

Climate Change Interventions and Sustainable Economic Development in Nigeria, A Case for Ingenious Approach

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ABSTRACT

Climate change has continued to pose a huge threat to humanity as both lives and livelihoods are subjected to its effects globally. Consequently, the United Nations have rallied state actors annually since 1994 to seek ways of mitigating the adverse effects of climate change. A major outcome of these meetings is the Paris Agreement of 2015. Part of the provisions of this agreement is the commitment by the industrialized countries to provide USD100 billion annual intervention to the developing countries, to facilitate the achievement of their Nationally Determined Contributions (NDC) targets. The extent to which Nigeria has accessed these interventions from the industrialized countries and the development partners towards achieving these NDC targets is the focus of this study. The study therefore was guided by this research question: how have the climate change interventions from donor agencies and development partners impacted Nigeria's sustainable economic development? Descriptive Research design was adopted for the study. The documentary method of data collection and content analytical method were used to generate and analyze data for this study. The study found that interventions accessed by the Nigerian state came predominantly as foreign loans. These loans imposed heavy debt burdens on the country's economy. The study recommends that Nigeria should be inventive and inward looking in her quest for sustainable development.

Keywords: Climate change, Paris Agreement, Sustainable development.

INTRODUCTION

Climate change is such a huge challenge to humanity that both state and non-state actors in the international arena consider it a grave threat to lives and livelihoods in the 21st century. It is not bound by space or geography; hence, it transcends national boundaries as it ravages the global community in very many forms. The global warming, ravaging flood and storms, droughts, violent cyclones and extreme weather conditions affects all countries of the world and the entire ecosystems adversely in different ways. Consequently, United Nations (2021) pointed out that the threats of climate change, occasioned by the rising temperature of the Earth's atmosphere include rising sea levels, ecosystem collapse and more frequent and severe weather conditions.

Though scholars have noted that climate change, to some extent result from natural causes which include; changes in the sun, emissions from volcanoes, variations in Earth's orbit and levels of carbon dioxide (Haider, 2019; Ebele and Emodi, 2016), there is a consensus that human activities engineer it the most. It is

therefore imperative to devise means to curb those human activities that aggravate climate change. It is on this strength that the global body, the United Nations made concerted efforts to bring member countries together, to commit to actions aimed at reversing or at least, mitigating climate change effects across the globe. Member countries have been meeting annually to review steps already taken and strategize further for the future. From 1995 to 2023, we have had twenty-eight (28) annual 'Conference of Parties' (CoP) on climate change. The idea is to sensitize the global community on the imminent danger posed by climate change and work together for solutions. The threats posed by climate change menace have diverse ramifications, ranging from health, to the economy.

Accordingly, World Health Organization (2022) pointed out that the phasing out of polluting energy systems, or the promotion of public transportation and active movement, could both lower carbon emissions and cut the burden of household and ambient air pollution, which causes about 7 million premature deaths per year. These are clearly blamed on climate change. Climate change, is blamed for the rising temperature across the globe, extreme and unusual weather conditions, incessant droughts, flooding, violent cyclones, storms and many other adverse climatic conditions. Consequently, unwarranted deaths have resulted from these in several countries of the world, Nigeria inclusive.

Economic investments have also been destroyed and the entire ecosystem gravely threatened. At the opening plenary of the High Level Segment of CoP22 held at Marrakech- Morocco, 2016, the Nigerian former President, Muhammadu Buhari (2015-2023) pointed out that climate change has taken serious tolls on the Lake Chad as it has shrunken to a mere 10% of its original size with negative consequences on the livelihood of more than 5 million people (Vanguard, Nov. 28, 2016). Former President Buhari also noted that the impact of climate change is also being felt by the more than 2.1million Nigerians displaced by devastating floods suffered since 2012.

Nigeria is an oil dependent nation which is also ranked as one of the most vulnerable countries as long as climate change is concerned. Nigeria has been struggling to diversify its economy through increased investments and support to the agricultural sector. Climate change remains a big threat to the agricultural sector which contributes the most to Nigeria's GDP. The Nature Conservancy (2018) observed that from straining agricultural systems to making regions less habitable, climate change is affecting people everywhere. This is even more factual when the agricultural sector is central to the country's economic viability. Climate change therefore equally poses a grave threat to lives and livelihoods in Nigeria. The World Health Organization (2021) predicted that between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year from malnutrition, malaria, diarrhea and heat stress alone. It noted that areas with weak health infrastructure, mostly in developing countries, will be the least able to cope without assistance to prepare and respond. Muhammadu Buhari (GCFR), therefore, while highlighting the losses and damages caused by the recent increasing floods in several parts of Nigeria as well as in Pakistan, Bangladesh and other parts of East and Southern Africa, rightly described climate change as one of the biggest challenges facing humanity (Premium Times, Sept. 28, 2022). He noted that it is complex and dynamic, and requires multidimensional and multi-sectoral initiatives to address its impacts and avert its rapid advance.

Evidently, Nigeria's climatic conditions have witnessed some changes. This is manifest in the rising temperature; variable rainfall; rise in sea level and increased flooding; incessant droughts; deforestation; land degradation; and more frequent extreme weather events which affect fresh water resources and biodiversity (Haider, 2019; Ebele and Emodi, 2016; Olaniyi et al, 2013). Haider (2019) also explained that the duration and intensity of rainfall have increased, producing large runoffs and flooding in many places in Nigeria. For him, precipitation in Southern Nigeria is expected to rise and rising sea levels are expected to exacerbate flooding and submersion of coastal lands. He also pointed out that drought have also become a constant issue in Nigeria, and are expected to continue in northern part arising from the decline in

precipitation and temperature rise. The fading out of Lake Chad tends to lay strong credence to this. All these point to grave threats to the economy and lives of the people.

All the annual conferences organized by the United Nations Framework Convention of Climate Change (UNFCCC) targeted at articulating policies that could stem the tide of climate change produced a few action plans for member countries. However, the 'CoP3' Kyoto Conference (1997) which produced the Kyoto protocol, the Copenhagen Conference of 2009 'CoP15' which produced the Copenhagen Consensus and the Paris Conference (2015) which produced the Paris Agreement clearly stand out. The refusal of many developed countries to ratify the Kyoto Protocol and the fact that the Copenhagen Consensus failed to extract commitments to emission reductions prevented them from achieving significant results. Countries of the world however, continued to meet under the auspices of the 'UNFCCC' in search of better ways of tackling the menace of climate change. The Paris Agreement which proffered policy adjustments as regards reducing greenhouse gas emissions, energy transition technology and commitments to climate-friendly economic activities as encapsulated in every country's Nationally Determined Contributions (NDC) remains a point of reference for addressing climate change by member countries. The industrialized countries, vide this agreement, committed to assisting the developing countries in pursuing their country specific NDC targets, which are essentially geared towards reducing greenhouse gas emissions and pursuing sustainable economic development. This agreement was signed by Nigeria on 22nd of September, 2016. The extent to which Nigeria has accessed the international climate finances arising from this and its impacts on her economic development as indicated in Nigeria's NDCs is the focus of this study.

The researcher therefore was guided by the following research question

- How have the climate change interventions from donor agencies and development partners impacted Nigeria's sustainable economic development?

Research Design

The study adopted the Descriptive Research design. The documentary method of data collection and content analytical method were used in generating and analyzing data for this study.

INTERNATIONAL CLIMATE FINANCIAL COMMITMENTS AND NIGERIA'S CLIMATE ACTIONS

Here, the researcher tried to interrogate the availability of international climate finances for climate actions by the Nigerian state. The study focused on interventions from the donor agencies, the World Bank, the Africa Development Bank (AFDB) and the European Investment Bank (EIB).

Clearly, Nigeria, alongside other developing countries, benefited from international climate financial supports from donor agencies and the development partners. OXFAM (2022) noted that between 2013 and 2019, Nigeria received an average of \$407 million per year in international public climate finance. However, the study pointed out that 62% of the funds declared by donor agencies within this period have been loans, which will have to be repaid with interests, thereby aggravating the debt burden in the country. The study further pointed out that African countries have little confidence that donors will honor their repeated promises to mobilize \$100billion a year for climate actions in developing countries. Again, OXFAM (2022) observed that the World Bank used 94% of their climate financing in Africa as loans, France also used 94% of the climate finances to Africa as loans. Japan used 84%, the African Development Bank (AFDB) used 83% while the European Investment Bank (EIB) used 79% as loans. These high percentages of loans from the donor agencies are pushing the benefiting states deeper into debts and rendering them incapable of contending with the debilitating existential challenges. This makes it even more

difficult to cope with the demands of climate actions in pursuit of the predetermined NDC.

The levels of climate finance reported by global donors in 2019 (\$2.5billion) represent only 12.7% of average annual financial needs for external climate finance expressed by West African countries in their nationally determined contributions (NDCs) covering the period 2021 – 2030. In the 15th Conference of Parties (COP15) of the UNFCCC in Copenhagen in 2009, developed countries committed to a collective goal of mobilizing USD 100 billion per year by 2020 for climate actions in developing countries, to facilitate mitigation actions (UNFCCC, 2009). This goal was further affirmed in the Cancun Agreements adopted at the ‘CoP-16’ in Cancun (UNFCCC, 2010). The ‘CoP-21’ held in Paris which produced the Paris Agreement reiterated and entrenched this commitment while extending it to 2025 (The Organization for Economic Cooperation and Development [OECD], 2022).

The OECD (2022) captured four distinct components of climate finance provided and mobilized by developed countries to include:

- Bilateral public climate finance provided by developed countries’ institutions, notably bilateral aid agencies and development banks;
- Multilateral public climate finance provided by multilateral development banks and multilateral climate funds, attributed to developed countries;
- Climate-related officially supported export credits, provided by developed countries’ official export credit agencies, and
- Private finance mobilized by bilateral and multilateral public climate finance, attributed to developed countries.

The OECD (2022) accordingly observed that in 2020, the initial target year of the USD 100 billion goal under the UNFCCC, total climate finance provided and mobilized by developed countries for developing countries amounted to USD 83.3 billion. This represents an increase of about 4% from the 2019 figure of USD 80.4 billion. Available data indicate that there has been a sustained increase since 2016 as developed countries continued to inch closer to the USD 100 billion goal. However, large proportion of these funds come as loans with strings attached.

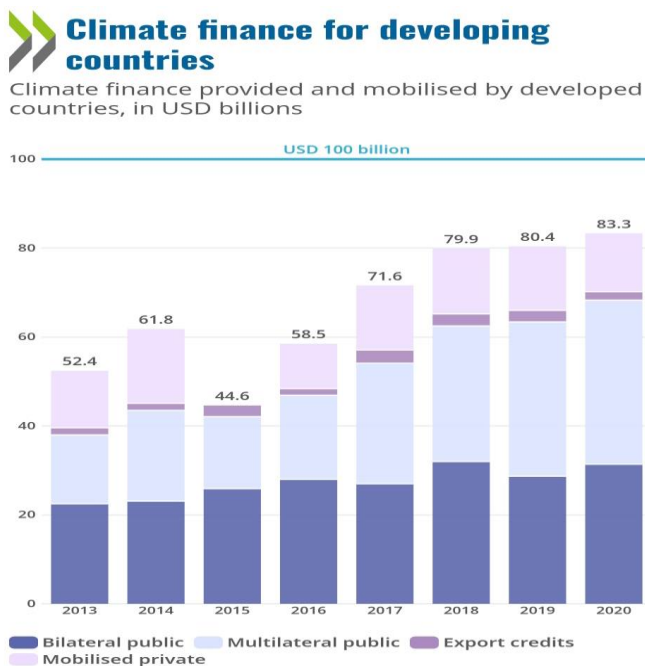


Figure 1: Climate finance provided and mobilized in 2013-2020 (USD billion).

Source: OECD (2022)

As in previous years, public climate finance in the year 2020 mainly took the form of loans (71% or USD 48.6 billion, including concessional and non-concessional loans) and to a lesser extent, grants (26% or USD 17.9 billion). OECD (2022) observed that between 2016 and 2020, the annual level of grants increased by USD 5.6 billion (a 46% growth) and the volume of public loans by USD 15.3 billion (also 46%). The study further explained that the inflow from public international sources averaged USD 4.9 billion annually from 2013 to 2018.

Also, the UNFCCC (2022) pointed out that in 2013-2018, ECOWAS countries received an average USD 2.6 billion annually in total climate finance from bilateral sources, MDBs and climate funds reporting to the OECD Creditor Reporting System and an annual average of USD 2.3 billion in renewable energy investments from China over the same period.

Accordingly, Climate Policy Initiative (2022) noted that in 2019/2020, an average USD 1.9 billion per year of public and private capital was invested in climate related activities in Nigeria. The study indicated that this is only 11% of the estimated USD 17.7 billion needed annually to meet the conditional Nationally Determined Contribution (NDC) target of reducing emission 47% below business-as-usual by 2030. Specifically, CPI (2022) observed that the tracked USD 1.9 billion of climate finance is minimal compared to the size of the country’s economy, with a GDP of USD 432 billion and the opportunities for low carbon development. Moreso, fossil fuel financing in Nigeria continues to dominate activities. Geuskens & Butijin (2022) posited that Nigeria was ranked second in Africa in terms of the number of fossil fuel projects financed between 2016 and 2021 with one liquefied natural gas (LNG) project therein receiving USD 2.77 billion which is more than the total climate finance tracked in 2019/2020. The investment gaps for the priority sectors therefore are huge given the estimated USD 17.7 billion needed annually to deliver on the conditional NDC.

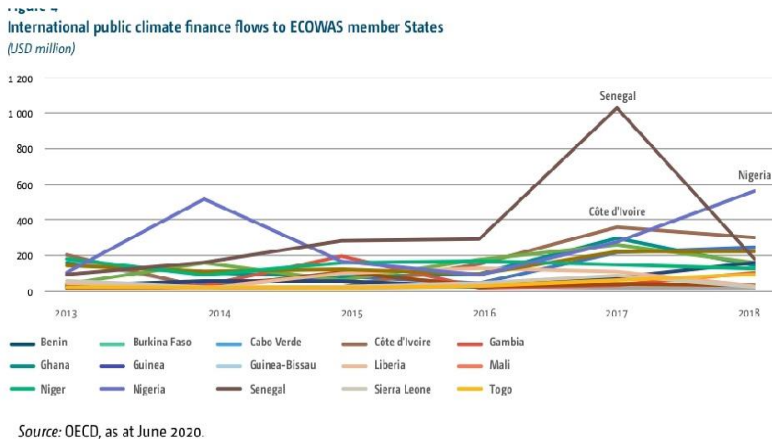


Figure 2: International Public Finance flow to ECOWAS member state

Source: OECD, June 2020

Again, at USD 663 million, adaptation finance is not consistent with the extent of the country’s vulnerability to climate change. Nigeria is considered the 53rd most vulnerable and the 6th least-ready country for adaptation to climate change (Nwankpa; 2022). Concessional debt is predominantly used to channel climate finance (46%), followed by non-concessional debt (25%). CPI (2022) posited that grant and equity-based finances played a relatively minimal role in Nigeria’s climate finance ecosystem, at 5% and 12% respectively while the private sector investment significantly lags behind public investment, accounting for

23% of total climate finance committed in 2019/2020.

Table 1: National projects of ECOWAS member states funded by the Green Climate Fund

	Total project value (USD million)	GCF funding (%)	Co-financing	Them	Sector(s)	Accredited entity	Under implementation
Benin	10.0	90.0	10.0	Adaptation	Ecosystems	UNEP	Under implementation
Burkina Faso	58.6	45.8	54.2	Mitigation	Energy	AfDB	Approved
	25.0	90.0	10.0	Adaptation	Water, health	WB	Under implementation
Gabo Verde	–	–	–	–	–	–	–
Cote d'Ivoire	–	–	–	–	–	–	–
Cambia	25.5	80.5	19.5	Adaptation	AFOLU	UNEP	Under implementation
Ghana	25.6	78.1	21.9	Cross-cutting	AFOLU	AfDB	Approved
Guinea	–	–	–	–	–	–	–
Guinea-Bissau	–	–	–	–	–	–	–
Mali	37.8	75.8	24.2	Mitigation	Energy	–	Approved
	31.0	73.4	26.6	Adaptation	Water, health	WB	Under implementation
Niger	12.7	74.1	25.9	Cross-cutting	Finance, AFOLU	International Fund for Agricultural Development	Approved
Nigeria	467.0	21.4	78.6	Mitigation	Energy	Africa Finance Corporation	Approved
Senegal	10.0	100.0	0.0	Adaptation	Water, health	World Food Programme	Under implementation
	78.4	21.1	78.9	Adaptation	Water, health	French Development Agency	Under implementation
	8.2	93.3	6.7	Adaptation	AFOLU	Centre de SulviEcologique	Under implementation
Sierra Leone	–	–	–	–	–	–	–
Togo	–	–	–	–	–	–	–
Total	789.8	37.0	63.0				

Source: GCF, as at June 2020.

Table 2: Green Climate Fund Readiness Programme activities implemented in ECOWAS member States

	Number of readiness activities	Support approved (USD million)
Benin	2	2.00
Burkina Faso	3	1.00
Cote d' Ivoire	4	3.00
Cabo Verde	–	–
Gambia	1	0.30
Ghana	3	4.00
Guinea	2	2.00
Guinea-Bissau	1	0.30
Liberia	3	3.00
Mali	5	1.00
Niger	2	3.00
Nigeria	2	3.00
Senegal	6	2.00
Sierra Leone	1	0.33
Togo	2	0.54
Total	37	25.47

Source: GCF, as at June 2020

Table 3: Funding received by ECOWAS member States from the Global Environment Facility

	GEF Trust Fund (USD million)	LDCF (USD million)	CBIT (USD million)	SCCF (USD million)	Co-financing (USD million)	Total finance (USD million)	Co-financing (%)
Benin	43	27	–	–	407	477	85
Burkina Faso	46	18	1	–	364	429	85
Gabo Verde	27	3	–	–	195	225	87
Cote d'Ivoire	37	–	1	–	241	279	86
Gambia	26	24	–	–	178	228	78
Ghana	83	–	1	4	542	631	86
Guinea	35	20	–	–	496	551	90
Guinea-Bissau	17	16	–	–	161	194	83
Liberia	17	16	1	–	108	142	76
Mali	47	21	–	–	385	453	85
Niger	45	18	–	–	411	473	87
Nigeria	100	–	–	–	1.551	1.651	94

Senegal	71	24	–	–	487	582	84
Sierra Leone	12	24	1	–	161	198	81
Togo	19	14	1	–	177	212	84
Total	625	225	6	4	4.864	6.725	87

Source: GEF, as at June 2020

Obviously, finance remained a big challenge for climate actions in Nigeria. Akinwumi Adesina, the President of the African Development Bank Group, noted that Africa receives only about three percent of global climate financing and thus lacks the resources to tackle climate change (The Cable; 2022). He explained that the meager financing is not meeting the needs of Africa, and as such, the continent’s climate financing gap will reach \$100bn to \$127bn per year through 2030. He pointed out that Africa would need between \$118bn to \$145bn annually to implement its commitments to the Paris Agreement and its nationally determined contributions (NDCs).

The World Bank Group says it delivered \$31.7bn to help countries address climate change in 2022. The amount represents a 19 percent increase from the \$26.6billion financing recorded in the previous fiscal year. The World Bank said \$700million was given to Nigeria to help 3.4 million people adapt to the changing climates; develop 20 watershed management plans; and priorities investments that can slow desertification, among others (The Cable; 2022). It also contributed in helping the government of Nigeria finance ‘green investments’ in agriculture, energy, water, and transport.

The African Development Bank [AFDB] (2022) observed that without access to existing and new pools of innovative climate finance sources, Nigeria will not meet its climate change targets. The study noted that the estimated cumulative financing needs for Nigeria to respond adequately to climate change and implement its NDCs are estimated at about USD 247.3 billion over 2020-2030 with lower and upper bounds of USD 231.8 billion and USD 262.7 billion, respectively. It also explained that Nigeria has not received climate financing commensurate with its financing needs and vulnerability to climate shocks, although the inflows have increased steadily since 2016. The study stated that between 2016 and 2020, climate finance inflows to Nigeria averaged just USD 0.9 billion per year, rising from USD 0.2 billion in 2016 to USD 1.9 billion in 2020.

CLIMATE CHANGE INTERVENTIONS AND ECONOMIC DEVELOPMENT IN NIGERIA

Combating Climate Change is a massive investment in the economic and technological advancement of Nigeria. Fatoki and Sasona (2015) observed that by about 2030, the incremental investment needed for mitigation in developing countries could be \$140 to \$175 billion, with associated financing requirements of \$265 to \$565 billion yearly. This is humongous considering the capacity of the developing countries and the nature of funding (loans) and quantum of support coming from the donor agencies and the development partners.

The poor countries have fewer resources to invest in adaptation, with their economies heavily reliant on subsistence agriculture. This agricultural sector of the economy has widely been acknowledged as most vulnerable to changes in the climatic and weather conditions (Fatoki and Sasona; 2015). Evidently, the poor countries are least responsible for causing climate change, yet most vulnerable. The 2017 Climate Change Vulnerability Index (CCVI) published by the UK-based risk company (Verisk Maplesoft), classified Nigeria as a region of high risk, and indicated that the country is one of the topmost vulnerable countries in the world (Federal Ministry of Environment; 2021). From the tables above, it is clear that monies made

available for developing countries, Nigeria inclusive, are grossly inadequate to meet the countries' NDC targets.

Moreso, the Federal Ministry of Environment (2021) noted that an investment of 177 billion USD is indicated in the Nationally Determined Contributions for implementation that covers 2021 to 2030. It however explained that this value is an economy-wide productive investment that is not expected to be a burden exclusively on the government budget. The implication is that government would be relying reasonably on interventions from foreign donors and private sector. Some of these interventions actually came in form of micro-managed projects executed in Nigeria by development partners, grants and loans from multilateral agencies, tied to specific climate actions. Accordingly, Busby, Smith and White (2011) argued that government response to climate change in Nigeria has been inextricably tied to the programs of international donors working in Nigeria. Nigeria remains a top recipient of international development funds in Africa.

For instance, NEWMAP initiated mechanisms to protect Nigerians from climate change impacts. The project focused on the restoration of 90 gully sites and the construction of close to 60 catchments to control erosion. The Nigeria Erosion and Water Shed Management Project (NEWMAP), adopted innovative integrated approaches based on community participation to address several gully erosion menaces in many communities in the country. The projects completed in 2022, linked poverty alleviation with sustainable ecosystems and better disaster-risk prevention. This approach has improved the lives and safety of more than 12 million people in 23 states in Nigeria (The World Bank; 2022). World Bank Group (2022) also noted that warning systems were implemented, and 103 automated weather and flood alert. Warning systems provide data for catchment planning, rainfall prediction, and flood monitoring for five River Basin Development Authorities. Storm water diversion plans were developed to stop gully formation, manage flood risks in urban areas, and adapt to higher rainfall. It also assisted in helping farmers cope with droughts, climate-smart agricultural innovations, conserve water with innovations as solar-powered drip irrigation and rainwater harvesting.

The World Bank (2022) posited that the NEWMAP supported initiatives helped decrease greenhouse gas emissions, improved afforestation and innovative technologies, such as fuel-efficient cook stoves, solar-powered Primary Health centers, borehole pumps, meat-dryers, and agro-processing plants introduced to reduce greenhouse gas emissions, impact of deforestation, and over reliance on fossil fuels and fuel woods. In addition, 185,000 local government officials and community members were trained in environmental management to boost their knowledge of land degradation, soil and water sustainable farming, and climate friendly waste management methods.

Nigeria's hope to decrease the use of diesel generators for back-up power by improving on-grid power generation and delivery, and by producing an additional 13 gigawatts of off-grid solar power by 2030 also got some buy in. The United States Government's Power Africa initiative, coordinated by USAID, is supporting the Nigerian government efforts in this direction by unlocking stranded generation through improving on-grid transmission and distribution capacities; facilitating implementation of Nigeria's Presidential Power initiative to improve grid reliability and reach 25 gigawatts of power generation by 2023; and supporting off-grid projects like the 'Solar Power Naija' program and the Nigeria Electrification Project, which will energize millions of houses and offices through the solar home systems and solar hybrid mini grid (USAID; 2022). These efforts support Nigeria's Electricity "Vision 30:30:30 that aims to increase electric power generation from 5.5 gigawatts to 30 gigawatts with 30 percent of the power sourced from renewable energy resources by 2030. Nonetheless, electricity generation in Nigeria remained abysmally poor.

Since 2013, the Power Africa initiative has achieved nearly two million new on and off grid connections, more than \$4.3billion of power sector investment mobilized through U.S Government assistance (USAID;

2022). Power Africa also helped to develop the \$330 million ‘Solar Power Naija’ Program to provide concessionary financing to private sector developers to deploy five million new solar connections by year 2023. USAID is supporting the Nigerian government’s climate priorities by implementing resilience-building activities with a focus on vulnerable communities in ecologically sensitive regions in Nigeria. This has resulted to about 1 million smallholder farmers’ use of improved seed varieties, like drought-tolerant and early maturing seed varieties (USAID; 2022). The study also pointed out that over 21,000 hectares of farmland are under improved management practices or technologies that strengthen resilience to withstand shocks from climate change.

The efforts of the Nigerian government to increase on-grid reliability and renewable energy supply are receiving meaningful support from USAID. However, it faces challenges implementing climate priorities related to gas flaring, gas-to-power generation, transportation, climate-smart agriculture, and reforestation (USAID; 2021). USAID also is supporting Nigeria’s government development and climate priorities through Power Africa, agricultural feed the future initiative interventions, and Water, Sanitation, and Hygiene Programming (USAID; 2021).

Carbon Brief’s climate finance analysis shows that Nigeria received \$136m in international climate finance in 2016, more than half of which came from EU grants (858m for energy policy development and \$40m for Disaster Risk Reduction-related initiatives (AfronomicsLaw; 2021). Other internationally financed projects in Nigeria include \$25m toward a credit system for renewable energy and energy efficiency projects, \$5m for a sustainable fuel wood management system, and \$3m for scaling up hydropower.

The Bank of Industry (BOI) and the French Development Agency (AFD) signed a N2.5 million grant agreement dedicated by the Green Climate Fund (GCF) to fight climate change in Nigeria (Business Day; Feb. 12, 2023). The aim is to provide tools for effective identification and development of eligible bankable climate-related projects as well as improve the readiness of the bank’s customers to implement green practices in their operations. On the 23rd of August, 2022, the BOI and French agency signed a N100 million credit line to expand green finance in Nigeria. This was approved under AFD’s Transforming Financial Systems for Climate (TFSC) programme with the Green Climate Fund, a \$650 million program developed in 17 countries for 100 percent climate investment projects (BusinessDay; Feb. 12; 2023).

For World Bank (2022), the most comprehensive adaptation projects in Nigeria in recent years include (a) 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 the Northern Nigeria. The study noted that upon approval in 2012, the World Bank Committed approximately USD 500million to it. The project had three facets; (a) Gully Rapid Action and Slope Stabilization (GRASS); (b) Integrated Watershed Management and (c) Adaptive livelihoods. These were implemented in 19 states of Nigeria.

The Africa Development Bank (AFDB) on its part launched USD25billion Africa Adaptation Acceleration Program (AAP) in collaboration with the Global Centre on Adaptation (GCA) (Butu, Okeke and Chukwumerije; 2022). This was targeted at unlocking financing from African governments, investors, foundations, resilience bonds and debt for climate adaptation swaps. This project was aimed at providing adaptation solutions and best practices to 1,100 villages in the region and in bordering countries. It was a five year project undertaken from 2013-2018.

In 2021, the World Bank again launched a NEWMAP successor in the Agro-Climate Resilience in Semi-Arid Landscapes (ACReSAL). This project was a \$700 million project aimed at improving landscape management in Northern Nigeria. The project has four components intended 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 multi-sectoral integrated landscape

management and climate resilience (Butu et al; 2022). The scholars observed that, like most nations in the Sub-Saharan Africa, Nigeria relies on foreign loans, aid and grants to finance more than 50% of its climate adaptation and mitigation activities. They explained that a significant percentage of the project costs are born by multilateral financial institutions (MFIS), especially, the World Bank, the AFDB, GIZ, FCDO and USAID.

CLIMATE CHANGE INTERVENTIONS AND ADAPTATION CUM MITIGATION ISSUE IN NIGERIA

Sustainable economic development is conceived as adjusting to those economic practices that guarantee preservation of the entire ecosystem as much as possible. This becomes necessary to forestall climate change and ensure the health and sustainability of lives and livelihoods by reverting to climate friendly economic activities. Adaptation and mitigation of climate volatility comes handy in trying to evolve sustainable economic development.

Obviously, man is an economic being. Man engages in economic activities to earn a living and even to improve the quality of life. In the process of these economic activities of man, the ecosystem suffers, and cumulatively, climate change results, which further threaten lives and livelihoods. This happens both in the agricultural sector, industry and transportation. Adegbite (2023) reported that farmers in Nigeria are quite clear that climate change has resulted to decline in their productivity. It also affects the lives of other living things adversely.

Logical reversal of this therefore requires rethinking and redesigning the economic activities of man in such a way as to address its tendencies to cause harm to the ecosystem. This is the thrust of sustainable economic development.

In line with the above, and in accordance with the demands of the United Nations Framework Convention for Climate Change (UNFCCC), encapsulated in the Paris Agreement, state actors articulated their 'Nationally Determined Contributions' (NDC) aimed at bringing down greenhouse gas emissions by reverting to climate-friendly economic activities. Nigeria also did. These require huge financial investments which would pose a heavy challenge for the developing countries. To ameliorate this, the industrialized countries, who are by far culpable to engineering climate change, committed to providing funds for the developing economies to meet up with their predetermined NDC targets. In keeping to this promise, the World Bank approved a \$700 million credit from the International Development Association (IDA) for the Nigeria Agro-climatic Resilience in Semi-Arid Landscapes (ACReSAL) projects (World Bank, 2021). This was targeted at increasing the implementation of sustainable landscape management practices in Northern Nigeria and strengthens the country's long-term enabling environment for integrated climate-resilient landscape management. It pointed out that persistent water shortage, especially in the extreme north, continued to exacerbate land degradation, desertification and habitat loss. To sustain economic growth and protect the most vulnerable therefore, better environmental and water resources management which must be resilient to climatic changes must be adopted.

World Bank (2021) argued that Nigeria is faced with water scarcity and droughts which occur every five years on the average, and is likely to increase in frequency due to climate change. They explained that the situation not only threaten food security and livelihoods, but also increase the risk of violent crimes. They also pointed out that communities and households that are most dependent on natural resources for their survival are vulnerable to desertification and other fallouts of climate change.

Essentially, the Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) project is a 6-year strategic project prioritizing actions within four components, namely- Dryland Management; Community Climate

Resilience; Institutional Strengthening and Project Management, and Contingent Emergency Response. These are targeted at improving the capacity of the country to adapt to a changing climate, largely through enhancing multi-sectoral convergence, across environmental issues, agriculture, water, technology, data analysis and connectivity. This is intended to, inter alia, help reduce the vulnerability of millions of extreme poor in the Northern Nigeria and strengthen their roles in the management of their natural resources in a manner that addresses land degradation while strengthening climate resilience.

On another count, to help Government of Nigeria finance ‘green investments’ in agriculture, energy, water, and transport, Green Bonds were issued. The bonds raised \$30 million in 2017 and \$ 41 million in 2019” (World Bank, 2022). With regards to these funds, the Nigeria’s Vice President, Kashim Shettima stressed that the country is prioritizing climate change interventions to address the menace of desertification, coastal erosion and flooding” (Punch Newspaper, July 23, 2023).

The UK government launched a £95 million Propcom+ international climate finance project to improve the climate resilience of Nigeria. This fund is expected to help the vulnerable adapt to the effects of climate change (TheCable; 2022). This is targeted at raising investments in agriculture and supporting four million people, most of whom must be women, to adopt and scale sustainable agricultural practices that increase productivity and climate resilience. Accordingly, more than 12 million people benefited from the \$900 million Nigeria Erosion and Watershed Project (NEWMAP) that reinforced the country’s ability to fight climate induced erosion, natural hazards, and disasters (World Bank, 2022).

Nigeria has identified its adaptation priorities, which include sustainable land use. and water resource management that results in food security, appropriate urban development, preservation of its biodiversity and ecosystem services, social protection mechanisms, infrastructure resilience, improved health and disaster risk reduction for reduced vulnerability across the country (World Bank Group, 2021).

Also, the Bank of Industry (BOI) and the ‘Agence francaise de developpement’ (AFD) built a partnership for a £100 million credit-line for the expansion of green finance in Nigeria. The transaction was approved by AFD and forms a part of the Transforming Financial Systems for Climate (TFSC) program, in partnership with the Green Climate Fund (GCF). This program, which was worth USD650 million involves 17 countries. It was a credit facility aimed at supporting investments in climate projects. It places emphasis on financing investments that contributes to climate change mitigation and adaptation, renewable energy, low carbon and efficient energy generation, climate- smart agricultural technologies, and clean urban transportation system. These are all captured in Nigeria’s NDCs.

CPI (2022) rightly noted that financing the estimated USD 177 billion between 2021-2030 needed to deliver on the conditional NDC will require public, private, and blended finance from both international domestic actors.

The majority of climate finance was committed to energy with (on/off-grid) solar receiving the lion’s share of investment therein (66%). The energy sector, being the highest emitter, accounting for 60% of Nigeria’s total emissions, attracted a bulk of Nigeria’s investment in renewable energy financing. The updated Nigeria’s NDC (2021) has it that approximately USD 122 billion is required for electricity generation sector alone, over the period, 2021 – 2030, averaging USD 12.2 billion annually (CPI, 2022).

CONCLUSION

This research work on ‘Climate change interventions and sustainable economic development in Nigeria’ was necessitated by the fact that Nigeria has relied so much on external interventions for her climate actions. This has not been very helpful given the attendant strings often attached to such external interventions. This over-reliance on external intervention for funding Nigeria’s climate actions have complicated Nigeria’s debt

burden, as these interventions largely come as loans. Worried by this, the researcher sought to find out how the climate change interventions from donor agencies impacted on Nigeria's sustainable economic development as underpinned in her NDC targets.

The study was therefore guided by the following research question:

1. How have the climate change interventions from donor agencies and development partners impacted Nigeria's sustainable economic development?

The study adopted the Descriptive Research design. The documentary method of data collection and content analytical method were used in generating and analyzing data for this study.

For the research hypothesis, 'to ascertain whether the climate change interventions from donor agencies and development partners impacted Nigeria's sustainable economic development', the study found that, the external interventions, coming largely as loans, have complicated Nigeria's economic woes instead of ameliorating it. The external interventions come primarily as loans, with usual strings and this worsened Nigeria's debt burdens. Nigeria spent more than 50% Of its capital expenditure on debt servicing over the past decade. This leaves very little for investments in the critical sectors of the economy that are very tangential to the country's NDC targets. This retards progress in Nigeria's sustainable economic development. Hence, the climate change interventions have not resulted in improved electricity generation and distribution. The interventions have not effectively led to significant technological improvements in the agricultural sector, nor the renewable energy transition.

The agricultural sector is still essentially rain-fed. The farmers also still largely operate at the rudimentary level, without the requisite knowledge, technology and support to adopt smart-climate or climate resilient approaches to farming. This sector which contributes greatly to the country's GDP, still requires huge investments to build capacity and transform to climate resilient methods in line with the country's NDC targets.

The power and energy sectors, which are very important to Nigeria's economy and her 'NDCs' are not different. Nigeria's generating capacity is still embarrassingly low. Nigeria, with a total installed power generation capacity of 16,384MW, can barely generate 5,465.72MW (DailyPost Jan. 8; 2023). This compels households and companies to rely mainly on generating sets which are heavy emitters. For the oil and gas sector, gas flaring has continued unabated. Nigeria is considered one of the top seven gas flaring countries in the world (World Bank; 2022). The report posited that around 2 million people in the country live less than 4km away from a flare site. This is worrisome.

RECOMMENDATIONS

Consequent upon the findings, this study recommends as follows:

The Nigerian government, being a key player in the African sub-region, should galvanize the other African countries to negotiate more interventions from the advanced countries as grant to pursue their Nationally Determined Contributions. The fact that these interventions come largely as loans complicates the debt to GDP profile, constituting an obstacle to the achievement of Nigeria's NDC targets. Additionally, Nigeria should also look inwards and find alternative means of engineering a shift from the predominantly climate vulnerable economic activities to climate friendly but resistant economic initiatives without recourse to external loans.

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