



Climate Change Adaptation in Nigeria: Strategies, Initiatives, and Practices

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Summary

Nigeria is the most populous African country and one of the top ten most vulnerable to climate change, which is exposing tens of millions of people to climate and disaster risks. Climate change in Nigeria is most visible in form of drought, flooding, sea level rise and erosion, resulting in damaging outcomes such as lower crop yields, food insecurity, deepening poverty, forced displacement and conflicts, to name a few. To adapt to these negative impacts and to build climate resilient communities, Nigeria's current adaptation must be assessed to inform and support inclusive, effective, and sustainable actions. This paper frames the key issues regarding adaptation in Nigeria. It emphasises the need to assess coherence between adaptation provisions in the Nationally Determined Contributions and other national endeavours in Nigeria. It also outlines the country's high vulnerability issues, projected impacts, and current limitations. The paper makes a case for adopting locally led adaptation as a sustainable approach, i.e., adaptation that is inclusive, gender responsive and considers the synergies with other development agenda while also providing value for scarce resources.

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1. Introduction and Country Background

Nigeria is Africa's most populous country with 211 million people, as estimated by the World Bank in 2021. It is also an oil-producing country, with crude oil accounting for over 80 percent of exports, a third of banking sector credit and half of government revenue.

Nigeria's debt¹ to GDP ratio is 23.27%, and rapidly rising each quarter with increased borrowing and a sluggish economy.² It has a B' sovereign credit risk rating³ from Fitch Ratings.⁴ Economic growth has fluctuated between 0.8% and 3.6% over the last five years and has sometimes dipped below zero.⁵ In 2020, the country experienced its worst recession in two decades following the outbreak of the COVID-19 pandemic, which disrupted global trade and led to falling oil prices.⁶ The GDP was valued at USD 440 billion (EUR 440 billion) or USD 2,085 (EUR 2,085) per capita for 2021.⁷ The rate of unemployment is estimated to be 33.3%⁸ and the inflation rate is at 20.5%.⁹ Approximately 54% of the population has access to electricity, leaving over 97 million people with no access;¹⁰ access to clean energy is pegged at 15%, meaning almost 180 million people have no access to modern and clean cooking technologies.¹¹

2. Climate Change Impact and Vulnerability

Climate change is widely considered to disproportionately affect Africa, with the rate of temperature rise and its attendant impacts, such as desertification, coastal erosion, loss of biodiversity and saltwater intrusion, increasing faster than on average throughout the world.¹² In 2016, Verisk Maplecroft ranked Nigeria as the 7th most

vulnerable country in the world.¹³ Similarly, in 2021, Nigeria's vulnerability to climate disasters and its adaptive capacities ranked 161 out of 182 countries assessed by the Notre Dame Global Adaptation Initiative (ND-GAIN)¹⁴. Nigeria is particularly exposed to climate impacts because of its large population, extensive coastline, limited resources to adequately finance climate from both the public and private sector entities and an adaptation knowledge gap.

The country is currently facing challenges in the form of complex, direct and indirect impacts such as food insecurity, forced displacement, conflict, negative health outcomes and more, which cumulatively constitute barriers to climate action and economic growth. Specifically, droughts and desertification in the arid and semi-arid regions of northern Nigeria have disproportionately affected local communities that engage in rain-fed agriculture. Droughts and desertification are resulting in nomadic animal-rearing communities moving from north to south and clashing with indigenous crop-farming communities over increasingly scarce resources. These nomadic cattle herders also bring with them zoonotic diseases that can be exacerbated by climate change.¹⁵

As far back as 2012, the country was already suffering from variability in the climate and high-intensity rainfall events in the central and southern regions, which led to perennial flood disasters with total losses and damages of about USD 16.9 billion (EUR 16.9 billion).¹⁶ Currently, floods (river and urban) and other climate-change-related disasters in the country are also leading to an increase in disease incidence, mostly vector-borne diseases such as malaria, which caused 200,000 deaths in 2021, 32% of total global

malaria deaths, and affected a total of 60 million Nigerians.¹⁷ There is also an increasing risk of waterborne diseases such as cholera. In other parts of the country, a combination of droughts, saltwater intrusion and sea level rise has adversely affected crop yields and urban infrastructure, leading to rising food prices, cost of development and other linked effects. Crop yields are particularly sensitive to changes and climate variations as they are affected by multiple factors and agriculture is largely rain-fed; only 1% of farmland is irrigated across the country¹⁸ with over 70% engaging in subsistence agriculture, which accounts for nearly 23% of GDP.¹⁹ Econometric analyses estimate that Nigeria stands to lose between USD 100 billion (EUR 100 billion) and USD 460 billion (EUR 460 billion) if it fails to adequately adapt to climate change by 2050.²⁰

These vulnerabilities continue to persist and hurt the lives and livelihoods of Nigerians, despite Nigeria being a signatory to the Sendai Framework for Disaster Risk Reduction 2015 – 2030 (SFDRR).^{21,20} The Sendai Framework for Disaster Risk Reduction is a programme aiming to significantly reduce disaster risks and losses in lives and livelihoods, increase the health of communities and countries and build resilience to disasters through implementing priorities such as understanding disaster risk and strengthening and investing in disaster risk governance. Through these aims, it targets reducing mortality, direct economic loss and damage to critical infrastructure and substantially enhances global cooperation and access to early warning systems.²² This mis-match between persisting vulnerabilities and the signature to the Sendai Framework seems to indicate a gap between signed agreements and the sufficiency of projects designed and implemented across the country.

3. Status and Trends of Climate Action: Policies, Strategies, and Implementation Frameworks for addressing Climate Change

In Nigeria, climate change adaptation is belatedly emerging as an important frontier for action, with the potential to improve livelihoods and health and build resilient communities. The Federal Government's adaptation policies, laws, frameworks, and strategies include Nigeria's updated Nationally Determined Contributions 2021 (NDCs), the 2021 Climate Change Act, the National Climate Change Policy, the National Adaptation Plan (NAP), the Long-Term Vision (LTV), the Medium-Term National Development Plan (MTNDP), the Biennial Update Report (BUR) and other national and sub-national plans. The NAP Framework²³ is a precursor to the government's main adaptation agenda and outlines its goals to align the country's adaptation activities with the Cancun Adaptation Framework.²⁴ The Framework also provides a guide for building adaptation practice coherent with Nigeria's economic goals and context. The Framework comes with multiple ensuing co-benefits and key considerations that include community-based adaptation, ecosystem-based adaptation, a gender-responsive NAP process and the recognition of climate change as a cross-cutting issue with likely trade-offs.

While the Nigerian government has formulated a NAP framework, no record has been made of how it is used and implemented to reduce vulnerability at the community level. However, efficient delivery of adaptation is of utmost importance to

Nigeria because of its described exposure to climate extremes – and its marginal greenhouse gas emissions implies that mitigation, although important, ranks lower than adaptation as a national priority.

Climate Change Governance

Nigeria's government is organised into three tiers: federal, state and local governments. Local governments, as the name implies, are the most localised form of government interacting directly with the grassroots – these local, and their larger state governments have departments with the responsibility to promote relevant development agendas. While these agendas may include climate adaptation practices through already existing extension services, they are often not aligned with NAPs, are poorly funded, and lack adequate skilled personnel.

The scant adoption of adaptation frameworks and instruments at the sub-national level means that the majority of the projects are developed and delivered by the Federal Ministry of Environment, which maintains an oversight over frameworks and legislation concerning climate change adaptation and other environmental concerns, even for projects implemented at the local level.

At the ministerial level, governance is led by a politically appointed cabinet minister, who must then provide leadership to and work with public servants in the Nigerian civil service at the Directorate level. The personnel at that level includes inter-ministerial roles, diplomatic and climate negotiation roles, as well as committees formed at several national and sub-national levels to tackle specific programs.

Climate Adaptation Project Landscape

The most comprehensive adaptation projects in Nigeria in recent years include:

1. The World Bank assisted Nigeria Erosion and Watershed Management Project (NEWMAP), which was designed in collaboration with the Federal Ministry of Environment to tackle the menace of gully erosion in south-east Nigeria and other forms of land degradation in northern Nigeria. The project was approved in 2012 and the World Bank committed approximately USD500 million (EUR500 million) to it. It comprised of three main facets: (a) Gully Rapid Action and Slope Stabilization (GRASS) (b) Integrated watershed management and (c) Adaptive livelihoods and was implemented in nineteen (19) states of Nigeria.²⁵
2. The Building Nigeria's Response to Climate Change (BNRCC) project, which was a five-year project that started in 2007 and undertook research on vulnerability (current and future), and awareness and pilot projects, mainstreaming gender throughout the project lifecycle. The BNRCC cost USD 4.9 million (EUR4.9 million), was funded by the Canadian International Development Agency (CIDA) and resulted in the development of the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) in collaboration with the Federal Ministry of Environment. The pilot projects were developed with the following goals: utilizing improved varieties to improve food security, providing fuel efficient wood stoves, proposing aquaculture as an alternative source

- of income and weaning communities off forest products, improving access to water sources and rehabilitating ecosystems by planting trees.²⁶
3. The Great Green Wall, which is currently being implemented across twenty-two countries with facets of forestry, water management and energy. The overarching goal is to grow 8,000km of forest across 100 million hectares of degraded land by 2030 to tackle persistent droughts, food insecurity, migration, and conflict. Launched by the African Union (AU), it is currently implemented by a partnership of the United Nations Convention to Combat Desertification (UNCCD), the Food and Agriculture Organisation (FAO), the World Bank, the Global Environment Facility (GEF), the International Union for Conservation of Nature (IUCN), the Green Climate Fund (GCF) and several other organisations. The project is estimated to have achieved 15% of its goals and, after its completion, will have led to the largest living system on earth.²⁷

Other projects and initiatives include the following:

4. The Africa Development Bank's (AfDB) newly launched USD25 billion (EUR25 billion) Africa Adaptation Acceleration Program (AAAP) in collaboration with the Global Centre on Adaptation (GCA). Eventually, the AAAP will unlock financing from African governments, investors, foundations, resilience bonds and debt for climate adaptation swaps.²⁸
5. Adapting to climate change in the Lake Chad Basin funded by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The project is focused on providing adaptation solutions and best practices to 1,100 villages in the region and in bordering countries. The five-year project undertaken

from 2013 – 2018 specifically targeted improvement in food security.²⁹

6. The UK Foreign, Commonwealth and Development Office (FCDO) and the United States Agency for International Development (USAID) have also supported the development of knowledge products, country reports, climate risk resources and research across Nigeria.
7. Additionally, in 2021, the World Bank launched a NEWMAP successor in the Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL). This project is a \$700 million (EUR700 million) project targeted at improving landscape management in northern Nigeria. The project comprises four components phased sequentially aiming to address the challenges of large-scale watershed degradation in northern Nigeria, improve community climate resilience, strengthen institutional capacity and enable institutional and policy foundation for multisectoral integrated landscape management and climate resilience and, lastly, to install a financing mechanism available to borrowers in investment project financing operations and, thus, to enable quick deployment of uncommitted funds to respond to eligible crises or emergencies.³⁰

4. Trends and Overview of Climate Finance

Financing adaptation is a critical issue globally, and Nigeria is no different. Climate adaptation projects in Nigeria have been funded mostly by international organisations, even if implemented at national and sub-national levels. Like most nations in Sub-Saharan Africa, Nigeria relies on foreign loans, aid and grants to finance more than 50% of its climate adaptation and mitigation activities.³¹ A significant percentage

of the project costs are borne by multilateral financial institutions (MFIs), mostly the World Bank and, to a lesser extent, the AfDB. Other notable international donors to adaptation efforts in Nigeria include GIZ, FCDO and USAID. Adaptation finance from the Nigerian government and the private financial sector has yet to match that level of effort or cover the funding gap associated with building resilience.

5. Gaps and Shortcomings of Current Climate Action

The major challenge facing the delivery of climate change adaptation in Nigeria is that the topic has yet to feature in the mainstream national discourse. The requisite frameworks critical for providing guidance and systematic support for planning, implementing, and administering adaptation practice are only just being developed. In the absence of a generally accepted, if not ubiquitous, adaptation process, adaptation practice is characterised by independent endeavours from local communities, international organisations, and government agencies.

The other pervasive concern connected with climate adaptation in Nigeria is the limited political will to confront it as a critical national issue and the consequent limited financing of such endeavours. Both public and private sector funding for adaptation falls far short of the amounts necessary to tackle the ever-increasing risk of an unfolding climate emergency, even if one ignores that this funding is arguably untenable without the prior establishment of a proper framework. The absence of citizens demanding improved environmental governance is also a limiting factor. As earlier stated, these demands have been on the rise along with greater climate change awareness around the country, both of

which are precursors to the proliferation of national political debates on adaptation.

As a result of the factors above, collaboration is limited between ministries and government agencies with different roles in climate change administration, and science-based targets are yet to become mainstream enough to validly inform planning and legislation. Furthermore, communities generally lack access to financial resources (credit, insurance and advisory), adequate environmental governance (an enabling policy environment, political will, subsidies, and incentives), improved farm input, energy and justice and fair legal recourse. This lack of access constitutes a significant constraint. The challenges suggest the need for a different approach to climate action, and climate adaptations more specifically, that aligns with the needs and aspirations of Nigerians and affects the broader national policy priorities.

6. Potential Role of Locally Led Adaptation in Nigeria

The recognised limitations in resource allocation together with Nigeria's high vulnerability make it important that climate adaptation is properly understood and managed. Simply put, without a robust adaptation response to climate change, Nigeria's economic growth will record minimal gains, if at all, and the country will have to contend with a myriad of externalities that will likely spiral into complex social issues, including ones at the regional and local levels. While several actors have developed adaptation policies and implementation strategies, the adequacy and efficiency of those policies and strategies are yet to be evaluated in a way that provides evidence for improvement and broader climate action, including the

recognition, documentation and inclusion of local voices and on-going adaptation strategies and practices. The bottom-up approach of Locally Led Adaptation (LLA) provides an opportunity that could play a significant role in unlocking the potential and benefits of climate action in Nigeria especially at the local level, where such actions are urgently needed. LLA, defined as adaptation led by local communities to achieve adaptation that is equitable, efficient, and transparent,³² encompasses eight principles developed by the Global Commission on Adaptation in 2021, principles that serve as guides for its promotion. At their core, these principles enshrine the concepts of inclusivity of local stakeholders and marginalised groups, improved understanding of climate risk, meaningful and consistent funding, transparency, and collaboration.³³ However, local community's needs, priorities and values must also be understood to ensure that those principles are aligned with the realities and aspirations of the target population.

The impact climate change is having on the Nigerian economy and the projected increase in the intensity of negative impacts on lives and livelihoods, mean that LLA holds the most promise for far-reaching and sustained solutions. LLAs have many advantages, from improving lives and livelihood opportunities and building resilience communities to giving communities the tools and resources needed to live in a warmer world. A properly adapted economy will be able to recover faster and provide more returns for every dollar invested, which, according to the UN, can be up to six dollars for every dollar invested.³⁴ These savings are invaluable for financially constrained nations such as Nigeria. Generally, a well-adapted nation provides a vibrant ecosystem for

communities to thrive by building businesses and livelihoods, adopting clean energy systems, mitigating social issues and their precursors, advocating for cleaner and safer environmental policies and laws, and thereby improving the overall wellbeing and life expectancy of the entire population.³⁵

7. Potential Role and Value of New Research to Enhance Adaptation Activities in the Country

Despite the potential positive role of LLAs for Nigerians, more research is needed to understand the current provisions of adaptation policies and strategies in national and regional policies as well as their implementation at the local level. It is critical to comprehend how local communities understand and cope with the current impacts of climate change, as this comprehension can improve, promote and support already existing local initiatives. Moreover, such knowledge can be used as an entry point to initiate and speed-up national climate adaptation action by ensuring that policies are aligned with the needs and priorities of most Nigerians.

The ongoing research that informs this working paper is designed to generate knowledge to improve policy coherence and mainstream climate adaptation action by:

- Aiding the work of already existing and new entrants into the Nigerian adaptation space
- Supporting Nigeria's efforts to balance climate action with the goals of economic development, job creation and sustainable economic development.
- Ultimately, all the above, to play a key role in national development and economic growth.

Efficient adaptation can reduce government spending, saving critically limited government budgets. For communities living in dire conditions and plagued with poverty and the threat of ensuing climate change impacts, adaptation solutions

that are efficient and implemented with multiple goals in mind could not be timelier. This project will provide a guide for future projects to leverage in delivering on improved LLA activities and inform further studies and actions on the topic.

List of Abbreviations

AAAP	Africa Adaptation Acceleration Program	GRASS	Gully Rapid Action and Slope Stabilization
ACReSAL	Agro-Climatic Resilience in Semi-Arid Landscapes	IUCN	International Union for Conservation of Nature
AfDB	Africa Development Bank	LLA	Locally Led Adaptation
AU	African Union	LTV	Long Term Vision
BNRCC	Building Nigeria's Response to Climate Change	MFIs	Multilateral Finance Institutions
BUR	Biennial Update Report	MTNDP	Medium Term National Development Plan
CIDA	Canadian International Development Agency	NAP	National Adaptation Plan
COP	Conference of Parties	NASPA-CCN	National Adaptation Strategy and Plan of Action on Climate Change for Nigeria
COVID-19	Coronavirus disease caused by the SARS-CoV-2 virus.	ND-GAIN	Notre Dame Global Adaptation Initiative
FAO	Food and Agriculture Organisation	NDCs	Nationally Determined Contributions
FCDO	Foreign, Commonwealth and Development Office	NEWMAP	Nigeria Erosion and Watershed Management Project
FCT	Federal Capital Territory	SFDRR	Sendai Framework for Disaster Risk Reduction
FGN	Federal Government of Nigeria	UNCCD	United Nations Convention to Combat Desertification
GCA	Global Centre on Adaptation	USAID	United States Agency for International Development
GCF	Green Climate Fund		
GDP	Gross Domestic Product		
GEF	Global Environment Facility		
GIZ	German Agency for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit)		

Notes

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