutions, more especially the banks, may also adhere to. Following these international guidelines can help build credibility and encourage sustainable investment, which could speed up the decarbonization

process. The PRI sets a global standard for responsible investing, emphasising the integration of environmental, social, and governance (ESG) factors into investment decision-making processes. This framework guides investors to not only consider the financial return but also the environmental and societal impact of their investments. For Nigerian banks, adopting the PRI could mean reshaping investment portfolios to favour industries and projects that support a low-carbon economy, such as renewable energy, sustainable agriculture, and green infrastructure. The PRI's emphasis on active ownership gives these organizations more clout in influencing their investors, pushing them to embrace sustainable business practices and openness in their ESG disclosures (PRI 2021).

The GRI Standards on the other hand provide a framework for financial institutions to report on their impacts on the environment, society, and the economy. These standards are designed to be universally applicable, regardless of the organization's size, sector, or location. For Nigerian financial institutions, implementing the GRI standards would entail comprehensive disclosure of their operational and investment impacts on sustainability issues. This includes reporting on aspects such as greenhouse gas emissions, and energy usage, among other things. Such reporting not only enhances transparency and accountability but also helps these institutions identify areas where they can improve their environmental and social impact.

Nigerian financial institutions have a rare chance to take the lead in sustainable finance thanks to the combination of the PRI and GRI frameworks. Banks and other financial institutions can deploy capital towards more sustainable projects by adding ESG considerations into investment analysis (as recommended by the PRI). This is consistent with Nigeria's overarching goals of encouraging sustainable economic growth and lowering its carbon footprint.

At the same time, adopting the GRI standards for reporting purposes complements the PRI's emphasis on transparency and accountability. It allows financial institutions to track and communicate their progress in implementing responsible investment practices. Such reports can serve as a tool for stakeholders, including investors, customers, and regulators, to assess the institution's commitment to sustainability and responsible investing (Global Reporting Initiatives, 2023).

The journey towards decarbonization is not just about reducing risks or complying with regulations. It is about recognizing the financial sector's pivotal role in shaping a sustainable future. Nigerian banks can have an impact on the larger market and economy by following certain international frameworks just like the ones stated above. Establishing standards for ethical investing and showcasing the feasibility and profitability of sustainable business models can lead the shift towards sustainable practices in other industries.

### **2.5.1.6 Academic Research and Thought Leadership.**

Through their thorough research, perceptive publications, and significant thought leadership initiatives, academic institutions and research organizations in Nigeria are pillars of potential that can drive the development of sustainable finance frameworks. These organizations may greatly influence policy

discussions, industry practices, and the development of sustainable finance in the nation by utilising their knowledge and resources (Gardner, C. J et al 2021).

Academic research serves as a cornerstone for unravelling the complexities of sustainable finance. Researchers shed important light on the environmental, social, and governance (ESG) aspects that influence financial decision-making. Their utilization of reliable data sources, including case studies and empirical research, guarantees the caliber and dependability of their conclusions, educating stakeholders, financial institutions, and policymakers about the importance of incorporating sustainability into financial plans (Edmans, A., & Kacperczyk, M. 2022).

Academic publications serve as reliable platforms for sharing best practices and knowledge spread. Academic studies, white papers, and peer-reviewed publications enable researchers to broadly disseminate their findings and suggestions. Scholars enhance the legitimacy of their research by citing reliable sources, which impacts discussions and promotes knowledgeable choices among practitioners and policymakers.

Academic conferences and seminars also offer vital platforms for knowledge exchange and collaboration within the sustainable finance community. Bringing together experts from academia, government, industry, and civil society, these events facilitate dialogue on emerging trends and pressing challenges. Drawing upon credible sources in presentations deepens understanding and identifies strategies for advancing sustainable finance agendas and sustainability as a whole aiming for decarbonization (Cunha, F. A. F. de S., Meira, E., Orsato, R. J., et al. 2021).

Moreover, academic institutions engage directly with policymakers and industry stakeholders to advocate evidence-based policies and practices. Researchers leverage their credibility to shape regulatory frameworks that incentivize responsible investment and risk management. Aligning recommendations with international standards would immensely enhance the impact of advocacy efforts.

In conclusion, academic institutions and research organizations in Nigeria have a significant influence on advancing sustainable finance. Their contributions through research, publications, and thought leadership initiatives contribute to developing robust frameworks and practices. Integrating sustainability into financial decision-making promotes long-term economic prosperity and environmental stewardship.

### **2.5.1.7 Partnerships and Initiatives.**

In Nigeria, the promotion of sustainable finance is greatly influenced by the collective endeavors of various organizations, such as government authorities, financial institutions, civil society groups, and global development partners. These collaborations are essential in guiding the financial sector towards sustainability. They accomplish this by promoting skills growth, encouraging knowledge sharing, and actively advocating for their cause.

Government-led initiatives are crucial in promoting sustainable development. The government is dedicated to integrating sustainability into the financial sector by employing strategic public financing methods. The aforementioned solutions highlight the significance of government participation in sustainable

finance, demonstrating the potential influence of carefully crafted policies and initiatives (Igharo et al., 2022).

International collaboration is an essential element of Nigeria's sustainable finance framework. Collaborations with international organizations such as the World Bank, IMF, and others enhance the endeavors to achieve lasting financial stability. These relationships are crucial for providing money and improving the accountability and empowerment processes in Nigerian financial initiatives. Global sustainability endeavors are interconnected, and cross-border cooperation is significant in obtaining sustainable outcomes. This is evident in the international support received (Aremu, 2022).

Another vital factor is the importance of multi-stakeholder partnerships in fostering entrepreneurship and ensuring economic sustainability. Through the involvement of multiple stakeholders, these coalitions promote job creation and foster economic growth, both of which are essential for achieving sustainable development. The synergy among multiple stakeholders emphasizes the usefulness of collaborative approaches in achieving sustainable development goals (Lawal & Gunu, 2020).

Furthermore, the correlation between corporate governance, the unique attributes of a company, and sustainability measures is a crucial area of concentration. Gaining a comprehensive understanding of these dynamics is crucial for promoting a culture of sustainability inside financial institutions. The statement highlights the correlation between the internal governance structures and unique qualities of organizations, and their impact on their sustainability practices. This, in turn, shapes Nigeria's overall sustainable finance landscape (Tutt, 2023; Furqat Fatulloevich, 2023).

Thus, the advancement of sustainable finance in Nigeria is significantly shaped by the cooperative efforts of many stakeholders. Their combined endeavors in improving skills, spreading knowledge, and promoting are crucial in incorporating sustainable practices into the financial industry.

## **2.6 Gaps and Areas for Improvement.**

### **2.6.1 Lack of Comprehensive Regulatory Framework.**

The development of sustainable finance in Nigeria is hindered by the absence of comprehensive regulatory frameworks designed to support the shift toward decarbonization. It is not true to say there are no regulations that support sustainable finance, considering both international and national legislation, as the country happens to be a member of the Paris Agreement on climate change, which the convention mentioned as one of its main objectives in Article 2(c) encouraging finance flows consistent with a pathway towards low decarbonization. The regulation reaffirms that developed countries should take the lead in providing financial assistance to less endowed and more vulnerable countries while encouraging other parties' voluntary contributions. Large-scale investments are necessary to reduce emissions, significantly necessitating climate finance for mitigation.

Also, the Climate Change Act of the Federal Republic of Nigeria mentioned, though not explicitly, the importance of sustainable finance, especially under Part 1, Section 1, titled Objectives and Applications. In

addition, in part four, section fifteen, titled Financial Provision, the act expressly considered any finance targeting decarbonization as a “climate change fund.” It is interesting to know that other frameworks, like Sustainable Finance Banking Principles developed by the Central Bank of Nigeria, corporate governance, and others, mention the importance of sustainable finance in one way or another. However, the significant impediment is the lack of an explicit or comprehensive framework tailored to nurture sustainable finance activities. The lack of suitable regulatory frameworks obstructs the efficient implementation of climate change policies, leading to fragmentation and insufficiency (Egeruoh-Adindu, I. E. 2022).

Hence, the current regulatory framework is plagued by unclear or express provisions regarding sustainable finance initiatives. The lack of clarity in this situation leads to doubt and potential danger for investors and stakeholders, hindering the movement of financial resources into decarbonization activities like renewable energy projects. The absence of clear framework standards hinders investment and the advancement of sustainable finance initiatives.

In addition, regulatory bodies in Nigeria frequently lack the requisite resources and specialized expertise to supervise and control the transition to a low-carbon economy adequately. The lack of knowledge and resources presents difficulties in creating and executing regulations that promote the involvement of companies in sustainable finance initiatives to decrease carbon emissions.

To overcome these regulatory challenges, developing an inclusive and consistent regulatory framework for reporting on environmental factors and initiatives to reduce carbon emissions in Nigeria is essential. Standardization is crucial for guaranteeing uniformity, comparability, and clarity of information across different sectors (Nwokolo, S. C., et al. 2023). Standardization improves the legitimacy and reliability of given information by setting defined criteria for reporting environmental data and defining materiality in sustainability disclosures (Morley, J. 2023).

Moreover, implementing a consistent regulatory framework streamlines the task of recognizing and measuring the risks and opportunities, empowering investors and stakeholders to make well-informed choices. It is necessary to work together to create strong regulatory systems that prioritize environmental, social, and governance concerns and encourage the reduction of carbon emissions in Nigeria. The regulation needs to be in such a way that it stimulates the use of domestic resources (the independent issuers and banks), decreases dependence on international funding, enforces efficient regulations for green bonds, such as Sukuk and diaspora bonds, implements emission trading and carbon taxes, and guarantees supportive measures like budgetary allocations and tax exemptions for climate initiatives (Edeminam, V. B., & Akpasoh, A. M. 2023)

## **2.6.2 Limited Enforcement Mechanisms.**

The challenges are not only the ones associated with the unexplicit regulatory framework. However, the existing enforcement bodies to oversee and enforce these regulations, guidelines and principles are lacking. Effective enforcement mechanisms to ensure compliance with sustainable finance guidelines are not up to standard, which in most cases results in underinvestment in sustainable projects or greenwashing practices.



Since banks (development and commercial), independent investors, and other issuers like corporations do it voluntarily. Strong enforcement mechanisms to compel the applications of those regulatory frameworks are lacking. For instance, the role of the central bank in enforcing the sustainable finance banking principles of Oil and Gas Sector Guidelines where phrases like “should” instead of “shall” and “will need to monitor and report on their activities” instead of “must monitor and report their activities” (Sustainable banking principles 2012). Perhaps these persuasive words, instead of authoritative, contribute to ineffective enforcement or denigrate the potential of those enforcement bodies. Also, there is an ineffective justice system and arbitration process. In most cases, this capital for development projects and infrastructure is diverted due to systematic corruption among private institutions, including banks and government officials.

What about other bodies like the Securities and Exchange Commission (SEC), Financial Reporting Council of Nigeria (FRCN) and National Climate Change Commission (NCCC)? Needless to say, they are not doing enough to meet Nigeria's need for a sustainable financial landscape. Limited or ineffective enforcement mechanisms pose a significant challenge to sustainable finance. This issue stems from inadequate regulatory frameworks, the lack of effective oversight bodies, ineffective justice systems, and arbitration processes that hinder the implementation of sustainable practices. But what could be the reason for these limitations, could there be a nexus between the limitation and systemic corruption, lack of transparency, or just the poor structure of the enforcement bodies or explicit framework to ginger the enforcement (Ciupac-Ulici, et al. 2024)? Improved enforcement structures are crucial for enhancing the environment and creating a sustainable finance landscape. Thus, effective enforcement ensures compliance with environmental and social governance standards and builds trust and stability in financial markets. The limited enforcement mechanisms currently in place, as highlighted, indicate a critical area for improvement to achieve true sustainability in finance.

### **2.6.3 Limited Awareness and Capacity.**

The players participating in sustainable finance practices in the country have a lack of comprehensive understanding of sustainability as a whole and sustainable finance in particular. This lack of knowledge is a barrier to effectively implementing sustainable finance practices.

The lack of knowledge and ability presents major obstacles to the successful adoption of sustainable finance practices by financial institutions, regulators, and stakeholders. Poor comprehension of sustainable finance concepts and their consequences hinders the advancement of incorporating environmental, social, and governance (ESG) elements into the financial decision-making process (Sustainable Finance - Faster Capital. n.d.). Hence, there is a need to integrate sustainability knowledge into academic curricula and social campaigns from the beginning, focusing on human development.

Financial institutions often struggle to fully comprehend the potential risks and opportunities associated with sustainable finance. According to a report by the Global Sustainable Investment Alliance (GSIA), while sustainable investing assets have been steadily growing globally, there is still a significant gap in

understanding among financial professionals about ESG integration and its impact on investment performance (Global Sustainable Investment Review 2018).

Regulators also face challenges in promoting sustainable finance due to limited capacity and expertise. Despite increasing recognition of the importance of sustainable finance regulation, many regulatory bodies lack the resources and expertise needed to develop and enforce robust frameworks. This can result in fragmented approaches to sustainable finance regulation across jurisdictions, hindering the development of a cohesive global framework.

Moreover, stakeholders such as asset owners, asset managers, and corporate entities may lack the necessary knowledge and skills to effectively engage with sustainable finance practices. A survey conducted by the CFA Institute found that while there is growing interest in sustainable investing among investment professionals, many still feel ill-equipped to integrate ESG factors into their investment decision-making processes (Leung, M., et al. 2021).

Addressing these challenges requires concerted efforts to enhance awareness and build capacity among financial institutions, regulators, and stakeholders. Training programs, workshops and educational resources can play a crucial role in equipping professionals with the knowledge and skills needed to navigate the complexities of sustainable finance. Collaboration between public and private sector stakeholders is also essential to nurture knowledge sharing and best practice exchange Oluwadara, A. (2024,).

Furthermore, regulatory initiatives aimed at promoting transparency and disclosure of ESG-related information can help raise awareness and incentivize the adoption of sustainable finance practices. Through the improvement of awareness and capability, stakeholders can get a deeper understanding of the significance of sustainable finance and actively promote beneficial transformations towards a more sustainable financial system.

#### **2.6.4 Inadequate Risk Assessment and Management Tools.**

The journey to decarbonization presents several risks, especially for banks and other financial institutions active in the sustainable finance landscape. Relevant risks in this context include Environmental Risk, Transition Risk, Liability/Credit Risk, Reputational Risk, Market Risk, and Operational Risk (PwC, 2022). However, the need for standardized methodologies and tools for evaluating these risks can impede effective risk assessment and management in investment portfolios and financial products.

In Nigeria like many others, the absence of comprehensive risk assessment and management tools significantly challenges the growth and effectiveness of sustainable finance. Financial institutions face heightened uncertainty in evaluating sustainable projects due to inadequate risk assessment tools, often leading to a potential deterrence in investment in environmentally and socially responsible initiatives (Lamperti, et al. 2018). The traditional models may not fully capture unique risks associated with sustainable finance, such as environmental and social factors. The limited availability of reliable data and standardised

methodologies further exacerbates this gap, contributing to inefficiencies and misallocating resources in the sector (Lamperti et al., 2018).

Moreover, the lack of standardized risk assessment practices undermines comparability and transparency, crucial for maintaining investor confidence and market integrity. In this regard, sustainability reporting, guided by frameworks like the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), helps identify and improve the availability of relevant sustainability-related data. This enables investors and financial institutions to make more informed decisions (La Torre & Chiappini, 2021). Furthermore, this transparency and accountability can improve data quality and completeness over time (La Torre & Chiappini, 2021).

Addressing these challenges requires innovative solutions, such as integrated impact assessment frameworks and artificial intelligence-assisted verification techniques. ESG Ratings and Scores Provided by various agencies like GRI, SASB, national bodies like SEC and CBN, these ratings could aid evaluate the ESG performance of companies and governments. They are used to assess potential risks and opportunities in investment portfolios. Also, Scenario Analysis helps assess the impacts of various environmental and social scenarios on investment portfolios. It's useful in understanding long-term risks and opportunities in a changing world.

The Impact AESSURANCE rating model, for instance, offers a promising solution to scale up sustainable finance by addressing the credibility deficits and narrow focus of current decision-support tools (DSTs), along with their time-horizon limitations (Quatrini, 2021). Adopting these innovations can markedly improve the sector's ability to precisely measure and mitigate risks, which in turn boosts its resilience and long-term sustainability. To bridge this gap, it's essential to undertake collaborative efforts to develop and implement bespoke risk assessment frameworks, improve the availability and quality of data, promote capacity building, and cultivate a regulatory environment that supports and encourages sustainable finance practices.

#### **2.6.4.1. The role of the CBN in the supervision and management of transition and physical risks (climate-related systemic risks).**

Banks are required to integrate environmental and social risk management into their operations, with annual reporting on their adherence to the NSBP. The CBN collaborates with banks and other regulators to ensure the principles are applied and adhered to. While the NSBP includes a framework for monitoring and reporting, it does not explicitly mention a sanction regime or fines for non-compliance. The focus is on collaborative progress and adherence to international standards.

The monitoring of the Nigerian Sustainability Banking Principles involves several mechanisms and agencies. The Central Bank of Nigeria (CBN) plays a significant role in this process. It collaborates with other stakeholders to ensure that banks adhere to these principles. The CBN has the authority to supervise and regulate the activities of banks to ensure they meet their climate change and sustainability obligations.

The CBN does not have the authority per se to impose, used to assessing fines and sanctions on banks that fail to comply with the sustainability of banking principles. The fines and penalties are part of the broader Climate Change Fund, which collects funds from various sources, including fines from entities that do not comply with climate change obligations.

Specifically, the Climate Change Act 2021 states:

Private entities that fail to meet their targets are liable to fines determined by the Council, focusing on the environmental economic accounting system considering health impacts, climate variations, and total ecosystem damage. Fines and charges from private and public entities for failing their climate change mitigation and adaptation obligations are directed to the Climate Change Fund (Section 15 (d) Climate Change Act 202).

The Council established under the Climate Change Act has the authority to supervise and ensure compliance with the regulations, including imposing penalties for non-compliance. The effectiveness of the CBN's role in monitoring these principles is reinforced by its inclusion in the National Council on Climate Change, which is responsible for making policies and decisions regarding climate change in Nigeria. The involvement of multiple stakeholders, including the CBN, ensures a coordinated approach to monitoring and enforcing compliance with the sustainability banking principles.

#### **2.6.4.2. Contrasting to European Banking Authority and European Central Bank (EBA & ECB).**

On the contrary, the European Banking Authority (EBA) has been given several mandates to assess how environmental, social, and governance (ESG) risks can be incorporated into the three pillars of prudential supervision (Article 87a(5) of Directive 2013/36/EU). This includes evaluating the integration of climate-related and environmental risks into regulatory and supervisory frameworks. The EBA has published an Action Plan on sustainable finance and a Discussion Paper on integrating ESG risks into these frameworks. The guide outlines the EBA's expectations for the prudent management of these risks under the current prudential framework, aiming to redirect financial flows to sustainable investments, mainstream sustainability in risk management, and enhance transparency and long-term.

The EBA Guidelines state that the management body's responsibilities include setting, approving, and overseeing the implementation of the overall business strategy, key policies, and risk strategy. This includes ensuring adequate internal governance and internal control framework. Given the impact of climate-related and environmental risks, the management body plays a key role in its supervisory and management functions. The management body is expected to explicitly allocate roles and responsibilities for climate-related and environmental risks to its members and/or sub-committees, ensuring that reporting lines and the allocation of responsibilities are clear, well-defined, coherent, enforceable, and duly documented (European Banking Authority 2024).

Institutions must incorporate climate-related and environmental risks into their risk management frameworks as drivers of existing risk categories. This involves managing, monitoring, and mitigating these risks over a long-term horizon and regularly reviewing their arrangements. Institutions should establish regular and transparent reporting mechanisms so that the management body, risk committee, and all relevant units receive timely, accurate, and meaningful reports. The ECB expects institutions to integrate these risks into their data reporting frameworks to inform decision-making at the management level. This is part of the EBA's effort to ensure institutions can identify, measure, monitor, manage, and properly report these risks. The ECB's guide describes expectations for how institutions should manage and disclose climate-related and environmental risks. This includes embedding these risks into business strategies and risk management frameworks. Institutions are encouraged to engage in constructive dialogue with critical counterparties to improve their sustainability ratings and resilience to transition and physical risks. The guide emphasizes the need for institutions to adjust their risk policies and establish internal limits consistent with their risk appetite, operational soundness, financial strength, and strategic goals.

The EBA is crucial in integrating climate-related and environmental risks into financial institutions' regulatory and supervisory frameworks. This involves setting clear guidelines for management responsibilities, ensuring the integration of these risks into risk management frameworks, and promoting transparency and long-term sustainability in financial practices (European Central Bank, 2020)

In terms of specific approaches, the EBA's guidelines outline several key methodologies:

- **Exposure-Based Methodologies:** Institutions are required to assess the exposure of their counterparties' activities and key assets to ESG factors. This includes evaluating the geographical location of assets, the degree of vulnerability to environmental hazards, and the dependency on fossil fuels. Institutions should also incorporate ESG factors into their internal risk classification procedures and credit risk assessments.
- **Portfolio-Based Methodologies:** Institutions are required to use portfolio alignment methodologies to assess the alignment of their portfolios with climate-related sustainability targets. This involves measuring the potential gap between existing portfolios and benchmark scenarios consistent with climate targets, such as achieving net-zero greenhouse gas emissions by 2050. Large institutions should apply these methodologies to specific sectoral portfolios, such as power, automotive, and cement production.
- **Scenario-Based Methodologies:** Institutions are required to perform scenario-based analyses to assess their sensitivities to ESG risks across different time horizons. These analyses should include both short-term and long-term perspectives and consider the potential impacts of environmental and social changes on the institution's business environment.

The EBA also emphasizes the importance of data processes and engagement with counterparties. Institutions are required to collect and aggregate ESG risk-related data, ensure the quality of this data, and engage with

clients and counterparties to gather relevant ESG-related information. This includes using specific questionnaires during credit origination and periodic reviews to capture the ESG risk profiles of counterparties (European Banking Authority 2024).

### **2.6.5 Limited Access to Green Financing and Underdeveloped Green Bond Market.**

Businesses and projects often encounter barriers to accessing green financing, including high transaction costs, regulatory challenges, perceived risks, and a lack of specialized expertise. These constraints contribute to the limited development of the green bond market, which lacks supportive infrastructure to stimulate growth.

Limited access to green financing and an underdeveloped green bond market in Nigeria present substantial impediments to the country's sustainable finance endeavors (Feng, 2022; Magomedova, 2023; Rajhans, 2023; Zhuang, Jiao, & Chen, 2023). These deficiencies significantly hinder Nigeria's capacity to effectively address pressing environmental concerns and meet its sustainable development goals. Green financing, which channels investments into environmentally beneficial projects, remains constrained due to several interrelated factors.

A significant hurdle arises from the absence of clear regulatory frameworks governing green financing activities, as highlighted by Feng (2022). The lack of robust regulations fails to provide adequate incentives and guidance for investments in sustainable projects, leaving both investors and businesses uncertain and vulnerable to risks. Furthermore, Feng (2022) sheds light on a concerning aspect of the green finance landscape: the prevalence of greenwashing within the green bond market. This practice, fuelled by information asymmetry, undermines the integrity of green investments and presents a substantial obstacle to the healthy development of the green financial market.

Establishing transparent guidelines defining green projects and disclosure requirements for bond issuers is imperative to foster accountability and trust within the market (Magomedova, 2023). However, the absence of such frameworks creates barriers for potential investors and limits the availability of projects seeking green financing. Yet, Nigeria's issuance of green bonds remains constrained by the lack of standardized guidelines and certification mechanisms for green projects (Magomedova, 2023). Without clear project eligibility and credibility criteria, potential issuers are reluctant to enter the market, and investors hesitate to participate.

Moreover, the green bond market in Nigeria is still in its early stages and is not fully utilized, which compounds the challenge of limited access to green financing (Rajhans, 2023). Green bonds, designed specifically to fund environmentally friendly projects, are essential for channelling capital towards sustainability initiatives. Sustainable finance is a dynamic field characterized by a range of opportunities and obstacles. Rajhans (2023) highlights the increasing popularity of green bonds in emerging economies as a promising development. Previously, these economies heavily relied on bank loans, but they are now

embracing green bonds due to their alignment with environmental and social objectives. This shift not only attracts international investors interested in socially responsible investments but also stimulates the growth of local bond markets, offering an alternative to traditional banking mechanisms.

Compounding these challenges is the dearth of expertise and awareness among financial institutions regarding green finance (Zhuang, Jiao, & Chen, 2023). Many institutions cannot effectively evaluate and finance green projects, restricting access to green financing options. Enhancing the capacity of financial institutions and augmenting their expertise in assessing sustainable projects are essential steps towards broadening the availability of green financing in Nigeria.

Addressing these gaps necessitates concerted efforts from various stakeholders. Policymakers must prioritize the establishment of clear and robust regulatory frameworks that incentivize green investments and ensure transparency in the market (Feng, 2022). Financial institutions must invest in capacity building and expertise development to evaluate better and finance green projects (Zhuang, Jiao, & Chen, 2023). Additionally, initiatives to raise awareness among investors and businesses about the benefits and mechanics of green finance are crucial for stimulating demand and participation in the market (Rajhans, 2023).

### **2.6.6 Limited Integration of Indigenous Knowledge and Practices.**

Despite its significance to resource management and community resilience, sustainable finance models may not sufficiently integrate indigenous knowledge and traditional practices.

Despite their clear significance in resource management and community resilience, the literature highlights a worrisome pattern of insufficient incorporation of indigenous knowledge and practices into sustainable finance frameworks.

The study by Slikkerveer (2019) emphasizes the crucial significance of indigenous knowledge systems (IKS) in promoting sustainable development. This is mostly due to their ability to comprehend local viewpoints and facilitate bottom-up strategies. Nevertheless, even if the breakthrough in the 1980s acknowledging the significance of IKS for sustainable development has been well-documented, there is still a notable deficiency in successfully integrating these insights into conventional sustainable finance models.

It is essential to highlight the unexplored capacity of indigenous knowledge as a vital asset for advancing sustainable development, especially in Africa (Onwuegbuzie et al., 2022). Although African capitalism has been acknowledged for its promise, its implementation into sustainable finance systems is still lacking. This negligence hurts the ability of local communities to become stronger and preserve cultural assets. It also weakens attempts to promote environmentally sustainable practices.

As *The Comparing and Supporting Endogenous Development* (2019) highlights, the COMPAS Program emphasizes the significance of cultivating knowledge communities and encouraging intercultural communication to achieve sustainable development. Nevertheless, the inadequate incorporation of indigenous knowledge into financial frameworks neglects to take advantage of these valuable insights, thus sustaining a gap between finance and community-led development projects.

To tackle this problem, it is crucial to prioritize incorporating indigenous knowledge and practices within sustainable financial frameworks. This involves acknowledging the inherent worth of Indigenous viewpoints in influencing financial decision-making procedures and promoting community resilience. African capitalism, which prioritizes development led by the private sector and the active involvement of African enterprises, offers a hopeful approach to narrowing this disparity, especially in nations like Nigeria.

Nigeria may achieve sustainable socio-economic development and decarbonization by adopting the ideas of Africapitalism and incorporating indigenous knowledge into financial plans. This approach will allow the country to leverage local skills and wisdom. This strategy not only strengthens and gives authority to local communities but also promotes the preservation of culture and the responsible management of the environment. Additionally, Africapitalism's emphasis on ethical investing practices aligns with the development of socially responsible finance, increasing its capacity to stimulate positive transformations in sustainable finance practices.

Ultimately, the failure to incorporate indigenous knowledge and practices into sustainable financial frameworks signifies a lost chance to advance inclusive and comprehensive development. By giving utmost importance to incorporating Indigenous viewpoints and utilizing the concepts of Africapitalism, nations such as Nigeria can fully tap into the inherent capabilities of Indigenous knowledge to promote sustainable development and enhance resilience at the local level.

Ultimately, the existing guidelines and frameworks in the regulatory environment for sustainable finance in Nigeria lack clarity, consistency, and enforcement mechanisms, hindering access to green financing and risk management tools. Moreover, the underdeveloped green bond market and limited awareness are also part of these challenges. Bridging these gaps requires collaborative efforts to enhance transparency and capacity building among regulators, policymakers, financial institutions, and other stakeholders. This unified approach will nurture a more resilient regulatory framework, driving sustainable economic development.

## **2.7 Recent Developments in Low-Carbon Investment in Nigeria**

Nigeria has experienced a significant increase in low-carbon investment initiatives in recent years, indicating a rising dedication to sustainable development. Primary efforts involve strengthening the infrastructure for renewable energy, including renewable energy sources projects, to increase the range of energy sources and reduce dependence on fossil fuels. The transportation sector is experiencing a transition towards environmentally friendly forms of transportation, such as electrically powered cars and public transit systems fueled by renewable energy sources. This move is intended to reduce emissions. Moreover, there is a growing emphasis on improving energy efficiency in many sectors and structures by implementing retrofitting measures and adopting efficient technology.

Nigeria is looking into the possibilities in carbon markets and climate finance systems and promoting collaborations between the public and private sectors to expedite sustainable infrastructure projects. Enacting



advantageous rules and regulations and investing in capacity building and technology transfer are crucial for attracting investment and promoting local innovation. These advancements emphasize Nigeria's commitment to promoting a greener and more sustainable future, which also aims to tackle urgent climate issues.

### **2.7.1 Key Trends and Growth Areas in Low-Carbon Investment in Nigeria.**

#### **-Renewable Energy.**

Nigeria's renewable energy sector is experiencing a great increase in investment because the country aims for decarbonization, driven by a combination of favorable natural conditions and government support initiatives. According to recent studies, Nigeria boasts abundant natural resources suitable for renewable energy projects, particularly solar, wind, biomass, and hydroelectric power. For instance, Isah et al. (2023) highlight solar energy as promising due to its year-round availability in the country.

The Renewable Energy Roadmap for Nigeria presents ambitious goals and strategies for augmenting the proportion of renewable energy in the nation's energy composition. The strategy intends to utilize Nigeria's enormous solar resources to fulfill a substantial amount of the country's energy needs from renewable sources by 2030 and beyond (IRENA 2023).

Government support is crucial to the growth of renewable energy in Nigeria. Regulatory bodies such as the Rural Electrification Agency (REA) and the Nigerian Electricity Regulatory Commission (NERC) oversee compliance and facilitate the implementation of renewable energy projects (Isah et al., 2023). Additionally, frameworks like the Nigerian Renewable Energy and Energy Efficiency Policy (NEP) provide guidance and direction for stakeholders involved in the sector, streamlining processes and promoting efficient development (Isah et al., 2023).

Financial incentives further incentivize investment in renewable energy projects in Nigeria. Feed-in Tariffs (FITs), tax exemptions, and the establishment of the Renewable Energy Fund (REF) and the Nigerian Electricity Market Stabilization Facility (NEMSF) provide financial support and assistance to renewable energy projects, contributing to the stability of the electricity market (Isah et al., 2023).

Moving beyond laws and policies to action, the Nigerian government has introduced incentives to encourage the use of renewable energy, such as the VAT Modification Order of 2020, exempting renewable energy equipment from VAT. The Solar Power Naija initiative aims to provide solar home systems to 5 million off-grid households under the Nigerian Economic Sustainability Plan, facilitated by the Central Bank of Nigeria with a fund of NGN 140 billion (approximately \$340 million). Multilateral agencies like the World Bank and the African Development Bank collaborate with the Rural Electrification Agency to support Nigeria's electrification program, with commitments totaling \$340 million and approximately \$148 million, respectively (Okeke, C. 2023).

Research findings also stress the positive correlation between renewable energy consumption and economic growth in Nigeria. Umeji et al. (2023) highlight the importance of effective public policies in fostering this relationship. The implementation of renewable energy plans, as anticipated by Ikponmwosa

and Darlington (2021), is expected to provide sufficient solar power, wind, hydroelectricity, and solar thermal energy to match Nigeria's total grid capacity by 2025.

Despite the challenges associated with transitioning to a renewable energy future, such as meeting electricity demand under high economic growth scenarios, the Renewable Energy Roadmap emphasizes the cost-effectiveness of renewable investments compared to conventional pathways (IRENA, 2023). The roadmap underlines the need to prioritize renewable energy over fossil fuels for long-term sustainability, cost-effectiveness, price stability, and energy security (IRENA, 2023).

The Renewable Energy Roadmap sets specific targets, including reaching 47% of Nigeria's primary energy requirements and 52% of final energy consumption from renewable sources by 2030. By 2050, these targets increase to 57% and 59%, respectively (IRENA, 2023). In terms of financial implications, the roadmap suggests that the total investment required for the Sustainable Energy Scenario (TES) is estimated at USD 1.22 trillion (2010), slightly lower than the planned energy scenario (PES) at USD 1.24 trillion (2010). This translates to an average annual investment value of USD 35 billion USD (2010) per year for the TES, compared to USD 36 billion USD (2010) per year for the PES (IRENA, 2023).

In conclusion, Nigeria's increasing investment in renewable energy sources, particularly solar, wind, and hydroelectric power, reflects a strategic shift towards sustainable energy solutions. Government support, combined with favorable natural conditions and ambitious targets outlined in the Renewable Energy Roadmap, positions Nigeria to capitalize on its renewable energy potential, fostering economic growth, energy security, and environmental sustainability.

### **-Energy Efficiency.**

Improving energy efficiency is a critical priority for Nigeria as it endeavors to meet its sustainable development goals while addressing energy security concerns and mitigating environmental impacts. Integrating energy-efficient technologies across various sectors offers significant opportunities for reducing energy consumption, enhancing productivity, and driving economic growth. Key investment opportunities exist in initiatives such as building retrofits and industrial process optimization, which promise substantial energy savings and emissions reductions.

In building infrastructure, retrofitting projects hold immense potential for driving energy efficiency gains. With potential energy savings ranging from 20% to an impressive 40%, these projects represent a tangible pathway toward reducing energy consumption and lowering carbon emissions. Adopting comprehensive system analyses, user training, and life-cycle-driven perspectives is crucial for maximizing the returns on investment in building retrofits ("World Energy Council," 2013). Furthermore, initiatives like the SUNREF program, with its \$81 million technical assistance facility, provide vital support for implementing energy-efficient upgrades in buildings across Nigeria (Naija247News 2020).

Similarly, industrial sectors present significant opportunities for energy efficiency improvements through energy management and process optimization initiatives. With potential efficiency gains of at least

5%, measures such as co-generation, process heat optimization, and waste heat recovery offer tangible pathways toward reducing energy consumption and enhancing overall productivity ("World Energy Council," 2013). Integrating energy-efficient technologies in industries not only aligns with sustainability objectives but also presents compelling economic incentives, driving down operational costs and bolstering competitiveness in the global market.

Investment in energy efficiency initiatives is crucial for unlocking the full potential of these technologies in Nigeria. The SUNREF program, backed by partnerships with organizations like the French Development Agency and the European Union Infrastructure Trust Fund, represents a significant commitment towards fostering green energy projects in the country. With an emphasis on renewable energy and energy efficiency projects, SUNREF aligns closely with Nigeria's goal of generating 30% of 30 gigawatts from renewable sources by 2030 (Naija247News 2020).

Despite the evident benefits of energy efficiency investments, barriers to widespread adoption persist. Challenges such as high upfront costs, lengthy payback periods, and limited awareness hinder the uptake of energy-efficient technologies. Overcoming these obstacles requires targeted policies, financial incentives, and capacity-building efforts to enhance awareness and facilitate technology transfer across sectors. Likewise, Integrating the so-called "5Ds" (Decarbonisation, Digitalisation, Decentralisation, Disruption, and Diversification) into energy efficiency strategies addresses barriers like high costs, lack of awareness, and slow technology transfer. This integrated approach ensures energy efficiency is not only a standalone measure but a vital part of a comprehensive energy transition, fostering a dynamic, interconnected system for sustainable energy solutions (World Energy Issues Monitor 2024)

### **-Sustainable Mobility.**

The transportation sector is a major contributor to global carbon emissions, including in Nigeria. As the world grapples with the urgent need to address climate change, investment in sustainable mobility emerges as a crucial pathway towards mitigating the environmental impact of transportation.

Investment in sustainable mobility encompasses many initiatives, from adopting electric vehicles (EVs) to developing charging infrastructure and promoting public transportation systems powered by renewable energy sources. These efforts hold promising opportunities for reducing carbon emissions and transitioning towards a more environmentally friendly transportation ecosystem. Nigeria's Energy Transition Plan exemplifies this commitment, with targets for 10% biofuel blends by 2030 and complete EV adoption by 2060 (Ajala, 2023). However, despite these ambitions, challenges persist, including the high contribution of the transportation sector to Nigeria's overall carbon emissions, which stood at 24% in 2018, with 11.8 million vehicles on the road (Ajala, 2023).

Recent initiatives in Nigeria, particularly in Lagos, demonstrate progress towards sustainable mobility. The International Finance Corporation's (IFC) investment of \$50 million in local currency for

sustainable transportation in Lagos reflects a significant step towards addressing congestion and pollution in the city (Wansi, B. 2022).

With its population of 20 million, Lagos faces severe challenges due to congestion, with 222 vehicles per kilometer of road exacerbating pollution and slow travel times. The IFC's funding aims to alleviate these issues by developing a sustainable urban transport system, targeting rehabilitating two transport lines to benefit approximately 150,000 passengers daily.

The implications of such investments are multifaceted. On one hand, they offer tangible solutions to pressing environmental concerns, such as air pollution and carbon emissions. By promoting the adoption of EVs and investing in charging infrastructure, Nigeria can significantly reduce its carbon footprint and contribute to global efforts to combat climate change. Moreover, initiatives like Lagos' decarbonization plan signal a commitment to sustainable development and urban planning, aligning with broader sustainability goals (Oyebode O. J. 2022).

However, challenges persist in realizing the full potential of sustainable mobility. Infrastructure limitations, financial constraints, and policy barriers hinder the widespread adoption of EVs and renewable energy-powered transportation systems. Additionally, societal attitudes and consumer preferences play a crucial role in shaping the success of these initiatives. Education and awareness campaigns are essential to shift perceptions towards more sustainable modes of transportation and encourage behavioral change among the populace as other bodies, including the state government, are recognizing the need to invest in sustainable mobility as in the case of Borno, and Zamfara states in the Northern part of the country where 107 electric vehicles were launched and the increase in the state budget to demonstrate decarbonization goal (Innovation village 2023; Akanmu, A. A., & Salisu, U. O 2022).

And so, sustainable mobility represents a critical pathway toward addressing the environmental challenges the transportation sector poses. In Nigeria, recent investments and initiatives demonstrate a growing recognition of the importance of transitioning towards cleaner and more effective transportation systems. However, concerted efforts are needed to overcome existing barriers and realize the full potential of sustainable mobility in achieving climate action and sustainability goals.

#### **-Carbon Pricing and Trading.**

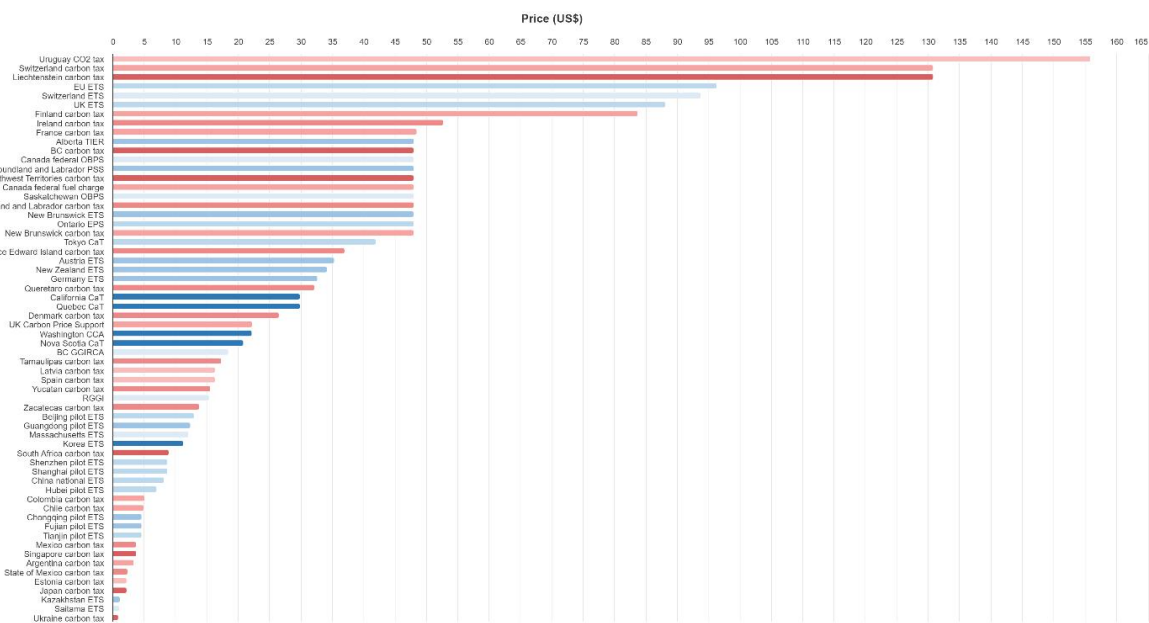
Nigeria is exploring carbon pricing mechanisms and emissions trading schemes to incentivize emission reductions, especially in the energy and AFOLU sectors as they were considered the key emitting sectors in Nigeria, as shown by the NDC revision of July. These two sectors constitute more than 80% of the total emissions in the country. Following a thorough analysis and stakeholder engagement, carbon tax emerges as the immediate promising approach, while the Emission Trading Scheme (ETS) holds potential in the long term. Implementing an economy-wide tax and adjusting flare penalties to the carbon tax are recommended instruments for the government's consideration in the short term (Assessment of Carbon Pricing Initiatives in Nigeria 2023).

Economists widely recognize carbon pricing as a strategic tool for addressing the pressing issue of carbon emissions. Adopting a carbon pricing mechanism integrates the societal costs linked to carbon-intensive activities and fosters a transition to less carbon-intensive alternatives. The effectiveness of this approach is evident in systems like the European Emissions Trading System and carbon taxes implemented in countries such as Sweden.

The country aims to align national emissions planning with international mechanisms such as the Emissions Trading Scheme (ETS). This initiative, led by the Federal Ministry of Environment with collaboration from the Federal Ministry of Trade & Industries, seeks to establish the Nigeria Emission Trading Scheme. With estimated annual CO<sub>2</sub>e emissions exceeding 250 metric tons valued at over 3 billion USD, Nigeria aims to develop a scheme aligned with global benchmarks to trigger commercial transactions and generate jobs while meeting national emission reduction goals.

To enhance its proficiency in carbon markets, the Nigerian government, with the support of the National Council on Climate Change, the United Nations Framework Convention on Climate Change (UNFCCC), and the African Development Bank (AfDB), was highly involved in advocacy and workshops to educate the various stakeholders.

At the heart of this policy lies the "polluters pay principle," which ensures accountability for the environmental impacts of pollution. Carbon pricing and trading not only facilitates the critical goal of limiting global temperature rise to 2°C, but also mobilizes financial resources from both public and private sectors to address climate change.



## World Bank: Price of Carbon around the World 1991-2023

### -Climate Resilience Infrastructure.

Investing in climate-resilient infrastructure such as flood defenses, water management systems, and sustainable agriculture practices is essential to mitigate the impacts of climate change. Public and private investment in adaptation measures is growing in the country. Climatic-resilient infrastructure, as outlined by the OECD in 2018, refers to strategically planned, designed, constructed, and managed to anticipate, prepare for, and adjust to shifting climate patterns. It is also capable of enduring, adjusting to, and swiftly recovering from disruptions caused by climate change. The concept of climate resilience is an ongoing process that spans the entire infrastructure lifecycle. Efforts to enhance climate resilience can complement endeavors to construct infrastructures resistant to natural disasters, with both sets of measures reinforcing each other.

In 2021, the World Bank announced the project of \$700 million credit Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) for climate-resilient infrastructure in Nigeria. The objective is to enhance sustainable landscape management methods in the country's northern region, where crop yield is decreasing, and water constraints are worsening due to climate change. Recognizing the nexus between water scarcity, droughts, and food security, the project targets multi-sectoral watershed planning and investments to benefit approximately 3.4 million direct beneficiaries.

It seeks to enhance adaptive capacity and strengthen climate resilience through components like Dryland Management and Community Climate Resilience, particularly in dry, semi-arid, and dry sub-humid regions. By promoting inclusivity and integrating vulnerable groups, ACReSAL aims to mitigate land degradation, enhance livelihoods, and lessen vulnerability to climate risks in northern Nigeria (World Bank 2021).

Over \$900 million was allocated to the Nigeria Erosion and Watershed Project (NEWMAP), benefiting over 12 million people and reinforcing the country's resilience against climate-induced erosion and disasters. This initiative created 52,000 jobs and fostered community participation in 23 states. NEWMAP focused on restoring 90 gully sites, constructing 60 catchments, and implementing warning systems, stormwater diversion plans, and solid waste management improvements. Climate-smart agricultural innovations and green bond financing for 'green investments' were rolled out. Public and private investment in climate-resilient infrastructure like flood defences and sustainable agriculture practices is growing to mitigate climate change impacts.

### **2.7.2 Banking Sector Involvement and Initiatives.**

Individual acts alone will not be sufficient to reverse the tide of climate change and decarbonize diverse industries by reducing greenhouse gas emissions.

Companies and corporate organizations around the world account for the bulk of industrial greenhouse gas emissions, so these institutions must do their share to create a cleaner, healthier planet.

This makes it obvious that while individual activities such as recycling and decreasing plastic use are undoubtedly the most important step, the world cannot make the significant progress needed toward the goals of the Paris Agreement if businesses do defensively try to reduce their environmental effect.

For this reason, banks in Nigeria are working to do just that. As one of Nigeria's largest financial institutions, Access Bank is actively involved in environmental sustainability initiatives, which align with its commitment to combating climate change and lowering its carbon footprint. The Paper-to-Pencil program, for example, recycles paper goods into pencils, benefiting thousands of students while reducing trash. The bank also prioritizes sustainable waste management throughout its branches, recycling paper, plastic, glass, and aluminium cans, and educates employees on these practices. Access Bank partners with organizations such as the FABI Foundation to upcycle spent tyres from their fleet into reusable furniture, thereby reducing environmental impact. These efforts highlight the bank's role in fostering environmentally responsible practices within the financial sector, contributing to broader environmental preservation objectives (Lewis, A. 2021).

In the same vein First Bank of Nigeria Limited, a leading banking institution, just like many other banks inspires environmental sustainability through various projects, including notable collaborations with the Nigerian Conservation Foundation (NCF). This collaboration focuses on afforestation and environmental education, with tree planting taking place at locations like the Lagos State Civil Service Model College Igbogbo in Ikorodu and Evboesi Mixed Secondary School in Benin City.

Over 1,000 environmental sustainability champions have been recruited to look after these trees and involve youth in conservation initiatives. Recognizing the effects of climate change, the bank has implemented initiatives to reduce its environmental imprint, such as carbon offsetting and biodiversity conservation. Its Environmental, Social, and Governance Management System promotes responsible lending by including environmental and social considerations in decision-making. First Bank demonstrates constant improvement and automation (Agada J. 2021).

Nigeria's Zenith Bank is also a prime example of the banking sector's proactive role in encouraging low-carbon developments in the country. Zenith Bank has launched several programs to lessen its carbon footprint and increase energy efficiency throughout its operations as part of its commitment to environmental sustainability. To reduce emissions, the bank is implementing energy-efficient air conditioning units and gas-powered generators instead of diesel-powered ones and renovating its buildings with energy-saving LED lighting. Zenith Bank is also leading the way in the shift to low-emission cars and is dedicated to utilizing cutting-edge, environmentally friendly technologies in its banking operations. In addition to demonstrating Zenith Bank's commitment to sustainable practices, these initiatives set the bar for other Nigerian institutions and pushed the industry toward more environmentally friendly investments and operations. Aligning with global environmental goals and improving the sustainability of the Nigerian economy requires this change (Bello, O. 2020).

Moreover, GT Bank's dedication to environmental sustainability is demonstrated by its broad participation in a variety of local and impactful programs around Nigeria. One noteworthy project, Waste to Play, was carried out in collaboration with the Ibadan-based group PP40. This effort converted waste

materials into playgrounds for Lagos' public primary schools while teaching over 500 students important innovative abilities. GT Bank has financed various conservation projects with the Nigerian Conservation Foundation, including the Taraba Participatory Forest Management and Edo Biodiversity Action Plan. These initiatives are critical to ensuring sustainable land use and biodiversity conservation.

In addition, the Waste2Style Initiative at Abuja's Kuchingoro IDP Camp empowers displaced women by teaching them how to make items out of waste, supporting economic independence (GT bank website). The growth of the Nigerian financial system is critical for financing clean initiatives aimed at reducing CO2 emissions and promoting decarbonization and environmental sustainability. It is expected that this expansion will improve the ability to fund activities to clean up the environment by making it easier to obtain financing for sustainable projects.

Furthermore, effective monitoring and regulation of income-generating activities that pollute the environment, such as deforestation for charcoal manufacturing and widespread bush burning, are required. These methods are critical for reducing environmental impact and furthering sustainability goals (Musa, K. S., et al 2021). Hence, despite the banking sector's role in ensuring decarbonization, more efforts are needed to achieve the goal.

### **Comparison Table of Sustainability Initiatives**

<b>Banks</b>	<b>Green Financial Policies</b>	<b>Environmental risk management</b>	<b>Climate related disclosure</b>	<b>Sustainable finance practice</b>	<b>Environmental impact assessment</b>
Access Bank	Yes, active involvement in green bonds, including the first CBI-Certified Corporate Green Bond in Africa	Yes, compulsory E&S risk assessments for all loans	Yes, annual Green Bond Impact Report	Yes, funds allocated to renewable energy, sustainable mobility, and flood defense	Yes, detailed sustainability reports published annually



Zenith Bank	Yes, integrates sustainability in credit and investment decisions, complies with NSBP and international frameworks	Yes, E&S risk considerations embedded in policy, 91.7% portfolios screened	Yes, sustainability reports align with GRI Standards and SDGs	Yes, sustainability reports align with GRI Standards and SDGs	Yes, standalone sustainability reports published annually.
First Bank	Yes, initiatives aimed at environmental sustainability and energy conservation	Yes, ESG Risk Management System in place	Yes, CR&S reports using GRI guidelines, participant in UNGC	Yes, supports NSBP and sensitive sector initiatives	Yes, adheres to GRI, UNGC, and NSBP standards in reports
GT Bank	Yes, engaged in programs like Waste to Play and conservation projects	Yes, focuses on sustainable land use and biodiversity conservation	Yes, detailed reporting on environmental and social impacts	Yes, supports economic independence and sustainable practices	Yes, reports on initiatives and impacts in sustainability documents

**Source:** Access Bank 2022 Sustainability Report, Zenith Bank 2021 Sustainability Report, FBN Holdings Plc 2022 Sustainability Report, and GT Bank Website.

### 2.7.3. Nigerian Banks- Netzero Banking Alliance.

The Net-Zero Banking Alliance (NZBA) is a group of banks that have committed to aligning their lending and investment portfolios with net-zero emissions by 2050. As of the latest updates, the alliance has grown significantly in participation.

The Net-Zero Banking Alliance (NZBA) has seen a significant number of banks from various regions across the globe commit to aligning their lending and investment portfolios with net-zero emissions by 2050. As of the most recent, over 140 banks have joined the NZBA. This includes major banks from Europe, North America, Asia Pacific, Latin America & Caribbean, and Africa & Middle East.

Nigerian banks, unlike many other banks across the globe, have not yet joined the NZBA as members, despite the trends and need for all stakeholders including financial institutions in fighting against climate change. However, at the National level, the banking sector in Nigeria plays a crucial role. While committed to the mission and values same as NZBA, banks in the country face challenges in setting and achieving stringent climate targets. The effectiveness of the commitments among Nigerian banks is questioned due to their relatively nascent engagement with climate-aligned finance. Although there is increasing awareness and participation in climate initiatives, the practical implementation and measurable impact of these commitments remain limited.

The enforcement and monitoring mechanisms in Nigeria are less rigorous compared to those in the EU, leading to slower progress in achieving net-zero targets. The local economic and industrial landscape, heavily reliant on fossil fuels, poses additional hurdles for Nigerian banks in transitioning to green finance.

EU banks, by contrast, have a more structured and rigorous approach to their NZBA commitments. Despite this, the actual impact of these commitments has been mixed. Research indicates that EU banks involved in NZBA have not significantly altered their lending practices to align with climate goals, leading to scepticism about the overall effectiveness of the NZBA framework (Sastry, P., et al. 2021).

EU banks have substantial assets and infrastructure to support climate-aligned initiatives, yet their lending practices remain largely unchanged. There is a noted discrepancy between stated commitments and actual lending behaviour, with many NZBA banks still financing high-emission sectors. The evidence suggests that voluntary climate commitments have not yet translated into significant reductions in financed emissions or meaningful engagement with green sectors.

While both Nigerian and EU banks face challenges in implementing climate commitments, the nature and scale of these challenges differ significantly. Nigerian banks struggle more with regulatory and economic barriers, whereas EU banks face scrutiny over the disparity between their commitments and actual practices. Both regions show that the effectiveness of NZBA commitments is currently limited and requires stronger enforcement and alignment with practical lending practices to achieve meaningful progress.

Hence, the study finds "no evidence" that banks have stopped lending to high-emission sectors or increased financing for renewable projects. The researchers argue that engagement with high-polluting borrowers has not led to reduced emissions or increased decarbonization targets. The study, based on unique ECB data, concludes that net zero commitments have not resulted in meaningful changes in bank behaviour, highlighting the limited impact of voluntary climate initiatives without supportive policies (Sastry,P., et al. 2021).

## NZBA Sectoral commitments and the climate scenarios used.

Serial Number	Sectors	Number of banks committed.	Climate Scenarios Used	Additional Details
1	Aluminum	3	NZE2050, NGFS NZ2050, ISFNZ	14 banks have measured their emissions footprint
2	Cement	11	NZE2050, NGFS NZ2050, ISFNZ	21 banks have measured their emissions footprint
3	Coal	8	Various credible science-based climate scenarios	55 banks have either a policy in place on coal financing and/or have set an emissions reduction target
4	Commercial & Residential Real Estate	23	IEA NZE2050, B2DS, NGFS NZ2050	41 banks have measured their emissions footprint
5	Iron & Steel	11	Various credible science-based climate scenarios	22 banks have measured their emissions footprint
6	Oil & Gas	31	IEA NZE2050	42 banks have measured their emissions footprint

7	Power Generation	45	IEA NZE2050	48 banks have measured their emissions footprint
8	Transportation/Mobility	24	IEA NZE2050	31 banks have measured their emissions footprint
9	Agriculture	Less than 12	Various credible science-based climate scenarios	Specific number not disclosed

**Source: Net Zero Banking Alliance 2022 Progress Report.**

- Over 90% of the banks have focused on high-emitting and hard-to-abate sectors such as coal, oil, and gas.
- Many banks are using scenarios that limit warming to 1.7°C, which is less ambitious than the Alliance's target of 1.5°C.

## **2.8 Green Bond Market in Nigeria.**

In December 2017, Nigeria significantly strived towards its environmental goals by issuing its inaugural sovereign green bond. This issuance, certified against the Climate Bonds Standards and Certification Scheme, marked a pivotal moment for the country. The 5-year, 10.69-billion-naira green bond, supported internationally by entities like the World Bank, UNEP, and Climate Bonds Initiative, was a collaborative effort involving the Federal Ministry of Finance, the Federal Ministry of Environment, and key financial advisors from Nigeria's capital market. The funds raised were directed towards financing projects in renewable energy, specifically rooftop solar and afforestation initiatives (The Nigerian Green Bond Market Development Programme Impact Report (2018 - 2021)).

In March 2018, FMDQ Securities Exchange, Climate Bonds Initiative, and Financial Sector Deepening, Africa, established the Nigerian Green Bond Market Development Programme to support the growth of Nigeria's green bond market. Since its launch in June 2018, the program has made considerable progress in fostering the corporate green bond market through stakeholder engagement, training sessions, and capacity building. Its key components include establishing market infrastructure, developing guidelines and listing requirements, building a pool of local verifiers, cultivating green investment pipelines, and

supporting broader reforms in the debt capital markets. This initiative aims to drive sustainable finance and environmental progress in Nigeria (Nigerian Green Bond Market Development Programme Report, 2019).

In 2023, the global green bond market witnessed significant expansion, with issuance growing by 10% compared to the previous year, reaching a total value of \$575 billion. This growth was primarily driven by increased issuance from European markets, although North American issuers experienced another year of contraction. While non-financial corporates continued to dominate the green bond market, the financial services sector saw notable growth, nearly matching their volumes. Sovereign green bond issuance also experienced a remarkable year, with GSSSB issuance hitting a record \$160 billion, surpassing the previous set in 2021 at \$117 billion. Countries such as France, Germany, Italy, and the U.K. each contributed more than \$10 billion to sovereign green bond issuance in 2023. This expansion highlights the growing momentum and global commitment towards sustainable finance initiatives (S&P Global Ratings 2024).

Building on this global trend, the Nigerian green bond market saw notable developments with the introduction of two significant bonds in addition to the sovereign green bond issued earlier in 2017. Access Bank PLC made history by issuing Africa's first certified corporate green bond, raising N15.0 billion with a fixed coupon rate of 15.50% over 5 years. The proceeds were directed towards financing flood defence, agriculture project refinancing, as well as energy efficiency and renewable energy initiatives. Similarly, North South Power Company Limited, operating through NSP-SPV PowerCorp PLC, introduced an N8.5 billion 15-year 15.60% Series 1 Guaranteed Fixed Rate Senior Green Infrastructure Bond, maturing in 2034, under a N50.0 billion Debt Issuance Programme. Notably, this bond received support from the Infrastructure Credit Guarantee Company ("InfraCredit") and set a new record as the longest-tenured corporate bond in Nigeria's Debt Capital Market (DCM).

Continuing the trajectory of sustainable finance in Nigeria, 2021 witnessed yet another significant corporate green bond issuance. OneWatt Solar (OWS), a groundbreaking FinTech startup, successfully secured N3 billion as part of its N10 billion Green Bond Issuance Program. This achievement represents a significant milestone in OWS's journey, reflecting its commitment to sustainability and innovation. The issuance includes an N2 billion 7-year Green Bond Issue and an N1 billion 7-year Green Sukuk Issue, marking a precedent in various categories within the market. OWS's dedication to the UN's Sustainable Development Goals (SDGs) and the Paris Climate Agreement is evident, as it leverages its innovative business model, driven by strategic partnerships and cutting-edge technologies (Deshmukh, P. 2021). This issuance not only demonstrates OWS's leadership in sustainable finance but also reinforces Nigeria's position as a key player in the global green bond market and champion in achieving decarbonization.

It is interesting to mention that the Nigerian green bond market grew from zero to N49.19 billion (~\$120 million) within 3 years, recording four issuances and listings (Chiemeka, J. 2021). These developments underline Nigeria's commitment to sustainable finance and its growing participation in the global green bond market.

### **2.8.1 Impact and Contribution to Decarbonization.**

Green bonds have become a powerful instrument in reducing CO<sub>2</sub> emissions, showing effectiveness in both short-term and long-term plans for reducing emissions. Their influence is especially noticeable in countries experiencing increased climate threats, where the need for sustainable investment is most urgent. The effectiveness of credit markets and innovation is enhanced by their development, which in turn promotes the allocation of resources towards environmentally sustainable enterprises or bodies (Al Mamun Md et al 2022).

Out of all the different industries, green bonds designated for energy efficiency efforts have the most impact on reducing emissions. Through the provision of funding for initiatives that aim to improve energy efficiency in various sectors and infrastructure, these bonds stimulate significant changes in the way resources are used (Al Mamun Md., et al. 2022).

This results in substantial decreases in greenhouse gas emissions, which contribute to both the preservation of the environment and the ability to withstand economic challenges.

The domestication of green bonds for the Nigerian market aligns with key themes in the Economic Recovery and Growth Plan (ERGP). This strategy not only supports Nigeria's National Determined Contribution (NDC) but also reorients financial flows towards low-carbon, climate-resilient opportunities. Focusing on green investments, the issuance of green bonds marks the beginning of greening the country's budget and capital market (Ministry of Environment, Department of Climate Change 2022). This shift away from carbon-intensive activities is evident in the country's commitment to achieving its NDC targets, which entails decarbonization while addressing other national issues vis-à-vis development.

### **2.9 Carbon Credits and Offsets in the Nigerian Context.**

Carbon credits permit nations, entities, or individuals to emit a set amount of carbon dioxide. They are transferable and tradable if not fully used. Purchasing them grants permission to release equivalent emissions within legal limits. Functioning as a market-driven mechanism, they empower entities to manage greenhouse gas emissions by funding initiatives that cut or remove harmful gases. Thus, these credits are exchanged within the carbon market (Osinachi-Nwadem, S., & Adebayo, T. 2024).

Carbon markets, comprising Compliance and Voluntary Markets, enable companies and individuals to mitigate emissions and meet environmental objectives. Compliance Markets, mandated by governments, operate under emission regulations, like "cap-and-trade," ensuring validated emissions reductions. Voluntary Markets, however, function outside regulatory frameworks, facilitating carbon offset trading for non-compliance purposes. While both require third-party verification, only Compliance Markets contribute to meeting governmental emission targets, contrasting Voluntary Markets that support independent environmental commitments (Prempeh, A. B., & Boateng, E. K. 2024).

### **2.9.1 Market Overview and Potential.**

The emerging carbon market represents an essential opportunity to promote sustainable development and tackle urgent environmental issues in Nigeria. At the 27th United Nations Climate Change Conference of the Parties (COP27) in 2022, the African Carbon Markets Initiative (ACMI) was launched, aiming to boost Africa's participation in carbon credit markets and attract private investment in clean energy projects. The initiative forecasts substantial economic gains, estimating that Africa could produce three hundred million carbon credits annually by 2030, generating \$6 billion in revenue and supporting 30 million jobs. By 2050, this annual production was predicted to reach over 1.5 billion credits, supporting \$120 billion in revenue and 110 million jobs (Andersen Global. 2022).

In June 2023, Nigeria's National Climate Change Commission (NCCC) unveiled its regulatory guidance on the country's evolving carbon market approach. The strategy focuses on leveraging collaborative efforts among government agencies, financial institutions, international organizations, and the private sector to enhance climate resilience and expand opportunities in key sectors such as agriculture, forestry, and water conservation (Osinachi-Nwandem, S., & Adebayo, T. 2024).

### **2.9.2 Challenges and Opportunities for Growth.**

The carbon credit and offset market in Nigeria faces numerous challenges, but with these challenges come opportunities as far as the decarbonization journey is concerned. Challenges encompass a lack of awareness about carbon offset opportunities, complex project verification processes, financing constraints, and regulatory inconsistencies. Limited awareness among stakeholders impedes the adoption of carbon offset initiatives, while complex verification processes and financing constraints hinder project implementation. Regulatory inconsistencies create further barriers, fragmenting the market and complicating business operations (Ecostack 2023).

However, Nigeria also presents significant growth opportunities in the carbon credit and offset market. The country's rich biodiversity offers prospects for carbon offset projects like reforestation and sustainable land use practices (Braithair, Esohe 2023). Moreover, Nigeria's abundant renewable energy resources, such as solar and wind power, make it conducive for clean energy projects and carbon credits, aligning with global efforts to transition to renewable energy sources.

Innovative initiatives in Nigeria, such as Dangote Industries Limited's Waste Heat Recovery Project and Access Bank Plc's Reforestation Project, exemplify the country's potential to mitigate carbon emissions while fostering sustainable development. Dangote's project harnesses waste heat from cement kilns to generate electricity, reducing reliance on fossil fuels and cutting carbon emissions. Access Bank's Reforestation Project, "Save Wildlife," sequesters carbon dioxide, restores biodiversity and uplifts local livelihoods through community partnerships and tree planting efforts (Financial Nigeria 2020).

In addition to nature-based solutions, technological advancements like blockchain and satellite monitoring offer solutions to enhance transparency and accountability in the carbon market. Blockchain

technology ensures the credibility of offsets by providing secure records of carbon credit transactions, while satellite monitoring enables accurate measurement and verification of carbon sequestration (Murphy, Ross 2023).

Besides, the increasing emphasis on corporate social responsibility and sustainability presents significant opportunities for businesses in Nigeria to invest in carbon offset projects. Growing pressure from consumers, investors, and regulators to reduce carbon footprints drives demand for high-quality, verified carbon credits. This demand creates a lucrative market for companies engaged in emissions reductions and clean energy initiatives, fostering economic growth while advancing environmental sustainability in Nigeria.



# Chapter Three

## Research Methodology

This chapter covers the methodology section of the research study, which utilizes a qualitative approach. It begins with an overview, followed by descriptions of data collection procedures and analysis techniques. The chapter concludes by exploring the methodology's limitations and the study's reliability and validity in depth. This chapter seeks to ensure the legitimacy and reliability of the findings presented in later chapters by providing a transparent and comprehensive overview of the research process.

### 3.1. Research Design and Approach.

#### 3.1.1. Rationale for Qualitative Research.

The study assessed how the banking sector in Nigeria is/could play a role in supporting the country's journey to decarbonization by rethinking and redefining the act of deploying capital to investment that prioritizes environmental stability and low carbon emissions with the help of various bond strategies like green, and sustainability linking bonds. A qualitative approach was adopted in this study using primary data collected and available secondary data. Akomolafe B. (2023) adopted a similar methodology in similar previous research focused on Deep decarbonization pathways, strategies, governance, actors, and roadblocks in cities: Climate change mitigation perspectives from selected Sub-Saharan African Cities (Akomolafe B. 2023).

The qualitative approach is invaluable for studying complex phenomena like the role of the banking sector in Nigeria's decarbonization journey. It allows for a deep exploration of social dynamics, providing insights into organisational values, intra-sector relationships, and underlying assumptions (Mohajan, H.K. 2018). Through rich, context-specific data collection methods, such as interviews and observations, qualitative research can uncover critical incidents and offer a holistic interpretation of the processes shaping the sector's investment in low-carbon projects and bond strategies. Qualitative methodology uses the words collected from people and researchers' texts to substantiate knowledge and understand a phenomenon (Akomolafe B., 2023; Creswell & Poth, 2018).

The method studies a topic in a real-life context without interference or manipulation (Golafshani, 2003). It allows for openness to various research approaches and questions (Dogan, A. 2023). Qualitative research, grounded in social constructionism principles, is a deductive approach that seeks to develop ideas by analyzing social reality. This process entails gathering data and verifying theories, providing a comprehensive understanding of phenomena that have not been previously studied. This approach strongly emphasizes originality and deep examination, studying complex societal matters in more than quantitative study (Lahiri, S. 2023). Qualitative research is an umbrella term for the designs of theoretical perspectives (Mohajan, H.K. 2018).

Qualitative research is characterized by its non-statistical approach, emphasizing a deep understanding of the subject rather than surface-level findings (Akomolafe B., 2023; Golafshani, 2003; Johnson, 1997). It explores participants' knowledge, attitudes, behaviours, or opinions regarding a research topic (Creswell & Creswell, 2018). Drawing from interpretivism, qualitative research seeks to construct knowledge based on the unique perspectives of research participants (Akomolafe B., 2023; Creswell & Poth, 2018; Tomaszewski et al., 2020).

The qualitative method in this study, outlined in the subsequent chapter, involves synthesizing information from diverse sources such as document analysis, verifiable databases, and semi-structured interviews (Akomolafe B., 2023; Creswell & Poth, 2018). Rather than offering predictions and causal explanations, this method contextualizes the scenario and interprets the collected data.

### **3.1.2. Justification for Semi-Structured Interviews.**

Semi-structured interviews are crucial for examining the banking sector's contribution to Nigeria's decarbonization efforts due to specific and tangible factors. Firstly, they facilitate direct involvement with important stakeholders, such as financial institution officials, sustainability officers, sustainable Finance experts, academicians and other relevant stakeholders which allows for a thorough grasp of their viewpoints, expertise, and issues vis-à-vis the subject. Likewise, these interviews provide an opportunity to probe detailed subjects like risk assessment, investment criteria, and regulatory frameworks.

These topics are essential for assessing the viability and influence of low-carbon projects and bond strategies. Furthermore, they offer a chance to reveal contextual elements that influence the actions of the banking sector, such as market dynamics, stakeholder interests, and socio-political concerns. In addition, semi-structured interviews enhance transparency and accountability by motivating stakeholders to exchange thoughts and concerns, thus promoting communication and collaboration in achieving sustainable decarbonization objectives. These interviews provide a solid and effective tool for obtaining practical insights and guiding policy based on evidence to facilitate Nigeria's shift towards a low-carbon economy.

These interviews offer insights into what people do and think rather than providing a route to 'the truth'. The method can be used to show respect for participants, ensuring confidentiality, anonymity, and the right to withdraw from the research at any time. These interviews offer a conversational space for participants to dig into important issues, leading to a diverse range of shared experiences. By respecting participants and valuing their opinions, semi-structured interviews can uncover various perspectives on a topic, showcasing differences in opinions and experiences among individuals ( Longhurst, R. 2009). Semi-structured interviews are valuable for understanding motivations, attitudes, beliefs, and impacts on people's lives, providing unexpected information to researchers(Raworth, K. et al).

## 3.2 Sample Selection.

### 3.2.1 Defining and Identifying Participants.

Defining and selecting participants is crucial for a study's sample to be relevant and comprehensive. In Nigeria, various stakeholders, including public, private, NGOs, and civil society organisations, collaborate to address climate change goals. The banking sector is pivotal in channelling investments toward low-carbon projects and implementing innovative bond strategies that promote sustainable development.

Potential participants within the banking sector include commercial banks, development finance institutions (DFIs), investment banks, and regulatory bodies. Commercial banks can support renewable energy projects, efficiency improvements, and sustainable infrastructure developments. DFIs like the Nigerian Development Bank (NDB) and the Bank of Industry (BOI) are instrumental in providing long-term financing and technical support for these initiatives.

Investment banks play a key role in facilitating the issuance of green and sustainability-linked bonds, which specifically fund climate-friendly projects. Regulatory bodies such as the Central Bank of Nigeria (CBN) and the Securities and Exchange Commission (SEC) are essential for establishing frameworks and regulations encouraging green investments and ensuring transparency and accountability in the financial sector's decarbonization efforts.

Through collaboration and strategic partnerships, banking sector stakeholders can significantly contribute to Nigeria's transition to a sustainable and resilient economy. Developing institutional frameworks governing climate finance is vital for encouraging low-carbon and climate-resilient transitions in developing countries (Hogarth, J. Ryan. 2012). The effective participation of knowledge institutions, sustainability experts, and international standard bodies is indispensable in providing the necessary expertise, awareness, and metrics to assess the impact of these financial bodies on environmental sustainability.

**Table 1: Participants and their roles.**

No	Participants	Roles
1.	<b>Commercial Banks</b>	Provide financing for renewable energy projects, energy efficiency initiatives, and sustainable infrastructure development.
2.	<b>Development Finance Institutions (DFIs)</b>	Offer long-term financing and technical assistance for low-carbon projects. Notable DFIs include the Nigerian Development Bank (NDB) and the Bank of Industry (BOI).

3.	<b>Investment Banks</b>	Facilitate the issuance of green and sustainability-linked bonds to raise funds for climate-friendly initiatives.
4.	<b>Regulatory Bodies</b>	Create frameworks and regulations to incentivize green investments and ensure transparency and accountability. Important bodies include the Central Bank of Nigeria (CBN) and the Securities and Exchange Commission (SEC).
5.	<b>Knowledge Institutions</b>	Provide expertise, knowledge, and awareness necessary to assess the impact of financial activities on environmental sustainability.
6.	<b>Sustainability Experts</b>	Offer insights and guidance on implementing and measuring sustainable practices within the financial sector.
7.	<b>International Standard Bodies</b>	Set and enforce standards that guide sustainable investment and reporting practices, aiding in the global alignment of green finance initiatives.

### 3.2.2 Data Sampling.

This study utilized purposive sampling, a well-established and verified approach in qualitative research, to effectively collect data from specific groups of participants (Guest et al., 2013; Saunders et al., 2019). This approach entails the researcher's deliberate selection of participants with specific knowledge and experience that align with the study's aims. Purposive sampling is employed in qualitative research to establish reliable and valid interpretations of a phenomenon directed by a particular research question.

Purposive sampling improves research by enabling researchers to deliberately choose particular people, locations, and behaviours based on a study topic, resulting in reliable and dependable explanations of a phenomenon (Lingott, A. 2022). Engaging important stakeholders in the process of selecting the sample can improve the credibility of the study. To maintain study integrity, it is crucial to carefully consider ethical sampling procedures (Denieffe, S. 2020). The primary objective is to ensure that the participants can contribute valuable data that originates directly from their expertise or personal experiences.

The sampling process was carefully planned within the framework of this study, which examines how banks could contribute to Nigeria's climate commitments by promoting decarbonization. The selection of participants was based on their expertise, their active engagement in funding projects in crucial sectors relevant to this endeavour, as well as their involvement in policy-making and policy advocacy. Additionally,

their extensive knowledge of investment trends in low-carbon projects within Nigeria and beyond was taken into consideration.

Moreover, these individuals were chosen for their comprehensive understanding of green and sustainability-linked bonds, vital in financing environmental projects. The careful selection of these participants guarantees that the data gathered is based on a comprehensive and pragmatic understanding of local and global environmental finance policies. This approach also facilitates the establishment of a strong basis for deriving significant insights into effective methods for promoting sustainable development through financial interventions by the banking sector.

### **3.3. Data Collection Procedures.**

Collecting data for a qualitative study requires setting clear research parameters and creating methods for acquiring information (Akomolafe B., 2023; Creswell & Creswell, 2018). Qualitative research approaches are based on participant respect and trustworthiness (Frierson-Campbell & Froehlich, 2022). To conduct a comprehensive analysis of a topic, it is essential to collect extensive data from multiple sources. This includes a variety of data, such as interviews, as well as academic and policy publications. A thorough review was conducted on previously conducted studies relating to this topic and the research problem. Likewise, interviews were carried out with experts in sustainable finance, sustainability officers, and bank managers who have expertise and comprehension of global decarbonization trends and the potential role of the banking sector in supporting the government in achieving its targets.

To maintain ethical standards and adhere to data collection norms, all acquired information is appropriately cited. The study will employ APA style for citing sources inside the text and listing them in the bibliography at the end of the paper. Prior to the interviews, a synopsis of the study was distributed to all participants. The synopsis encompasses the research topic, its aims, the research questions, the methodology to be employed, and the anticipated outcomes.

#### **3.3.1. Document review and selection.**

In this study, qualitative document reviews were conducted to gain insights from a variety of literature, policy papers, legislation, and specific official websites of the Government of the Federal Republic of Nigeria. This research comprises a broad spectrum of topics, including economic and technical factors, institutional strategies, governance systems, and the roles played by different entities. The research questions were addressed using two data collection methods: an extensive review of scholarly literature on decarbonization through investment in low-carbon emission initiatives facilitated by innovative sustainable bonds in Nigeria, and a systematic content analysis of official documents such as laws, policy documents, plans, press releases, and other blueprints. Secondly, the semi-structured interviews with key stakeholders.

The document review procedure entailed the examination of several documents such as banking principles, rules, and standards. The process of identifying pertinent papers commenced with a thorough search of the official websites of the country's several sectors, with a primary emphasis on energy,

infrastructure, transportation, waste management, Agriculture, Forestry, and Other Land Use (AFOLU). Only materials specifically about the methods of reducing carbon emissions and achieving climate mitigation goals were chosen for investigation of their content. The rest of the literature was just used to inform ideas and to examine the status quo regarding decarbonization in the country.

**Table: Main documents reviewed.**

No	Documents	Category
1	Nigerian Sustainable Banking Principles May 21, 2012	Policy document
2	Climate Change Act, Nigeria. October 2021	Policy document
3.	Securities & Exchange Commission, Nigeria Guidelines On Sustainable Financial Principles For The Nigerian Capital Market- April 2021	Policy document
4.	Sectoral Action Plans for Nigeria’s Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC)- August 2017	Policy document
5.	Paris Agreement (or Paris Accords, Paris Climate Accords)- 12, December 2015.	International Treaty
6.	Landscape of Climate Finance in Nigeria; Sean Stout and Chavi Meattle October 4, 2022.	Policy document
7	Various commercial Banks sustainability Reports.	Reports

### **3.3.2. Interviews.**

Interviews with key players from specific sectors were conducted to acquire knowledge, perspectives, and opinions on the study topics. During the analysis phase, the researcher used a network that comprised

consultants such as sustainability officers and bank managers, as well as academics such as university professors with expertise in sustainable finance, energy transition, sustainability, and innovation. These individuals had previously been involved in a similar study. The researcher also used networks from transnational organizations such as the Loan Market Association (LMA) and the Climate Policy Initiative (CPI) to find prospective interview participants.

Following ethical norms and standards, possible interview participants were notified via email to confirm their willingness to participate in the study. Before the interview, participants received an interview guide and a study synopsis via email, and the interview day and time were mutually agreed upon. The interviews were performed via Zoom, Microsoft Teams, and Google Meet, which allowed the researcher to collect relevant perspectives and information to inform decisions. Three interviews were conducted: with a sustainable finance professor, a sustainability officer, and a bank manager.

### **3.4. Data Analysis Techniques.**

This study used primary and secondary data analysis to accomplish its goals. Secondary data analysis saves time by utilizing pre-existing data, enabling convergence. However, researchers may need help choosing appropriate data in environments abundant with data, especially when striving for coherence. These issues include variations in the years of data collection, inconsistencies in the units of measurement, varying approaches to data collecting or estimation, and a wide range of data sources.

Finding a balance between the correctness and comprehensiveness of data is essential, as very accurate data may be scarce, while more comprehensive data may be less reliable (Andrews, L. 2012; Goel, A. 2023). The technique of descriptive coding was applied to analyze the theoretical framework and research question concerns to identify underlying ideas, conceptions, and assumptions. The analysis was conducted simultaneously and repeatedly, involving continuous data evaluation alongside categorization and coding improvement.

The interviews, conducted over the Zoom and Teams platform, were transcribed using Microsoft Word, which was crucial in collecting data. As a result, **condens.io** helped to organize and categorize data, improving its accuracy and reliability. This online application facilitated the input of qualitative data through manual entry. The data was organized according to coded categories developed based on the study questions, objectives and theoretical framework (Saldaña J. 2021; Fereday J, & Muir-Cochrane E. 2006).

#### **3.4.1. Data Validity and Reliability.**

There are quite several issues regarding validity in qualitative studies because qualitative research relies on the interviewees' perspectives, opinions and knowledge, which may be subjective, biased or insufficient (Noble H, & Smith J 2015; Akomolafe B., 2023;). Hence, it is essential to address possible threats to validity at each stage of the process, including data collection, analysis, and interpretation (Cho J, Trent A 2006). Construct validity is essential for accurately identifying the causes, effects, settings, and participants involved in a study. It is empirically established by carefully distinguishing between persons

who possess specific qualities (Creswell & Creswell, 2018).

A study was conducted to examine the contribution of the banking sector to Nigeria's efforts to reduce carbon emissions. The study used a convergent validity construct, which incorporated input from sustainable finance experts, bank executives, and sustainability experts. This method highlighted the potential role of banks in promoting low-carbon projects and bond strategies. Internal and external validity are crucial factors to consider in qualitative research. Internal validity guarantees that the results accurately reflect the target individuals without any errors in the research methodology.

While interviews are an important research method in qualitative studies, they entail several potential deficiencies, such as selection bias, false information, or misinterpretation (Bryman, A. 2018). However, acknowledging the various benefits of qualitative interviews and their shortcomings was addressed by interviewing quite several individuals with diverse knowledge of the topic. Multiple data sources were collected to ensure internal validity, and a crosscheck of data sources was used to establish the research's validity and protect against researcher bias (Creswell, 2014).

These methodologies were utilised to maintain the credibility and significance of the study's results within the larger context of qualitative research.

### **3.4.2 Ethical Considerations.**

When studying a very complicated and diverse issue like the role of banks in decarbonizing the economy via their lending and investment portfolios with the help of innovative bonds, the maximum ethical standards must be maintained to protect the participant's rights, well-being, and anonymity. Ethical considerations are germane to maintaining the integrity and credibility of the research process.

Before conducting any data collection operations, researchers must get informed and express consent from participating persons. This includes appropriately presenting the study's objective, methods, risks, and expected outcome to participants in a very comprehensive and literal way. Participation is entirely voluntary and the participating bank executives; sustainability officers and sustainable finance experts' participants can resign from the study at any moment of their choice without an iota of repercussions.

The confidentiality of the participants' information is the key to sustaining confidence and integrity in the research process. Researchers must guarantee that all information acquired from participating bank executives, sustainability officers and sustainable finance experts is kept strictly secret. This involves removing and storing any identifying information securely to avoid illegal access.

Given the sensitive nature of the acquired data, researchers must implement robust data security procedures to avoid breaches or unauthorized access. This involves implementing encrypted communication channels for data transfer, safeguarding data storage systems with access restrictions and encryption methods and upgrading security procedures regularly to prevent emerging threats.

Maintaining a respectful and professional tone while interacting with the participants is crucial to ensure a favourable study atmosphere. That entails researchers displaying empathy, attentiveness, and



cultural sensitivity, responding to any concerns or queries promptly and openly. Researchers should maintain open communication lines and collaborate with participating stakeholders, ensuring their views and opinions are appreciated and respected throughout the study cycle.

To address these ethical issues, I first did my findings to identify and familiarize myself with the persons to be involved, I then sent out cold emails to introduce myself, communicate my intentions, and seek permission to conduct the research. Their official correspondence got back to me and communicated the availability of the interviewees. I then met the various participants in a teleconference to briefly discuss the purpose of the study and we finalized the individual days that the interview could be conducted. All the participants were made aware that their involvement in this research project was voluntary. They also had the right to withdraw subsequently, without giving any reason.

Their participation or lack thereof would not affect their academic work, and whatever they said would not be disclosed to any other person. I also ensured they were comfortable with the questions asked or the answers demanded from them. Furthermore, I addressed all these ethical issues in the research by giving these participants names using alphabetic letters for privacy purposes.

### **3.4.3. Research Limitation.**

The study on Nigeria's banking sector's role in decarbonization faced critical limitations. Accessing relevant documents was hindered by limited availability and reliability, compromising the representation of banking activities. Semi-structured interviews, while valuable, suffered from biased stakeholder selection and difficulty in securing participants. Commercial banks were notably underrepresented.

Technical issues and unwillingness to participate further impeded interviews. Also, constraints on time and finances prevented on-site visits. These limitations underline the need for future research to address these challenges for a more comprehensive understanding of the sector's role in decarbonization efforts.

# Chapter Four

## Empirical Results & Findings

This chapter presents the empirical results from documents analyzed and interviews conducted for the study on the role of the banking sector in supporting Nigeria’s decarbonization journey. The subsequent results present the overview of low-carbon projects financed by banks, other financial institutions, and non-financial bodies. Likewise, the sustainable bonds issued by the various bodies; banks, and sovereign and international organizations for the qualitative data analysis answer the research objectives related to investment in low-carbon projects and bond strategies.

The chapter will be divided into two subsections: The findings from the literature and policy documents and the from interviews conducted with some stakeholders. The document analysis will present findings regarding research questions 1, 2, and 3. While the interview covers RQ1, RQ2, and RQ4. The findings will take into account the country’s emissions by sector in MTCO<sub>2e</sub>, and various projects that were carried out by banks and other financial institutions to mitigate or ensure decarbonization in any of the sectors. The total green or sustainability Linkin bonds that were issued, the regulatory framework in place to facilitate the decarbonization journey and lastly the challenges with this journey.

### 4.1. ANALYSIS

#### 4.1.1 Emissions by Sectors

Variables/sectors	Findings
Energy	<ul style="list-style-type: none"><li>- Emissions from the oil and gas sector</li><li>- Emissions from transportation and other commuting activities.</li><li>- Electricity generation, and residential and industrial consumption</li><li>- The energy sector is the major contributor to the emissions in the country with an over 50 per cent reduction by 2030 anticipated because of the global trends and enthusiasm for a Shift towards renewable energy sources, and reduced reliance on fossil fuels.</li></ul>

Agriculture, Forestry,  
and Other Land Use  
(AFOLU)

- Emissions from forest clearing for agriculture release carbon stored in trees and soil into the atmosphere.
- Emissions from intensive farming practices, including synthetic fertilizers and pesticides, contribute to nitrous oxide and methane emissions.
- Livestock: Methane emissions from enteric fermentation in ruminants (e.g., cows, sheep) and manure management are significant.
- Rice paddies: Flooded rice fields produce methane, a potent greenhouse gas.
- Soil management: Practices like ploughing and the overuse of land decrease the soil's ability to absorb carbon, releasing more CO<sub>2</sub>.
- Urbanization: Emissions from construction and city development due to the number of rural-urban immigrants.
- The AFOLU sector emission will increase by 2030 mainly because of land use, despite shifting towards sustainable agricultural practices.

Waste and Industrial Processes	<p>-Emissions from the decomposition of organic waste under anaerobic conditions (methane).</p> <p>- Emissions from production that results in CO2 (cement and steel production)</p> <p>Wastewater treatment: Releases methane and nitrous oxide during the treatment of organic waste in water.</p> <p>Incineration of waste: Produces carbon dioxide and potentially toxic emissions such as dioxins and furans when burning synthetic materials and plastics.</p> <p>-Emissions from different industrial chemical processes that release various greenhouse gases, including nitrous oxide and volatile organic compounds.</p> <p>- Emissions from refrigeration and air conditioning for storage and safety systems often leak hydrofluorocarbons (HFCs), which are very potent greenhouse gases.</p> <p>- There will be a decrease by 2030 because of the enhancement of industrial efficiency through technological upgrades and process optimization.</p>

#### 4.1.2 Projects carried out by banks and other financial institutions to mitigate emissions for decarbonization purposes.

Variables/sectors	Findings
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## Energy/Electricity

### **United Bank for Africa's Renewable Initiatives:-**

- Converting 119 of its Automated Teller Machines (ATMs) to renewable energy sources.
- It is part of a broader commitment to reduce greenhouse gas emissions and achieve net-zero status by 2050.
- Transitioning to paperless communications and prioritizing environmentally compliant suppliers in its procurement processes, marking a substantial move towards reducing its operational carbon footprint.
- This includes but is not limited to, digital receipts for transactions, forms and other services.
- Using renewable energy sources like solar systems to power the facilities.
- Electric vehicles (EV).

### **Solar Power Naija Initiative:-**

- is set to provide solar home systems to 5 million off-grid households, supported by a substantial NGN 140 billion in funding from the Central Bank of Nigeria.
- It aims to increase electricity access using renewable sources but also supports the government's larger decarbonization goals.

### **Feed-in Tariffs (FITs), Tax Exemptions, and Financial Support for Renewable Projects:-**

- Implementation of various financial incentives such as Feed-in Tariffs (FITs), tax exemptions, and the establishment of financial mechanisms like the Renewable Energy Fund (REF) and the Nigerian

Electricity Market Stabilization Facility (NEMSF).

- It is designed to support investment in the renewable energy sector, stabilize the electricity market, and ensure the development of sustainable energy projects across the country.

**Renewable Energy Roadmap and Investment:**

- Ambitious targets are set to meet 47% of Nigeria's primary energy requirements and 52% of its final energy consumption from renewable sources by 2030.

- By 2050, these targets will increase to 57% and 59%, respectively. The roadmap outlines the financial implications, estimating a total investment requirement of USD 1.22 trillion under the Sustainable Energy Scenario (TES), slightly lower than the Planned Energy Scenario (PES) at USD 1.24 trillion.

## Transport/Mobility

- There is an effort and broader strategy to reduce carbon emissions and enhance sustainable mobility in the regions heavily impacted by transportation-related pollution and congestion.
- Nigeria's Energy Transition Plan for Electric Vehicles (EVs) is in place.
- Ambitious goals to transform its transportation sector as part of its broader climate action initiatives. A significant part of this plan includes transitioning to electric vehicles (EVs). The government has set specific targets to facilitate this transition:
  - 10% biofuel blends by 2030: This target aims to incorporate biofuels into the fuel mix, reducing dependence on fossil fuels and lowering emissions from conventional vehicles.
  - Complete EV adoption by 2060: This long-term goal underlines a major shift towards fully electrified public and private transportation systems.
  - The full adoption of electric vehicles by 2060 represents a significant commitment to reducing the transportation sector's carbon footprint. This shift is expected to decrease the reliance on imported petroleum and improve local air quality.
- International Finance Corporation's (IFC) Investment in Lagos to enhance sustainable transportation.
- It was \$50 million investment funding, provided in local currency, focused on developing sustainable urban transport systems in Lagos.
- Rehabilitation of transport lines: The investment

targets the rehabilitation of two key transport lines to enhance efficiency and capacity, aiming to benefit approximately 150,000 passengers daily.

- Certain implications and challenges are confronting these projects such as infrastructure limitations e.g. adequate charging infrastructure, high initial costs for transition, and policy barriers among other things.

- Technologies are crucial for sustainable mobility in Nigeria.



**Buildings/Infrastructure****SUNREF Program Impact:**

- Technical Assistance Facility: \$81 million allocated for enhancing energy efficiency and renewable energy integration in buildings.
- Energy Savings: Significant reduction in energy consumption achieved through retrofitting commercial and residential buildings with energy-efficient technologies such as improved insulation, advanced HVAC systems, and eco-friendly windows.
- Sustainability Outcomes: Improved energy performance of buildings, contributing to a reduction in greenhouse gas emissions and operational costs.

**Nigeria Erosion and Watershed Management Project (NEWMAP):**

- Over \$900 million was invested in addressing severe erosion and promoting sustainable land management across 23 states.
- Infrastructure Development:
  - Construction of erosion control features like gully and catchment systems, implementation of advanced stormwater management solutions, and improvements in solid waste management practices.
  - Enhanced community participation in sustainable land management, creating 52,000 jobs and involving local populations in project design and implementation.
  - Stabilization of soil, reduction in land degradation, and improved resilience against climate-induced disasters.

- High upfront costs for retrofitting and upgrading infrastructure pose financial challenges despite potential long-term savings and increased property values.

## Other land use

### **Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) project in Northern Nigeria:**

- \$700 million credit provided by the World Bank to enhance climate resilience in agricultural landscapes.
- Targeted specifically in Northern Nigeria, an area prone to severe droughts and increasing water scarcity due to climate change.
- Implement strategies to manage land in a way that sustains its productivity and capacity to support agriculture and livelihoods.
- To develop and implement water management systems that are robust and can withstand the variability brought about by climate change.
- Equip communities in semi-arid and dry sub-humid areas with the tools and knowledge to adapt to climate variability and extreme weather conditions.
- Introduction of sustainable practices that prevent land degradation, such as reforestation, controlled grazing, and the introduction of drought-resistant crop varieties.
- Implement techniques like rainwater harvesting, construction of small water reservoirs, and efficient irrigation methods to optimize water use.
- Conduct training sessions and workshops to empower local farmers and community members with modern agricultural practices and management strategies that align with climate resilience objectives.
- Involve local communities, especially vulnerable groups, in the planning and execution of project activities

to ensure their needs and suggestions are incorporated.

- Technology Transfer by introducing advanced agricultural technologies and practices that can significantly improve yield and sustainability in the face of challenging climatic conditions.

- Strengthened adaptive capacity of agricultural systems and communities to withstand droughts and water scarcity, improved soil health and water availability expected to lead to better crop yields and more stable food sources for local populations.

## Waste Management

- GT Bank's Waste to Play Project is a collaborative effort between GT Bank and the PP40 group.
- Transform waste materials into practical and instructive playgrounds for public primary schools in Lagos.
- Incorporation of a diverse range of waste materials, such as plastics and metals, that would otherwise be disposed of in landfills.
- The project imparts knowledge on creativity, sustainability, and the significance of recycling to over 500 kids.
- The playgrounds exemplify the practical use of waste repurposing, whilst offering secure and enjoyable play spaces for children.
- Promotes the involvement of local communities in adopting sustainable practices and recognizing the importance of waste materials.
- Access Bank's efforts in promoting environmental sustainability Program for Converting Paper to Pencil
- The recycling process involves transforming paper commodities, such as wasted office paper and newspapers, into pencils.
- Distributed repurposed pencils to a large number of kids, promoting knowledge of recycling and its advantages.
- Students learn about resource conservation and the circular economy using recycled pencils. Strategy:
- recycling a diverse range of materials, such as

paper, plastic, glass, and aluminium cans, at all branches.

- Implementing garbage sorting and recycling as a regular procedure in branch operations.
- The bank provides training and encouragement to employees to actively participate in recycling programs, to encourage a more comprehensive environmental culture.
- Strategic alliances and cooperative efforts were formed between Access Bank and FABE Foundation to convert used tyres from their vehicles into functional furniture, thereby promoting waste reduction and sustainability.

#### 4.1.3. The total green and/or sustainability-Linked bonds issued and the growth of bond markets.

Type of Bond	Issuer	Amount	Year	Purpose/Projects Financed
<b>Sovereign Green Bond.</b>	Government of Nigeria	<b>NGN 10.69 billion</b>	2017	<b>Projects related to energy, land use, and other sectors</b>
<b>Sovereign Green Bond</b>	Government of Nigeria	<b>NGN 15 billion</b>	2019	<b>Continuation of projects from the first issuance</b>
<b>Corporate Green Bond</b>	Access Bank PLC	<b>NGN 15 billion</b>	2019	<b>Water infrastructure, solar power generation, flood mitigation</b>
<b>Green Infrastructure Bond</b>	North South Power Co.	<b>NGN 8.5 billion</b>	2019	<b>Energy efficiency and renewable energy initiatives</b>
<b>Green Bond</b>	OneWatt Solar (OWS)	<b>Part of N10 billion</b>	2021	<b>Green projects as part of a larger issuance program</b>

#### 4.1.4 The regulatory framework is in place to facilitate the decarbonization journey.

Year	Regulation/policy	Purpose/Description
<b>2012</b>	Nigerian Sustainable Banking Principles	Focuses on the financial sector's role in promoting sustainable development through

		responsible banking practices and investment in green projects
<b>2017</b>	Sectoral Action Plans for NDC to UNFCCC	Guidelines for implementing Nigeria's commitments outlined in the Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC). These plans prioritize the reduction of emissions in crucial areas such as energy, transportation, and agriculture.
<b>2018</b>	Nigeria Energy Transition Plan (ETP)	Provides a strategic pathway to achieve carbon neutrality by 2060. Focuses on enhancing access to modern energy services and increasing the share of renewable energy in Nigeria's energy mix.
<b>2021</b>	Climate Change Act	Establishes the National Council on Climate Change, which sets emissions targets, develops a carbon budget and implements mitigation measures. Introduces the Climate Change Fund to finance climate actions.
<b>2021</b>	SEC Guidelines on Sustainable Financial Principles for the Capital Market	Issued by the Securities & Exchange Commission to guide capital market operators on integrating environmental, social, and governance (ESG) factors into investment decisions and practices.



2021	Solar Power Naija Initiative	This project aims to supply solar home systems to 5 million families not connected to the electricity grid as a component of the Nigerian Economic Sustainability Plan. This initiative is backed by financial resources from the Central Bank of Nigeria. Created to increase the utilization of sustainable energy sources and promote the growth of low-emission development.
2020	VAT Modification Order 2020	To promote the adoption of renewable energy sources such as solar power and facilitate the transition to a more environmentally friendly energy sector, the value-added tax (VAT) on renewable energy equipment is waived.
Various	Feed-in Tariffs (FITs), Nigerian Renewable Energy and Energy Efficiency Policy (NREEEP).	<ul style="list-style-type: none"> <li>- Provides incentives to encourage renewable energy generation, promoting investment in and advancing renewable energy projects, specifically solar, wind, biomass, and hydroelectric power.</li> <li>- Offers a structured system for advancing and executing renewable energy and energy efficiency initiatives, directing players and simplifying procedures to guarantee the effective progression of sustainable energy projects.</li> </ul>

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#### 4.1.5 Some of the challenges with Nigeria’s journey to Decarbonization.

Challenge	Description
Financial Constraints	Financial Constraints Limited climate finance inflows compared to the substantial need for low-carbon development projects. The gap in financing is especially pronounced in the renewable energy and sustainable transportation sectors.
Regulatory Inconsistencies	The regulatory framework needs uniformity and clarity, which hinders the effective implementation of decarbonization initiatives. There is also a need for a comprehensive regulatory framework specifically designed to support sustainable finance.
Infrastructure Limitations	Inadequate infrastructure for renewable energy and electric vehicles limits the adoption and effectiveness of these technologies in reducing carbon emissions.
Systematic corruption and bad governance.	Lack of transparency and accountability for the usage of finance deployed for development projects and infrastructure among public administrations such as

	politicians and public institutions, eg. banks.
Dominance of Fossil fuel Financing	Continued heavy investment in fossil fuel projects conflicts with the goals of reducing carbon emissions and transitioning to renewable energy sources.
Lack of Awareness and Technical Expertise	Many stakeholders must know about carbon offset opportunities or the benefits of transitioning to a low-carbon economy. More technical expertise is needed to develop and implement effective decarbonization strategies.
Societal Attitudes and Consumer Preferences	Resistance to change and a lack of understanding about the benefits of sustainable practices among the general population. This affects the adoption of green technologies and practices
Complex Project Verification Processes	Difficulties in verifying carbon offset projects, which can delay or hinder the implementation of such initiatives
Environmental Vulnerability	Nigeria is highly susceptible to the impacts of climate change, such as extreme weather events and agricultural disruptions, which complicates efforts to decarbonize and necessitate additional adaptive measures.
Technology Transfer and Innovation	Limited access to advanced technologies and innovation in sustainable practices restricts the ability to implement cutting-edge solutions that could accelerate decarbonization efforts.
Investment Risk Perception	High perceived risks associated with investing in green technologies and projects deter both local and international investors. These perceptions are often due to market volatility, regulatory uncertainties, and Nigeria's nascent

	stage of many green technologies.
Capacity Building and Skill Development	There is a significant need for capacity building and skill development in green technologies and sustainability practices across all levels of society, including within governmental bodies, the private sector, and general consumers.
Supervision & Management.	<p>The CBN supervises and regulates the activities of banks to ensure they meet their climate change and sustainability obligations. Yet, it does not have express authority under NSFBP to impose fines and sanctions on banks that fail to comply with the sustainability banking principles.</p> <p>However, the Climate Change Act 2021 states that private entities failing to meet their targets are liable to fines determined by the Council. The Council established under the Climate Change Act has the authority to supervise and ensure compliance with the regulations, including imposing penalties for non-compliance.</p>

## 4.2 INTERVIEWS.

This section presents findings obtained from interviews conducted with key participants involved in the project. The insights obtained provide a more profound comprehension of the practical implications and issues associated with the study objectives and research questions, providing a rich qualitative complement to the quantitative data. In this study, the abbreviation 'SFE' stands for Sustainable Finance Expert. Similarly, the acronym 'SO' represents Sustainability Officer, whereas 'BM' denotes Bank Manager.

## 4.2.1 Factors Influencing The Banking Investment Decision.

To find answers to research question 1: “What are the key factors influencing the banking sector's investment decisions in low-carbon projects in Nigeria, and how do these decisions impact the country's decarbonization efforts?”. The interviewees were asked to express their perception of the level of awareness and commitment among Nigerian banks towards integrating environmental, social, and governance (ESG) factors into their lending and investment decisions and also to tell what steps can be taken to promote ESG integration within the banking sector further.

The generic response gathered while analyzing the interviewee's perceptions on the “level of awareness and commitment” amongst banks regarding ESG integration was that Nigerian banks increasingly acknowledge the importance of integrating ESG factors into their operations. However, the level of awareness and commitment can vary significantly among institutions. Some leading banks have begun incorporating ESG criteria into their risk assessment processes and decision-making frameworks.

However, there is this view that the level of awareness is influenced by global trends and pressures from international investors who prioritize sustainable practices and investments. It is believed that there are still some challenges confronting integration, and to tackle those challenges, there is a need to implement many measures, such as standardized ESG reporting metrics, adequate regulatory frameworks, and the need for greater expertise in ESG issues, which entails training and education among banking executive which could prove advantageous.

*“ We dance to the tune of every music playing globally, especially Western music. The fact that everybody is talking about it is enough for banks here in Nigeria to say ESG factors are part of their dealings, even though some do not truly practice it. With the help of digital technology and social media availability, even a common person in the street could have little knowledge of ESG as a catalyst of today's business landscape.” SFE*

With some similarity of perception, another interviewee believed that integrating ESG factors in the banking sector could greatly help the country's decarbonization journey.

*“ It is obvious that ESG, sustainability, and climate change are something someone would not spend a day without hearing about. The level of awareness regarding these issues among the financial players in this Country may not be the same as in other parts of the world. Still, recently, businesses, including the banking sector, have become much more aware of it. Some of the banks in this country have demonstrated that in terms of initiatives carried out, also their blueprints.” SO*

From the responses, it is clear that the level of awareness in the banking sector is there, and so is commitment. But it is not much, there are weaknesses and lapses.

*“ It is part of our corporate mission and values. Even before the issue of ESG became a global trend, we had some measures to prevent pollution in our company branches. But recently, it has gone beyond that, we*

*train our personnel on that, and we have carried out some big projects, especially at the headquarters level for Environmental training on conservations and many more. Sometimes, we even talk to our biggest clients to be conscious of investment because apart from being a trend, we have realized that it is important to do so for the benefit of all of us. The integrity of our environment should be maintained so that all of us as humans can live better.” BM*

With these different expressions but similar views, we can deduce and conclude by saying that while global trends and stakeholders’ preferences have gained a lot of momentum, influencing the banking sector's level of awareness and commitment concerning integrating ESG factors into their lending and investment decisions, there is also a voluntary willingness to protect the integrity of the environment and ensure the wellbeing of humankind.

#### **4.2.2. Influence of Financial Institutions on Green Bond Investments/Markets in Nigeria.**

This section examines the interviewees’ perspectives and opinions on how the involvement of various financial and non-financial institutions in the green bonds market influences the deployment of capital towards decarbonization initiatives. This section was addressed using the interview question asked of the interviewees: “Innovative bond structures and financing mechanisms (green and sustainability linked bonds) have become increasingly important in driving investment towards low carbon projects. How might these strategies be replicated to meet Nigeria's unique economic and environmental challenges? What measurable impacts have these financial mechanisms had on advancing decarbonization efforts within regions that have successfully implemented them?”

Given the intricate nature of green and sustainability linking bonds, the interviewees were a little sceptical of the response, believing that while such innovative bonds could work perfectly in other regions like Europe, the case might not be the same in Nigeria because of so many factors, which include awareness and knowledge among the issuers, risk associated, regulatory frameworks, and governance issues.

*"We cannot be 100 percent sure that the replication or practice could easily be done here because there are strong institutions on the other side, people are up-to-date about these issues, so for them, it could be easy to implement. In Nigeria, undoubtedly, adapting innovative bond structures like green and sustainability-linked bonds can be crucial. These bonds could be tailored to fund large-scale renewable energy projects, sustainable agriculture, and infrastructure resilient to climate change. The few ones that were issued some years back are just the beginning, it was a milestone and once the positive impacts of those have started manifesting, many investors will be willing to participate. For replication, a robust framework involving government incentives, clear impact metrics, and stakeholder engagement will help us achieve that. Regions like Europe have seen these bonds significantly lower the carbon footprint by directly funding decarbonization projects, demonstrating a potential model for Nigeria. Moreover, these instruments often*

*come with lower borrowing costs and enhance the issuer's reputation, driving more investments in sustainable projects. We shall surely get it right, but not in a hurry." SFE*

The other interviewee airs his opinion, focusing mainly on transparency to ensure the finances are channelled to the right projects or direction.

*"I think integrating green and sustainability-linked bonds in Nigeria's sustainable finance landscape requires aligning them with local economic and environmental priorities, like addressing energy deficits through renewables and supporting sustainable land use practices. The successful implementation shall depend on transparency in using proceeds and results-based financing that ensures projects deliver on their environmental promises. These mechanisms in Southeast Asia and Europe have catalyzed significant private sector investment into low-carbon technologies, showing a measurable shift towards sustainable practices. Nigeria can replicate this success by ensuring these financial tools are accessible and well-regulated." SO*

Inferring from the interviews, innovative bond strategies could be game-changers in Nigeria's journey to decarbonization. These strategies have shown considerable potential in channelling funds towards low-carbon and sustainable projects globally. The market has recently skyrocketed, expanding because these bonds have become a centre of attention and a preferred choice for investors.

Both green and sustainability-linked tools can be adapted with strategic modifications to address Nigeria's specific economic and environmental challenges, such as energy access, deforestation, and infrastructure development. However, from a decarbonization perspective, green bonds, which specifically finance projects with environmental benefits, are well-suited to Nigeria's context, where targeted investments can be directed towards renewable energy projects, like solar and wind farms, or sustainable infrastructure development.

However, broader sustainability issues should be considered. In that case, sustainability-linked bonds are more versatile since they do not fund specific projects but are linked to the issuer achieving certain predetermined sustainability outcomes, such as emission reductions or improvements in energy efficiency across operations. This flexibility could be advantageous for Nigerian companies in various sectors, including banks, allowing them to leverage these funds to meet broader sustainability goals that might not strictly qualify under green bond criteria.

### **4.5.3. An Assessment of Nigeria's Adherence to International Climate Change Agreement.**

This section provides findings on the last but important research question of how well Nigeria is meeting its commitment to international treaties and agreements regarding climate change. The finding generally shows that the country is thriving and that so far it has demonstrated some degree of willingness and commitment, especially when comparing it to some countries in the continent of Africa. In terms of

policy, governance and finance, it has played a significant role in meeting international climate change commitments. Here, the interviewees were asked to assess the country's achievement regarding the plan to keep temperature increases well below 2°C above pre-industrial levels.

To critically examine this, the interviewees were asked: "Can you assess Nigeria's progress in meeting its climate change targets, considering its adherence to international treaties and accords like the Paris Agreement? What are the primary obstacles and achievements the country has faced in this endeavor?"

In light of the numerous comments from the interview, the commonality in their answers is that, up to this point, the country has exhibited commendable performance despite its economic condition and other distracting challenges. However, they believe that obstacles impede the country's commitment to or achievement of the targets within the specified timeframe.

*"I have repeatedly said on different occasions that our problems differ from those of others. When faced with many challenges, we prioritize each according to the degree of impact they have on the country or people. We are overshadowed by significant problems, and if you consider the 17 SDGs, you will agree that goal 13, 'climate change,' should be our least priority. In the West, sustainability discussions focus on climate change. Here, however, we are talking about hunger, poverty, education, infrastructure, and many more. Nigeria is gradually progressing toward its climate change targets, especially under the Paris Agreement, where it has pledged to reduce greenhouse gas emissions unconditionally by 20% and conditionally by 45% by 2030 compared to business-as-usual levels. Achievements include the development of several large-scale renewable energy projects and the creation of green bonds, which are crucial for funding environmental projects. However, the primary obstacle remains the mobilization of sufficient financial resources. The country requires substantial international financial support and investment in green technologies, and improvements to its regulatory framework are needed to attract more private investment in sustainable projects. All sectors, especially financial institutions, must play a role effectively." SO*

In a similar view, the other interviewee responded, with this being extracted from the answer:

*"It would be unjust to claim that the government of Nigeria is not actively pursuing its international commitments on climate issues and sustainability in a broader sense. During multiple Conferences of the Parties (COP), the country has presented its climate aims and strategies to the international community. We can also see the implementation of certain projects and policies. Indeed, the nation has exerted considerable endeavours and continues its ongoing attempts. Although it may not have attained the same level of accomplishments as several European countries, given its status as a developing economy, it is undeniably advancing. We will undoubtedly succeed if we can effectively solve the obstacles of inadequate infrastructure, funding, policy inconsistency, and difficulties in implementing environmental practice standards.*

*Moreover, the matter of co-governance holds significant importance. Strong institutional capability is required to supervise and execute sustainability projects with efficiency. We acknowledge our nation's*



*historical context and occurrences, where several initiatives have been abandoned for various reasons, primarily due to a lack of responsibility and openness. Lately, there have been achievements in augmenting the proportion of renewable energy in the country's power network and enforcing policies to decrease gas flaring. Cities such as Lagos, Port Harcourt, and Abuja have successfully implemented diverse sustainable transportation systems, showcasing their mobility capabilities. Accomplishments of this nature cannot be achieved quickly." SO*

With the diverse opinions given by the various interviewees, there is a similarity in affirming that the country is indeed playing a significant role in meeting up with the Paris Agreement on cutting off carbon emissions to tackle the challenges of climate change.

*“The country has done and is still doing, a great deal to ensure that emissions from all sectors are being reduced. In terms of policies, it has shown commendable initiative. Numerous projects and initiatives are visible everywhere; it's clear to see that we are doing tremendously well. However, speaking as a banker, Nigeria's journey towards achieving its climate change targets is marked by both opportunities and risks. Establishing frameworks for green bonds, similar to those we've seen previously, has been a notable achievement, fostering avenues for sustainable investment. Nonetheless, green investments' economic and financial risks are the primary challenge. Many people are not well-informed about these investments, and even those knowledgeable may be hesitant due to factors such as currency instability, inflation, insecurity for foreign investors, and regulatory uncertainties, which deter potential investors. Creating more favourable conditions for investments in the green sector could greatly assist us. Banks and financial institutions must also develop innovative financial products catering to renewable energy projects and sustainable development. If every sector plays its role accordingly, the targets can be achieved in due time.”*

Thus, the subsequent chapter shall discuss the study's findings and analysis of gaps, as well as conclusion and recommendations.

# Chapter Five

## Discussion And Conclusion

### 5.1. Introduction

This chapter summarizes and discusses the study's main findings, research questions, and theoretical frameworks. The research study highlights its significance in relation to existing academic literature. It also discusses the practical implications and the theoretical contributions to the field. The chapter will conclude by outlining the study's limitations and proposing suggestions for future research directions.

### 5.2. Summary of the research questions.

The primary aim of this research is to study how the banking sector in Nigeria can contribute to the country's decarbonization efforts by channeling investments into low-carbon projects. This includes examining the role of various innovative financial instruments, such as green bonds and sustainability-linked bonds. The study seeks to identify key factors influencing investment decisions within the banking sector and evaluate the potential synergies and conflicts between banks' profitability goals and environmental responsibilities. Ultimately, the study looks at the broader picture by carefully examining how well the country is meeting the global targets on climate change and sustainable development goals in general.

On this ground, the study was guided by some critical research questions: (1) What are the key factors influencing the banking sector's investment decisions in low-carbon projects in Nigeria, and how do these decisions impact the country's decarbonization efforts? (2) What are the potential synergies and conflicts between the profitability goals for Nigerian banks and their role in promoting decarbonization through investment in low-carbon projects and bond strategies? (3) How does the involvement of various financial and non-financial institutions in the green bonds market in Nigeria influence the distribution of capital towards decarbonization initiatives? (4) How well is Nigeria meeting its commitment to international treaties and agreements regarding climate change?

### 5.3. Interpretation of the Results.

Having examined the existing literature, policy documents, and interviews with some key stakeholders, including academia and banks, the research study reveals that Nigeria's banking sector is increasingly financing low-carbon projects and sustainable development initiatives, both direct and indirect. This empirical result validates the literature (Koester 2016) that emphasizes the importance of banks in promoting green economy investments as a crucial measure for decarbonization. It equally correlates with (Akomolafe 2023) which similarly focused on deep decarbonization pathways in Sub-Saharan African cities.

The results reveal growing awareness, trends, investor preferences, and voluntary willingness as the driving factors. However, it was also noted that this varies significantly across institutions. The findings also highlight the importance of green and sustainability-linked bonds as effective financial instruments to

channel investments into decarbonization projects, showcasing their potential to drive Nigeria's sustainable development goals, as proven by their previous records.

However, so far, only green bond antecedents have been recorded. Hence, the future of sustainability-linked bonds is bright in a country such as Nigeria, considering its track record and growing nature in other parts of the world. This empirical finding validates the literature by (Park and Kim, 2020) advocate for developing green banking policy frameworks that include creating green financial products and supporting environmentally sustainable projects.

The study reveals significant insights into the role of Nigeria's banking sector in advancing decarbonization efforts, derived from both document analysis and interviews. The document analysis shows that Nigeria has established a robust regulatory framework supporting sustainable finance. Key policies, such as the Nigerian Sustainable Banking Principles, Climate Change Act, and SEC guidelines, urge banks to integrate environmental, social, and governance (ESG) factors into their operations. These policies provide a solid foundation for banks to support low-carbon projects and adopt green financial instruments. Regulatory support is germane in creating a conducive environment for sustainable investments, ensuring that banks are aligned with national and international climate goals. This result affirms the literature of Ojong et al. (2014).

The results further emphasize the role of innovative financial instruments in directing investments towards projects with low carbon emissions. Green bonds and sustainability-linked bonds have demonstrated efficacy in other regions and show substantial promise in Nigeria. These mechanisms not only attract investment but also provide banks with incentives to pursue environmental objectives. However, the results highlighted systematic corruption and governance issues as primary challenges hindering development projects and infrastructure. Additionally, the ineffective justice system and arbitration process fail to hold responsible parties accountable for the misuse or improper use of funds intended for these projects, which include mainly public authorities (politicians) and private entities such as banks (HEDA 2021).

Thus, properly implementing these financial instruments relies on transparency and solid regulatory frameworks to guarantee that the funds are used efficiently for their intended objectives. This discovery emphasizes the necessity for strict rules and monitoring systems to guarantee the effectiveness of sustainable finance programs.

Some of the interviewees also confirm that while some banks have made significant strides in incorporating ESG factors into their operations and investment decisions either based on regulatory recommendation or personal will, it was observed that others are still lagging due to limited capacity and resources. Thus, the disparity underlines the need for uniform strict standards and continuous capacity building to enhance the sector's overall commitment to sustainable finance. The importance of capacity building is further emphasized by the interviewees who highlighted the necessity for skill development in green technologies and sustainable practices across all sectors of the economy.

Likewise, the findings indicate that the banking sector is increasingly involved in supporting the country's journey to decarbonization. However, the results did not show whether the banks have stipulated rules or metrics in their lending portfolios that corporations must adhere to regarding their environmental and social obligations to qualify for loans or any form of financial dealings with them. For instance, the findings revealed that energy is the main driver of CO2 emissions, especially from oil and gas companies. What measures are in place to ensure corporations like oil and gas companies are given loans on conditions to cut off their carbon emission?

#### **5.4. Gap analysis: Nigeria v. International standards.**

Nigeria's sustainable finance framework has immensely improved in integrating environmental, social, and governance (ESG) aspects into its financial services sector. This becomes clear if the last decade's status must be compared to the current status quo. It is also way ahead as compared to its African counterparts considering the regulations, policies, and initiatives in place, and the volume of sustainable bonds issued, both sovereign and private. However, several gaps become evident and identifiable when benchmarked against international standards such as the Principles for Responsible Investment (PRI) or the European Union's Sustainable Finance Disclosures Regulation (SFDR).

##### **5.4.1. Identification of Gaps and Areas for Improvement in Nigeria.**

For instance, the EU framework, for instance, sophistication level, possibly offers both advantages and complications for financial service providers (Okere, 2023; Iliemena et al., 2023). Nigeria's approach to climate finance, specifically through innovative instruments like green bonds and carbon taxes, suggests a move towards international alignment while addressing local economic conditions and challenges (Climate Finance Landscape in Nigeria, 2023). However, the integration of social and governance dimensions remains less detailed compared to the EU, indicating potential areas for further development in Nigerian frameworks to enhance their international comparability (The EU Sustainable Finance Framework, 2022).

Thus, the regulatory environment in Nigeria, while emanating, still lacks the robustness and enthusiasm seen in more developed frameworks. International standards often feature stringent disclosure requirements that compel financial institutions to report on ESG aspects comprehensively. In contrast, Nigerian regulations do not mandate such detailed disclosures, leading to a lack of transparency and comparability.

Secondly, Nigerian institutions' adoption of international ESG standards is voluntary rather than mandatory. This contrasts with regions like the EU, where compliance with sustainability criteria is enforced through legislative measures. For example, Article 4 SFDR requires financial market participants to publish information about their policies on integrating sustainability risks in their investment decision-making process on their websites. Also, Article 6 obligates financial market participants to disclose how sustainability risks are integrated into their investment decisions and the expected impact on the returns of the financial products they offer. Article 7 discusses the disclosure of adverse sustainability impacts,

mandating that entities report on how their investment decisions impact sustainability factors. Article 8 of the EU Taxonomy Regulation Requires financial market participants offering financial products in the EU and large public-interest entities to include in their non-financial statement information on how and to what extent their activities are associated with economic activities that qualify as environmentally sustainable under the taxonomy.

This voluntary nature in Nigeria results in uneven adoption rates and potentially less rigorous implementation of sustainable practices. Hence, Nigerian Sustainable Banking Principles, Climate Change Act, and SEC Guidelines On Sustainable Financial Principles For The Nigerian Capital Market could have changed the narrative by making it mandatory.

Thirdly, in terms of risk management, international standards typically incorporate sophisticated methodologies to assess and mitigate ESG risks. These include stress testing and scenario analysis, which are not yet commonplace within Nigeria's financial sector. Such tools are crucial for understanding potential ESG impacts under various future conditions, a practice that Nigerian institutions could benefit from adopting.

Yet, another important aspect where regions like the EU distinguish itself from Nigeria is that capacity building and education on sustainable finance are more developed in the region. Financial institutions and stakeholders in the regions often have better access to training and resources that enhance their understanding and ability to implement ESG principles effectively.

## **5.5. Limitations and Future Research.**

The research study on the role of Nigeria's banking sector in the decarbonization journey was marred with several critical limitations, which hindered the depth and breadth of the research findings. One major limitation was the insufficient academic literature on the topic. Although few literatures like Akomolafe (2023) examined the decarbonization pathway in some African cities, including Lagos, Nigeria, the ones that focused on the banking sector or financial institution's role in the decarbonization goal remain scarce.

The semi-structured interviews, while valuable, also presented significant limitations. There was difficulty in securing participants, particularly from commercial banks, which were notably underrepresented. The number of participants intended to be interviewed was not met. This lack of diverse representation skewed the findings and limited the generalizability of the results. Moreover, technical issues during the interview process and the unwillingness of some participants to engage fully further impeded the data collection efforts. These factors, combined with constraints on time and finances, prevented the possibility of conducting on-site visits, which could have provided richer, more contextual data.

In future studies, numerous initiatives may be taken to address the constraints discovered in the research study on the role of Nigeria's banking sector in the decarbonization path. To begin with, conducting a study with a larger sample size might reveal more emerging patterns, enhancing the validation of findings and establishing more comprehensive patterns.

Expanding the range of scholarly literature by promoting increased study and publishing on this particular topic would establish a solid foundation for future studies. Working in partnerships with academic institutions and think tanks can facilitate the achievement of this target. Also, to address the problem of participant recruitment, it is recommended to establish ties with commercial banks and financial institutions at an early stage of the research project. This might encourage collaboration and increase the level of engagement.

Providing incentives or emphasizing the study's potential influence on company practices could help increase participation. In addition, utilizing technology to guarantee seamless interview procedures, such as employing dependable communication platforms and conducting comprehensive pre-interview briefings, can reduce technical problems and enhance the collection of data. Lastly, obtaining sufficient funds and allocating appropriate time for on-site visits could improve the contextual understanding of the study.

## **5.6. Recommendations.**

Given the results and identified limitations of the study, different recommendations may be put forward to improve the contribution of Nigeria's banking sector in supporting the decarbonization journey:

**Improvement of the Regulatory Framework:** There is a need for the regulatory frameworks to be strengthened to meet the target for sustainable finance and to provide clear guidelines and enforceable standards. This includes establishing specific regulations for green bonds and sustainability-linked bonds, ensuring transparency and accountability in the use of these financial instruments. Institutions such as the Securities and Exchange Commission (SEC) and the Central Bank of Nigeria (CBN) should enforce compliance with these standards to prevent greenwashing and ensure the effective use of funds. Lessons can be learned from the Kenyan Green Finance Taxonomy that was unveiled recently, aiming to increase the consistency of green finance flows and align green products and financial allocations with internationally recognized standards. Investors, issuers, and other participants in the financial sector can utilize it to manage, monitor, and showcase the credibility of their green activities more confidently and efficiently (KGFT 2024). But, with the current state of the framework in Nigeria, for instance, sustainable banking principles that came into force in 2012, it is almost right to say it is outdated because the area of sustainable finance evolves every day.

### **Enhancing skills and knowledge development on sustainability/sustainable.**

**Finance:** Implementing continuous capacity-building programs to enhance stakeholders' understanding of sustainable finance practices could be of the utmost importance, especially among the financial players, banks, investors, and other relevant stakeholders on the importance of ESG integration and the use of innovative financial instruments like green finance bonds, sustainability linked bond, and social bonds, among others. This can equally be extended beyond the aforesaid stakeholders. Raising awareness among the public about the benefits of sustainable financing is also crucial

**Innovative Financial Products:** Encourage the development and use of innovative financial products tailored to the needs of Nigeria's low-carbon projects. This includes green bonds, sustainability-linked bonds, and other financial instruments that can attract investments into renewable energy, sustainable agriculture, and infrastructure projects resilient to climate change. These products should be supported by government incentives and clear impact metrics to ensure their success and motivate the issuers.

**Improve Data Accessibility:** Given the role of data in acknowledging the state or progress in everything, it is paramount to create a centralized repository for sustainability-related data and documents to enhance accessibility and reliability. This database should include information on green finance projects, regulatory updates, and best practices. Improved data availability will support better decision-making and enable more comprehensive research on sustainable finance. It is also critical for transparency and accountability, as this could bolster investors' and issuers' confidence in channelling their investment to sustainability initiatives and projects.

**Addressing Investment Barriers:** It would be beneficial to develop targeted policies and financial incentives to overcome barriers to investment in energy-efficient technologies and low-carbon projects. This includes reducing high upfront costs, offering tax incentives, and providing subsidies or grants for green projects. There is also a need to create a conducive environment for foreign investors interested in green activities. This will promote large green investments nationwide and facilitate greater adoption of sustainable practices and technologies.

**Enhancing Stakeholder's Collaboration:** Nurturing engagement among diverse stakeholders, including government agencies, businesses, NGOs, and international organizations, will go a long way in decarbonization. The collaboration would enhance the effectiveness of sustainable finance initiatives by aligning financial strategies with national and international climate goals. This cooperation can also facilitate the sharing of best practices and the development of joint projects.

**Networking with renowned international bodies:** To improve its sustainable finance practices, the Nigerian banking sector should form partnerships with international networks, including the Net-Zero Banking Alliance (NZBA), UNEP Finance Initiative (UNEP FI), and the Global Alliance for Banking on Values (GABV). Nigerian banks can enhance their operations by participating in these networks, enabling them to incorporate sustainable finance practices, establish ambitious climate objectives, and conform to global standards. Through collaboration bodies such as Principles for Responsible Banking (PRB), Nigerian banks can include environmental, social, and governance (ESG) factors in their lending and investment choices. Through active engagement with the Sustainable Banking Network (SBN) and the Partnership for Carbon Accounting Financials (PCAF), individuals and businesses can avail themselves of a diverse array of tools and resources that are specifically tailored to measuring and efficiently managing their carbon emissions. Collaborating with these foreign projects can enhance the exchange of knowledge, improve risk management, and promote transparency, ultimately advancing a more sustainable and resilient banking

sector in Nigeria. Beyond these private bodies, regional banking institutions like the European Investment Bank (EIB) could help the country as in the case of Kenya.

**Strengthen Enforcement Mechanisms:** While there are existing regulations and guidelines in place to ensure sustainable banking operations in the country, enforcement mechanisms seem to be weak or inactive. Hence, improving the enforcement of existing regulations to ensure compliance with sustainable finance guidelines could mean a lot to arrive at a decarbonization destination. This should involve enhancing the capacity of oversight bodies to monitor and enforce regulations effectively as this will help build trust in financial markets and encourage greater investment in sustainable projects.

**Infrastructure Development:** While the studies focus mainly on the banking sector, the government as a stakeholder holds the potential to ensure that primary green infrastructures are in place to facilitate initiatives. Investment in the development of infrastructure to support renewable energy and electric vehicles. This includes improving the energy grid, building charging stations for electric vehicles, and supporting renewable energy projects. Adequate infrastructure is essential for these technologies' successful adoption and effectiveness in reducing carbon emissions. While these recommendations are not definitive, implementing them would bring about positive changes in Nigeria's banking sector, enhancing its pivotal role in its decarbonization efforts, supporting sustainable development, and contributing to global climate goals.

**Strengthen Judicial and Arbitration Process:** Strengthening the justice system and arbitration processes is essential for ensuring that stakeholders in development projects and infrastructure act justly and fairly. This facilitates smooth project execution. Even with the availability of sustainable finance for projects aiming at decarbonization, its effectiveness may be compromised without a robust judicial framework. Judicial support for green initiatives can drive innovation and the adoption of clean technologies. Strengthening judicial and arbitration processes ensures a stable and predictable legal environment, which in turn attracts the required finance and expertise for large-scale infrastructure projects. The presence of legal stability is essential for the successful implementation of long-term policies that prioritize sustainable development and the curbing of carbon emissions. This, in turn, contributes to the promotion of a more stable and greener global economy.

## **5.7. Summary**

In conclusion, this study explored the role of the Nigerian banking sector in the country's decarbonization efforts with a specific focus on the issuance of green and sustainability-linked bonds and the said banks' involvement in low-carbon initiatives. The key findings indicate a growing involvement of banks in low-carbon projects, mostly due to regulatory frameworks such as the Nigerian Sustainable Banking Principles and the Climate Change Act, SEC guidelines, and to some extent, global trends and voluntary will. Nevertheless, adopting certain practices differs due to disparities in capacity among institutions.



The analysis highlights discrepancies in Nigeria's adherence to global standards, underlining the necessity for a more stringent regulatory framework, improved ESG disclosures, and effective enforcement procedures. The studies encountered some limitations such as limited literature, underrepresentation of participants especially from the banking sector. The study proposes certain recommendations which are believed to have the potential to address some of the challenges identified by the research. They include enhancing regulatory frameworks, exploring innovative financial products, enhancing data accessibility, transparency, accountability and promoting stakeholder collaboration. The studies suggested that acknowledging these factors may aid the country in improving its sustainable finance practices, bringing them in line with international standards and general climate targets.

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## Appendices

### Appendix 1: Recruitment Letter.

#### Recruitment Letter

Dear [participant],

My name is John Manuwa. I am a student of master's degree in law, Digital Innovation and Sustainability at LUISS University in Rome, conducting research under the supervision of Prof. Riccardo Sallustio and Prof. Christian Iaione in the Department of Law.

I am writing to you about our current research on the role of the banking sector in Nigeria's decarbonization journey. The research project is entitled "**The Role of the Banking Sector in Nigeria's Decarbonization Journey: Investment in Low Carbon Projects and Bond Strategies**". The purpose of this research is to explore how banks can support the country in its decarbonization efforts by investing in low-carbon projects and effectively utilizing financial instruments such as green bonds and sustainability-linked bonds to support climate action goals.

I am contacting you as [Institution/Organization/Individual] is an excellent fit to be a part of this research project. I would like to seek your participation as an interviewee for this study. This participation entails a 30-minute interview, either in person or over the phone, at a time convenient for you. You will be asked questions about the integration of environmental, social, and governance (ESG) factors in banking practices, innovative bond structures, and financial mechanisms driving investment towards low-carbon projects.

For more information about the study, please see the attached synopsis of the study.

Please reply to this email ([john.manuwa@studenti.luiss.it](mailto:john.manuwa@studenti.luiss.it)) if you are interested in participating and indicate at any time you are available for an interview within the next few weeks.

Thank you for taking the time to read this email and for your consideration.

Sincerely,

John Manuwa  
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LUISS University, Rome  
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## **Appendix 2: Synopsis of the research study**

### Research Area: Green and Sustainable Finance

Title: The Role of the Banking Sector in Nigeria's Decarbonization Journey: Investment in Low Carbon Projects and Bond Strategies.

#### Introduction

This study aims to study the important role that the banking sector in Nigeria can play in supporting the nation's commitment to decarbonization, with a particular focus on the deployment of capital towards low-carbon projects. This research will investigate how financial instruments, such as green bonds and sustainability-linked bonds, can be effectively utilized by banks and other financial institutions to further climate action goals. Given the critical imperative to combat climate change, this study proposes that the financial sector is uniquely positioned to drive significant progress in achieving these objectives.

#### Background

Nigeria, a developing nation with a rapidly growing economy, faces significant challenges in its journey towards decarbonization. Nigeria contributes to global carbon emissions due to its high reliance on fossil fuels, especially in the energy sector. Fossil fuel financing in Nigeria continues to dominate. Its financing remains prevalent in Nigeria. From 2016 to 2021, the country ranked second in Africa for the quantity of fossil fuel projects financed (Stout, S., & Meattle, C. 2022). Of these, one Liquefied Natural Gas (LNG) project received USD 2.77 billion in funding alone, more than the total amount of climate finance tracked in 2019/2020 (Geuskens & Butijn, 2022).

However, the country is also highly vulnerable to the impacts of climate change, including extreme weather events, rising sea levels, and agricultural disruptions. Findings by USAID (2023) show that rising sea levels are the most fantastic driver of flooding and waterborne disease in the country. Drought and global warming also impair fisheries and agricultural output, which lowers food security and has a detrimental effect on nutrition and health.

In recent years, there has been a global push towards reducing carbon emissions and transitioning towards a low-carbon economy. Regardless of its vulnerabilities, Nigeria, as a signatory to international agreements such as the Paris Agreement, is committed to mitigating climate change and reducing its carbon footprint. This necessitates a comprehensive approach involving various sectors, including the banking sector. The banking sector is crucial to Nigeria's decarbonization journey through investment decisions and financial strategies.

#### Research Questions/Objectives

- i. What are the key factors influencing the banking sector's investment decisions in low carbon projects in Nigeria, and how do these decisions impact the country's decarbonization efforts?

- ii. What are the potential synergies and conflicts between the goals of profitability for Nigerian banks and their role in promoting decarbonization through investment in low carbon projects and bond strategies?
- iii. How does the involvement of various financial and non-financial institutions in the green bonds market in Nigeria influence the distribution of capital towards decarbonization initiatives?
- iv. How well is Nigeria doing to meet up with its commitment to international treaties and agreement regarding climate change?

### Methodology

This study employed a qualitative approach, evaluating both primary and secondary data. The primary data will consist of semi-structured interviews conducted with selected stakeholders from relevant institutions to gain insights into their perspectives, opinions, and knowledge regarding how banks should rethink and reconsider their dealings with clients, especially in terms of loans or any transactions involving businesses or corporations. Meanwhile, the secondary data will involve an examination of existing literature, scholarly articles, newspapers, policy books, and other pertinent information from reliable sources.

### Expected Contribution

- The banks might use the findings of this study to identify gaps in their dealings using international benchmarks and to improve their performance vis-à-vis decarbonization commitment.
- The study will help the banks on how they can integrate environmental criteria into lending practices, enhancing sustainability across financial operations.
- It will offer support for policymakers in crafting effective climate change mitigation policies, aligning financial strategies with environmental and social objectives.
- It will help the climate change experts and activists identify how far has Nigeria as a member to Paris agreements and Kyoto protocol meeting up with its commitment regarding 1.5 degree by 2030.
- It will contribute to Nigeria's transition to a sustainable, low-carbon economy through informed financial decisions, bond strategies and policy framework.
- Finally, but most importantly, this study holds significant importance for academia and scholarship.

### Invitation for Participation

We invite participants from relevant institutions to share their perspectives and experiences on the designated topic, research question, and objectives of the study. Participation involves a confidential interview, which will be scheduled at a time convenient for each participant. All information shared will be used to inform opinion and kept confidential, and participants will have the opportunity to review and provide feedback on the findings. Names of participants will remain anonymous unless they agree to be named and quoted. The interview will consist of a few questions based on individual perspectives, experiences, and knowledge regarding the topic, and will last no more than 30 minutes.

### Possible Questions of discussion

1. How do you perceive the level of awareness and commitment among Nigerian banks towards integrating environmental, social, and governance (ESG) factors into their lending and investment decisions? What steps can be taken to further promote ESG integration within the banking sector?
2. In your opinion, what do you think would be the future contribution of Nigerian banks in facilitating the country's shift towards a low carbon economy? Do you foresee any upcoming trends or efforts that will significantly influence their behavior vis-à-vis lending or investment decision? (For instance, regulatory changes, mandatory sustainability reporting)
3. Innovative bond structures and financing mechanisms (Green and sustainability linked bonds) have become increasingly important in driving investment towards low carbon projects. How might these strategies be replicated to meet the unique economic and environmental challenges in Nigeria? What measurable impacts have these financial mechanisms had on advancing decarbonization efforts within regions that have successfully implemented them?
4. Do you think international bodies like the International Renewable Energy Agency (IRENA), World Bank, International Energy Agency (IEA), Green Climate Fund (GCF), among others, are doing enough to help developing economies in their quests to decarbonize or meet the Paris Agreement in a broad sense?

NB: Not a direct question requiring direct answers but rather a discussion where views can be shared. Thank you!

Your insights are incredibly valuable to us, and I look forward to a thoughtful and open discussion. Please share any of your experiences or perspectives that might enrich our understanding. Thank you again for your time and contribution. If you have any questions before our meeting, please contact me.

Best regards,

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