Journal of Public Administration, Policy and Governance Research (JPAPGR), Vol. 2, No. 1, 2024. Available online at https://jpapgr.com/index.php/research. ISSN:2787-0464. Covered in google scholar, etc.
Pillah, Tyodzer Patrick 2024, 2 (1): 68-78

Climate Financing and the Public Administration of Climate Change Mitigation and Adaptation in Nigeria: A Correlational Analysis

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Abstract
The study examines the relationship between climate financing and public administration of climate change mitigation and adaptation in Nigeria. Whereas climate financing is a multispectral effort of fund mobilisation to address the adverse effects of climate change, the administration of climate change mitigation and adaptation determines the success of the mobilised funds for addressing the challenges of climate change in every society, Nigeria inclusive. Every country has its climate finance profile and national approach to climate change mitigation and adaptation. In Nigeria, climate finance is drawn from various connected sectors. However, the public sector has the largest contribution in climate finance efforts. Hence, the public sector had to be invariably largely involved in the administration of climate change mitigation and adaptation as the constitute the goals of climate finance. By relying on qualitative data and descriptive approach of data analysis and presentation, the study conducts a correlational analysis and found that there is a relationship between climate finance and public administration of climate change mitigation and adaptation in Nigeria. In this way, the public sector of Nigeria has a web of related ministries, departments and agencies involved in climate change mitigation and adaptation activities across levels. While the climate change mitigation and adaptation profile of Nigeria indicates the country is faring well in its efforts in comparison with the global profile, there are still some challenges hindering the realisation of the set goals and objectives. The paper suggests that when these challenges are addressed, the country will achieve its set goals and objectives for its climate change mitigation and adaptation efforts and strategies.
Keywords: *Climate change, climate finance, climate mitigation and adaptation, climate change strategy, public administration.*

Introduction

Climate change is adversely affecting Nigeria across sectors even as climate change receives relevant attention through climate finance in Nigeria. As societies globally and Nigeria in particular seek to reduce emissions and enhance sinks of greenhouse gases while curbing vulnerability of the environment and increasing the resilience of humans to the adverse effects of climate change, the role of the public sector becomes fundamental of the efforts must yield the required results (London School of Economics and Political Science & Grantham Research Institute on Climate Change and the Environment, 2023).

Climate change financing and climate change mitigation and adaptation in Nigeria have received some attention from the academia and policy frameworks across multiple actors. In this regard, relevant contributions include, but are not limited to Kemper & Chaudhuri (2020), Department of Climate Change, Federal Ministry of Environment (2021), Itua & Esambe (2021), Oladipo (2021), Onyimadu & Uche (2021), Geuskens & Butijn (2022), Stout and Meattle (2022), and Nwankpa (2022). These contributions focus on the analyses of climate change financing and climate change mitigation and adaptation efforts. The connection between climate change finance and the administration of climate change mitigation and adaptation has not been given relevant attention. However, ascertaining and understanding the relationship which exists within the two variables is necessary for understanding the relevant adjustments needed in the theoretical and practical application of policies to achieve the aims of climate change financing and combating the effects of climate change in Nigeria, while spotting patterns and trends. Hence, this work seeks to fill the existing gap.

Conceptual Clarification

The relevant concepts which require clarification for this paper are climate financing, climate change mitigation and adaptation, and public administration.

Climate Financing: In order to "cover the costs of transitioning to a low-carbon global economy and to adapt to, or build resilience against, current and future climate change impacts," financial resources are typically put in place under the umbrella term "climate finance," as defined by Falconer & Stadelmann (2014). This includes multi-actor and cross-sectorial funding activities from the public sector through national governments and agencies representing them, international organisations, private sector institutions and other partners that would otherwise not have occurred, argues the Global Environment Facility (2023). The United Nations Framework Convention on Climate Change (1993) provides a concise description of climate financing as efforts to reduce emissions and enhance sinks of greenhouse gases. These efforts also aim to maintain and increase the resilience of human and ecological systems to the negative impacts of climate change. It encompasses, more broadly, all monetary inflows and outflows associated with adaptation and mitigation of climate change (Oscar, 2013: 11). This article is taking a look at climate finance from the perspective of the public sector.

Climate Change Mitigation and Adaptation: The term encompasses a wide range of actions taken by humans with the goal of mitigating greenhouse gas emissions, both in the present and in the future, as well as the process of adapting to these various climatic impacts. Climate change mitigation and adaptation essentially seek to manage harm and/or exploit beneficial opportunities from climate change challenges (United Nations Environment Programme, 2023: iv). Global Environment Facility (2023) opines the concept comprises policies and strategies, essentially emanating from representative of governments in collaboration with experts from diverse fields and non-state actors of the international community. This paper adopts the technical conceptualization of climate change mitigation and adaptation as expatiated.

Public Administration: There is now a distinct academic and public discourse niche for public administration. A thorough and methodical application of legislation is what public administration is all about, says Woodrow Wilson. It takes an act of administration for any legislation to be applied specifically. The government's administration stands out the most. Here we see the government at work. "The executive branch is the branch of government that is most visible to the public," (Wilson, 1887). Public administration is the action element of the government, the methods by which the aims and goals of the government are accomplished, according to Corson and Harris, who contributed to the notion of government functionality (Dash & Barik, 2023: 9). Public administration, broadly speaking, is a modern idea of governance and a subfield of management. What we have here are coordinated efforts by the state or its agents to achieve a goal or advance a national interest. Its primary focus is on the management of government programs and policies and the actions of those officially charged with overseeing them. Consequently, many individuals who work for the government are viewed as public administrators. This includes, but is not limited to, heads of state, public agencies, commissions, departments, and ministries, as well as directors, managers, and secretaries (Dash & Barik, 2023: 6).

Literature Review

This study reviews literature on climate change financing and public administration of climate change, focusing on Nigeria specifically.

An article by Cull et al. (2014) looked at how financial inclusion can be used to pursue and achieve development that is climate resilient. Global and national policymakers have recognized the importance of financial inclusion as a development objective since the G20 Pittsburgh Summit in 2009, when the issue was first raised. Following this, other national regulatory and policymaking organizations have pledged to implement national financial inclusion initiatives (Cull et al., 2014). Abraham and Fonta (2018) state that in October 2013, the World Bank Group established the worldwide target of providing basic transaction services to all individuals. In order to achieve financial inclusion, improve the livelihoods of the poor, and reduce vulnerability, they also stressed the crucial need of being able to access financial services.

As a means of adaptation, Abraham and Fonta (2018) study how farmers see their vulnerability to climate change and how important it is for them to have access to capital. They also look at how this perception relates to the topic of climate change and financing adaptation. The study takes place in rural northern Nigeria. Rising temperatures, longer dry seasons, floods, and droughts all contribute to poor harvests and income for rural farmers as a result of climate change. The necessity for finance as a means of adaptation is significantly related to the degree to which farmers are exposed to climate change, according to a non-parametric test. At the time, the loan facilities were meant to help lessen the effects of climate change. Therefore, it was stressed that the government should play a role in funding farmers' adaptation and mitigation plans. According to Abraham and Fonta (2018), it was stated that the involvement of the global community in this endeavor would be significant.

Definitions of climate finance and suggestions for efficient monitoring of climate financing were both brought to by Hongo (2023). In order to help developing nations adapt to and mitigate the effects of climate change, it has been noted that funding and technology transfer are essential. However, it is tough to mobilize the required finances in order to reach the climate financing target. To give just one example, developing nations simply cannot afford the yearly sum of $100 billion. In order for countries to reach their climate finance targets, they should consider various forms of financing and policy measures. These encompass a range of approaches, such as public-private partnerships, tax breaks, incentives for low-carbon investment, regulation of inefficient investments, elimination of subsidies, and public risk mitigation for private investment. At its core, climate financing is about supporting effective and efficient projects that lower emissions of greenhouse gases. According to the article, in order for climate financing to be successful, its policies, programs, and activities must adhere to the Measurement, Reporting, and Verification (MRV) Model. In order to achieve climate finance goals, the MRV Model proposes a number of actions to take. The steps involve being straightforward, practical, and objective; promoting investments with minimal carbon emissions; and being adaptable and considering different investment climates (Hongo, 2023: 2). Unfortunately, emerging nations like Nigeria don't appear to be giving these evaluations any weight.

The UNFCCC framework's common but differentiated responsibilities fundamental approach to climate financing was the focus of the COP15 in Copenhagen, according to Shakya's (2022) contribution. Because climate change is happening all around the world, we need a comprehensive strategy to combat it through funding. Few climate finance providers are responding, even though this type of funding is critical for mitigating climate change's negative effects. "We have overcounted the amount of climate funding that has gone to nations in need and failed to reach the $100 billion target set at COP15." It was stated by Shakya (2022: 1). One example is the 264% overreporting of total climate money, according to an Oxfam study (Carty & Kowalzig, 2020). Differences in reporting from country to country can lead to overreporting of climate finance expenditures. If we want providers to be held to their Paris Agreement targets and for reports on climate finance to be accurate, we need to come up with a common definition of the terms.

Migley et al. (2017) revealed that the SEMed region received a total of USD 4.6 billion in climate money in their Final Report on a Climate money Study. In 2016, USD 252 million and USD 4.3 billion were contributed by climate-specific funds, respectively. Turkey, Morocco, Egypt, Jordan, Israel, Libya, Palestine, Syria, Albania, Bosnia and Herzegovina, Mauritania, and Montenegro are among the nations that will be receiving aid.

International financing, local budget allocations, and the private sector are the sources of resources for the many regional and national channels and funds that developing nations have set up, according to Watson and Schalatek (2020). For example, this is the situation with the Climate Change Trust Fund in Indonesia, the Amazon Fund in Brazil (run by the Brazilian National Development Bank, or BNDES), and similar funds in South Africa, Guyana, the Maldives, Mali, Mexico, the Philippines, Rwanda, and Benin. A number of nations' plans and strategies for combating climate change include calls for national climate funds. Due to their promptly implemented projects that were in line with national priorities and their independent governance structures that fulfilled high standards of openness and inclusivity, national climate change funds garnered early interest. It would appear, however, that national trust funds have little to no influence on improving national ownership and coordination. Still, there are a handful of developing nations that are keeping tabs on climate-related spending and factoring climate risk into their national budget frameworks. This provides more evidence that public climate change adaptation and mitigation efforts are related to climate finance. In light of the situation in Nigeria, this paper will analyze the phenomenon.

Research Methodology

This paper adopts the qualitative research method by utilising the desk research technique and content analysis. Data were collected by observation of archival data, reports of experts, secondary sources and whitepapers to identify existing relationships between Climate Financing and the public administration of climate change mitigation and adaptation in Nigeria.

The limitations of the study are within the periscope of providing statistical information from two variables only. The study uncovers previously unknown relationships between Climate finance and the management of climate change adaptation and mitigation programs in Nigeria's public sector. However, it did not provide a conclusive reason for why the relationship exists.

Discussion of Findings

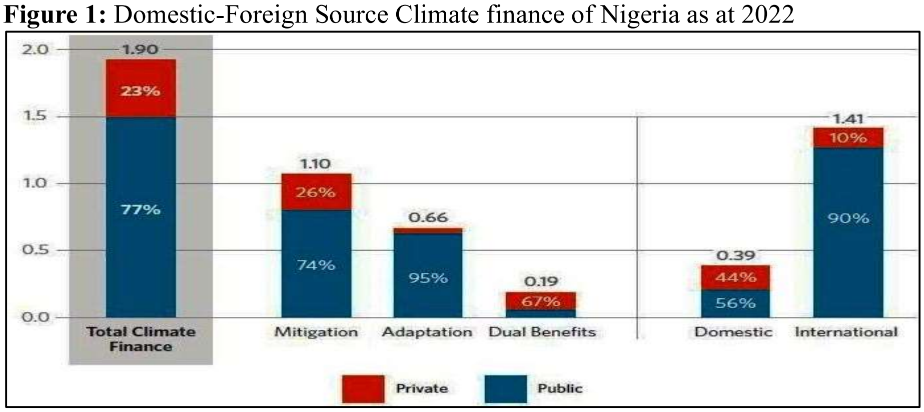
Because of its economy's reliance on ecosystems and natural resources, Nigeria is susceptible to the effects of climate change (DCC, 2021). Climate change is posing a variety of threats to the nation, including rising sea levels, drought, desertification, flooding, and other calamities that differ from region to region and necessitate different adaptation strategies (AfDB, 2020).To understand how this position was reached at about Nigeria, this section of the paper discusses the climate change phenomenology thematically.

Nigeria’s Climate Financing Profile

A total of approximately $1.9 billion in climate funds have passed through Nigeria, making it the third-largest beneficiary of such funds in Africa, following only Egypt and Morocco. When compared to the magnitude of the national economy and the potential for low-carbon development, though, this sum is negligible. A total of USD 29.5 billion, or 7% of tracked climate money in Africa, and USD 7 billion, or 27% of flows in West Africa, came from Nigeria in 2019/2020. Regardless, there is still a projected yearly shortfall of USD 15.8 billion in climate investment in Nigeria as compared to what is needed to accomplish Nigeria's Nationally Determined Contribution (NDC) (Stout and Meattle, 2022: 7).

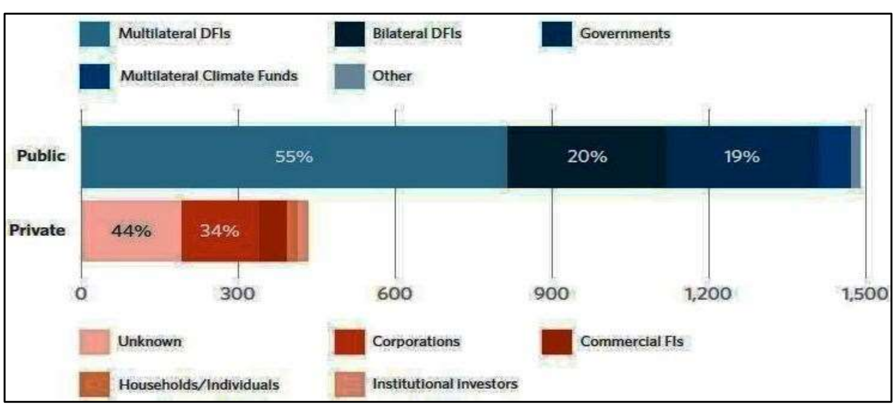
The private sector contributed 0.4 billion USD, or 23% of the total, while public players contributed 1.5 billion USD, or 77% of the total, towards climate funding in Nigeria. The bulk of Nigeria's public climate funding—55%—came from Multilateral Development Finance Institutions (DFIs), followed by Bilateral DFIs at 20% and the government at 19%—with the bulk of that funding going into debt. Of the USD 147 million in private climate funding that was raised, 34% came from corporations, 12% from commercial financial institutions, 5% from homes and individuals, and 5% from institutional investors. Private investment in climate change mitigation in Nigeria is inadequate, although the country's contribution to global climate finance—23%—is more than in any other African country (CPI, 2022b).

Figure 1: Domestic-Foreign Source Climate finance of Nigeria as at 2022



Source: Climate Policy Initiative (2022). *Landscape of Climate finance in Nigeria*, 10.

Figure 2: Public and Private Actors Climate Finance Breakdown as at 2022



Source: Climate Policy Initiative (2022). *Landscape of Climate finance in Nigeria*, 10.

Nigeria's Public Administration of Climate Change Mitigation and Adaptation

The public administration of climate change in Nigeria can be traced to the ontology of adaptation and mitigation frameworks within the policies of the country over years. For instance, the Bakolori Dam in Sokoto State was constructed between 1974 to 1978 in response to climate change (Hartenbach & Schuol, 2005). Similarly, the Chalawa Gorge Dam in Kano State, constructed from 1990 to 1992, was to diversify the reliance on fossil fuel for power generation in Nigeria (Salihi, 2009). Other similar public projects including the Dadin Kowa Dam in Gombe State, the Goronyo Dam in Sokoto State commissioned in 1992, the Jebba Dam in Niger State commissioned in 1985, the Tiga Dam in Kano State, et cetera (Farinloye, 2009; Omoniyi, 2009; International Hydropower Association, 2020); & Shariff, 2009).

In pursuance of specific public administration of climate change and mitigation activities, frameworks, programmes and projects, Amobi & Onyishi (2015) opine that Nigeria keyed into global and regional frameworks. According Nigeria has committed to international frameworks and ratified some instruments which include the following: the Kyoto Protocol; the Nairobi Declaration of 2009; the Convention of African Heads of States on Climatic Change (CAHOSCC) of 2009; the ECOWAS strategic guidelines on the Reduction of Vulnerability, and Adaptability to Climate Change in West Africa; and many other climate change mitigation and adaptation frameworks and instruments.

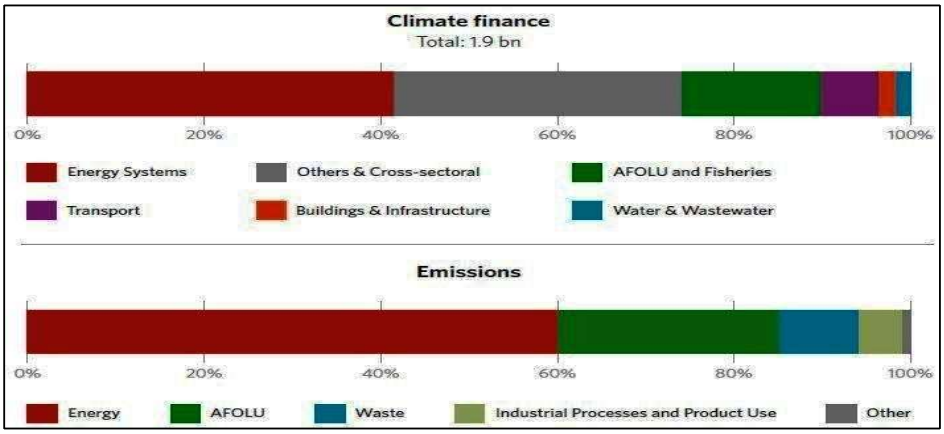
If we compare Nigeria's record with the worldwide climate financing adaptation-mitigation split, we see that it is more or less balanced. Total funding for adaptation to climate change, however, is insufficient. The ideal tracked total, making up 56% of the total, is the USD 1.1 billion in climate change mitigation funding that Nigeria has pledged. With 663 million USD, or 34% of the total, coming from public actors, and 186 million USD, or 10%, coming from dual benefits financing, Nigeria's climate change adaptation budget is well-funded. Given Nigeria's susceptibility to climate change, the country's efforts to reduce emissions should be accompanied by a substantial increase in adaptation funding (Stout and Meattle, 2022: 8).

Climate financing accounts for 46% of Nigeria's concessional debt. One quarter is attributed to the non-concessional debt. Less than 20% of climate finance comes from grant and equity-based sources. Due to the high proportion of debt financing for adaptation in Nigeria (around 90%), a wider variety of financial instruments were used to manage climate change mitigation funding. Only equity-based climate financing can be used to fund efforts to reduce global warming (Financier Worldwide, 2017). Considering the sustainability of Nigeria's debt profile in light of the rate at which climate shocks are rising, leaving insufficient space for recovery needs, it is worrying that the government relies on debt for climate adaptation (Stout and Meattle, 2022: 8-9).

Climate finance in Nigeria has been committedly allocated to projects which target climate change mitigation or adaptation objectives, and projects concurrently targeting both outcomes. A large portion of the funding goes toward energy infrastructure and cross-sectoral initiatives, such as disaster risk management. However, some sectors have gotten some climate finance allocations which are synonymous with emissions sector climate finance. The figure below shows the sectoral Climate finance profile of Nigeria.

Within the sectoral allocations of Climate finance in Nigeria, the energy sector has gotten the major share of the total contribution with on-grid or off-grid solar receiving an estimated 66% of the sectoral investment. Accordingly, an estimate of 71% of the energy finance contributions has been committed to power and heat generation having an allocation of USD 564 million. However, only 20% of the committed energy finance went to transmission and distribution infrastructure.

Figure 3: Climate Finance and Emissions by Sector



Source: Climate Policy Initiative (2022). *Landscape of Climate finance in Nigeria*, 14.

The agriculture and food supply sector also requires relevant consideration within the periscope of Nigeria's public administration of climate change mitigation and adaptation. Whereas the section has gotten the attention of public finance, the section has not gotten the desires level of attention which would be effective and efficient enough. For instance, in 2019/2020, the sector received barely 16% of total climate finance which was estimated at USD 130 million. A large portion of it amounting up to 80% was channelled to climate change adaptation objectives. Methods such as introducing crop varieties that are less susceptible to drought and improving and extending irrigation infrastructure are part of this expansion of storage capacity and facilities; provision of agro-allied insurance; and provision of alternative ways to traditional livestock farming (WBG, 2021). However, there was very little commitment of finance for forestry-related projects which stood at 1% of financial commitments for the agriculture sector in 2019 and 2020 (NDC, 2021).

Other sectors within the climate change mitigation and adaptation framework of Nigeria are Disaster-risk Management and Financial Services & Business. Disaster-risk management has an average allocation of 7.26% of Nigeria's Climate finance (Stout & Meattle, 2022). In this way, public sectors including the Ministry of Agriculture, Ministry of Tourism, National Emergency Management Agency, among others, are offered budgetary allocations for activities that seek to address concerns bothering climate change mitigation and adaptation through related activities. Specifically, Amobi and Onyishi (2015) observed that there is a climate change focal point in each Ministry in Nigeria. This implies that every ministry in Nigeria is required to make some efforts in the public administration of climate change mitigation and adaptation frameworks of the country. As a result, as compared to the global profile of climate finance, Nigeria's adaptation and mitigation efforts are comparatively well-balanced.

Along with the National Climate Change Programme for Nigeria, which runs from 2021 to 2030, the Nigerian government ratified the updated National Climate Change Policy (NCCP) in 2021. The purpose of these frameworks is to offer direction for strategies and plans to adapt to and lessen the impact of climate change. Nigeria has incorporated climate change adaptation and mitigation initiatives into its Economic Sustainability Plan in an effort to lessen the impact of the COVID-19 pandemic on the nation (Ndukwe & Ogbonnaya, 2023).

Challenges of Public Administration of Climate Change Mitigation and Adaptation in Nigeria

In spite of the efforts made by the public sector in financing and administering climate change mitigation and adaptation in Nigeria, some challenges are encountered, thereby hindering the achievement of set goals and objectives in the efforts (Amobi & Onyishi, 2015; Stout & Meattle, 2022). Summarily, the challenges include the under-listed.

First, there is no comprehensive national climate change mitigation and adaptation strategy and a central institution for the administration of such a strategy in Nigeria. This is problematic as observed by Moram et al, thus:

> "One absolutely critical factor that needs to be emphasized here is the general inability of the national and regional agencies in-charge of the environment to enforce codes, regulations, and laws especially with respect to urban planning and infrastructure development, mineral prospecting, adherence to industrial standard and installation of facilities in ecologically sensitive zones (Moram, et al, 2011: 8)".

Secondly, on their part, Amobi & Onyishi (2015) further extended the challenges to public administration of climate change mitigation and adaptation in Nigeria to include structural impediments. Notably, state actors hardly document the development of climate change mitigation and adaptation strategies. Public agencies suffer from insufficient resources and desired level of human capital. Research tend to neglect national gaps as they are sponsored by foreign donors and not Nigerian national actors (Moram: 2011). These among other challenges impede on the public administration of climate change mitigation and adaptation in Nigeria, despite of the financial commitment of the public sector in climate change mitigation and adaptation efforts in the country.

Furthermore, there are sectoral gaps in the public administration of climate change mitigation and adaptation in Nigeria. This is in spite of the allocated priorities to relevant related sectors in the National climate change mitigation and adaptation strategies. This is the situation with the Waste, Water and Industrial Processes, and Product Use aspects of the economy, where mobilising the required funds for effective administration of climate change mitigation and adaptation efforts related to the aspects is difficult. The difficulty arises from insufficient contributions from the private sector either directly or as part of expected corporate social responsibility (Stout & Meattle, 2022). Inherent in the sectoral gaps is the coordination weakness across actors. This weakness undermines the required holistic approach from public and private sectors as well as the general society (Itua & Esambe, 2021).

Finally, achieving the desired transparency in the administration of climate change mitigation and adaptation efforts has proved difficult. This has a negative effect on the administration of finance for climate action in Nigeria. Despite the efforts of the Central Bank of Nigeria and the Nigerian Stock Exchange, disclosure of funds is often problematic, leading to public distrust. This can partly account for the unwillingness of the private sector to provide the needed support (Stout & Meattle, 2022).

Recommendations

Whereas a commendable level of success has been achieved in the public administration of climate change mitigation and adaptation in Nigeria, the challenges which exist indicate that there is the need for addressing them for a sustainable result to be achieved in line with 2050 net-zero goal. It is on this basis that this research makes the following recommendations.

The public sector in Nigeria needs to have a specific agency which would be charged with the public administration of climate change adaptation and mitigation frameworks in Nigeria. The current practice which involves the various ministries, departments, and agencies executing their climate change mitigation and adaptation related activities and projects is not sufficient enough. Although Stout & Meattle (2022) observe that a commendable record is being achieved with the present status-quo, the existing status-quo does not give room for effective monitoring and evaluation to of climate change adaptation and mitigation activities and projects in Nigeria. Having a specific agency as being suggested here will facilitate the effective monitoring and evaluation needed in this line, thereby providing value for the climate finance and public administration of climate change mitigation and adaptation in Nigeria.

There is also the need to develop a coherent strategy on climate change mitigation and adaptation in Nigeria. The administration of the strategy should be the primary function of the agency to be charged with public administration of climate change mitigation and adaptation frameworks as suggested in the previous preceding paragraph above. The strategy should include specific periodic targets which should be earnestly pursued across the levels of public administration and governance in Nigeria, to ensure bottom-to-top and vice versa contributions to achieve the set objectives and goal of the strategy.

Similarly, Ndukwe & Ogbonnaya (2023) argued that there is the need for greening the public sector for better results to be achieved in the public administration of climate change mitigation and adaptation in Nigeria. According to New Climate Institute (2015), greening the public sector connotes the reduction of plastic production, implementation of "green" public procurement, and reduction of the production of non-recyclable. This would simultaneously require the formulation of a common vision which would enable the appreciation of short-term, medium-term, and long-term objectives, while positioning the public administration of Nigeria to lead the transitionary processes and provide the necessary infrastructure for climate change mitigation and adaptation in Nigeria.

Conclusion

In Nigeria, public administration caters for climate change financing and climate change mitigation and adaptation activities to a large extent. The climate financing framework of Nigeria has a direct and significant relationship the public administration of climate change mitigation and adaptation. This is essentially because of the commitment of the public sector to climate financing and the sector's mediating role in climate finance efforts and frameworks in Nigeria. Therefore, the relationship between climate financing and public administration of climate change mitigation and adaptation in Nigeria exist through a web of related frameworks, agency and sectoral activities and programmes and national as well as international instruments of climate change mitigation and adaptation which the government has ratified and/or sponsors.

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