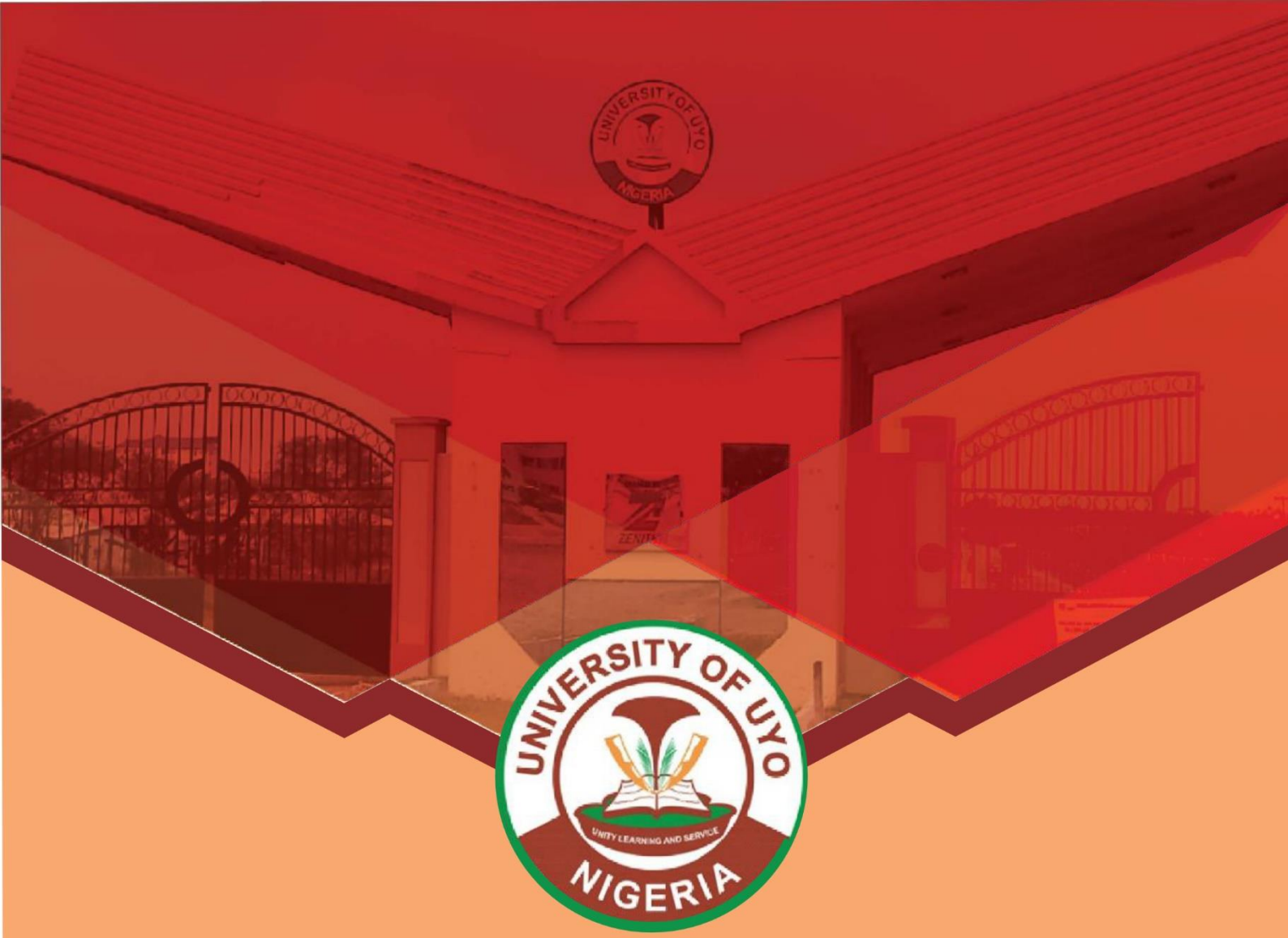

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Periscoping the Legal Frameworks on Climate Change and Renewable Energy in the Mitigation of the Impacts of Climate Change in Nigeria

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Abstract

The adverse impacts of climate change demand urgent actions towards reducing greenhouse gas emissions and mitigating its negative effects across the world. In Nigeria, renewable energy unarguably holds the reliable alternative in addressing climate change and has gained remarkable attention. Therefore, this article sets out to beam klieg lights on the institutional framework, legal regime, and policies surrounding renewable energy in Nigeria, x-raying their effectiveness in mitigating climate change impacts. Through the examination of notable governmental and non-governmental actors, including established institutions, energy policies, and climate action strategies, the article will look into the challenges and opportunities in implementing renewable energy solutions. The discussion will offer insights into how a viable renewable energy sector can contribute in the mitigation of climate change impacts in Nigeria. As noted above, this article shall provide workable recommendations for the improvement of Nigeria's legal and policy regimes for renewable energy, thereby establishing a foundation for a cleaner environment and sustainable development for the country.

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1. Introduction

Climate change has become a hydra-headed problem to the global community with Nigeria being bedeviled with its multi-faceted challenges. Interestingly, the Nigerian government has risen to the challenge by setting up institutions to regulate activities that could harm the environment. This move is based on the realization that air, land and sea as well as the things in or on them compose the environment.[1] They contain in them what human society needs for socio-economic development, providing the raw materials for scientific discoveries and technological advancement. The institutions set up by the government regulate human activities that could harm the environment and make policies to that effect.[2] In Nigeria, Institutions are usually established on the basis of an Act of National Assembly or Law enacted by the State House of Assembly. And in that wise, the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act of 2007 was enacted to give birth to the National Environmental Standards and Regulations Enforcement Agency (NESREA). The Climate Change Act of 2021 was also brought into force to establish the agency known as the National Council for Climate Change. While the NESREA Act vests in the Agency the responsibility and function of ensuring that Nigeria has safe unpolluted environment, while the Climate Change Act provides for its Council to make policies on matters relating to climate change in the country.[3] Such other similar laws/legislative interventions aimed at protecting the environment and ensuring a sustainable future are discussed in this article. However, this article interrogates the challenges usually encountered in the enforcement of climate change legislations and proposes viable solutions as recommendations for the government.

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[1]F Anyogu and E Nyekwere, 'Appraisal of the Legal and Institutional Framework for Sustainable Environmental Management in Nigeria' (2021). The Nigerian Juridical Review 155-76.

[2] U Orji, 'An Appraisal of the Legal Framework for the Control of Environmental Pollution in Nigeria' (2012) 38 Commonwealth Law Bulletin 2.

[3] A Onwuemele, 'Appraising the Institutional Framework for Environmental Management in Nigeria' (2011) 2 Journal of Advanced Research in Management 254-60.

2. Conceptual Understanding of Climate Change and Renewable Energy

i. Climate Change

Climate change is the change in the state of the climate that can be identified (e.g., using statistical tests) by changes in the mean and/or variability of its properties, and that persists for an extended period, typically decades or longer.[4] Climate change may be due to natural internal processes or external forces such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use.[5]

Article 1 of the United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods".[6] The state of the science of climate change is central to any discussion and assessment of the impacts of climate change on energy security and the global/domestic efforts to address climate change.[7] The work of the Intergovernmental Panel on Climate Change (IPCC) is the nearest the scientific community has come to evolving an extensive consensus on the present position of scientific knowledge on the cause of climate change, its impacts (observed and anticipated), and options for responding to the threats,[8] including appropriate measures for mitigation and adaptation. However, it has been acknowledged that the series of investigations and actions taken by IPCC to arrive at its conclusion has limitations.[9]

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[4] M L Parry and Others, Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge University Press, 2007).

[5] Ibid.

[6] United Nations Framework Convention on Climate Change,

[7] The principal source of information on the science of climate change is the Assessment Reports of the IPCC.

[8] M Doelle, From Hot Air to Action? Climate Change, Compliance and the Future of International Environmental Law (Toronto: Thomson Carswell Limited, 2005) 30

[9] The Assessment Reports of the IPCC are not entirely comprehensive and there has been no consensus on the conclusions reached by the IPCC. There are existent and emerging scientific findings that shed new light on our knowledge of the causes of climate change,

Nonetheless, the IPCC remains the most tenable and reasonable authority on the science of climate change.[10]

ii. Renewable Energy

Renewable energy is that energy derived from natural sources which are naturally replenished at a higher rate than they are consumed. Sunlight and wind, for example, are such sources that are constantly being replenished by nature. Renewable energy sources are plentiful and all around us. In contrast to renewable energy, fossil fuels – coal, oil and gas – are non-renewable resources that take hundreds of millions of years to form.[11] Fossil fuels, when burned to produce energy, cause harmful greenhouse gas emissions, such as carbon dioxide. Generating renewable energy creates far lower emissions than burning fossil fuels. Transitioning from fossil fuels, which currently account for the lion's share of emissions, to renewable energy is key to addressing the climate crisis. Renewable energy, often referred to as clean energy, comes from natural sources or processes that are constantly replenished. For example, sunlight and wind keep shining and blowing, even if their availability depends on time and weather. While renewable energy is often thought of as a new technology, harnessing nature's power has long been used for heating, transportation, lighting, and more. Wind has powered boats to sail the seas and windmills to grind grain. The sun has provided warmth during the day and helped kindle fires to last into the evening. But over the past 500 years or more, humans increasingly turned to cheaper, dirtier energy sources, such as coal and fracked gas.[12]

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its impacts and the workable responses and measures. Some scientists have also doubted the level of certainties concerning the variations that have taken place in the climate system, etc; see P Chylek and Others, 1st International Conference on Global Warming and the Next Ice Age, Conference Proceedings, Halifax, Nova Scotia, Canada, 19-24 August 2001 (Dalhousie University, 2001)

[10] It is also the source on which the UNFCCC regime and the parties to it accepted to rely upon in their various activities to tackle climate change.

[11]United nations, 'What is Renewable Energy' <https://www.un.org/en/climatechange/what-is-renewable-energy#:~:text=Renewable%20energy%20is%20energy%20derived,plentiful%20and%20all%20around%20us.> Accessed 27 September, 2025.

[12] 'Renewable Energy: The Clean Facts' (2022) <https://www.nrdc.org/stories/renewable-energy-clean-facts#sec-whatis> Accessed 27 September, 2025.

3. Legal Framework on Climate Change in Nigeria

i. The Constitution of the Federal Republic of Nigeria, 1999 as Amended

Interestingly, the Constitution,[13] as the supreme national legal order in Nigeria, to a little extent, recognises the importance of improving and protecting the environment.[14] The constitution therefore makes infinitesimal provisions for the environment in section 20 which makes it an objective of the Nigerian state to improve and protect environmental components which include the air, land, water, forest and wildlife of Nigeria. It is however regrettable that these provisions fall under Chapter 2 of the Constitution[15] which are non-justiciable by virtue of section 6(6)(c) which provides:

> *The judicial powers vested in accordance with the foregoing provisions of this section … shall not except as otherwise provided by this Constitution, extend to any issue or question as to whether any act of omission by any authority or person or as to whether any law or any judicial decision is in conformity with the Fundamental Objectives and Directive Principles of State Policy set out in Chapter II of this constitution.*[16]

This provision of section 6(6)(c) has been construed as negating the court's authority to decide on any issue having to do with the enforceability of the provision of section 20 of the Constitution. That is, protection of the environment. This is because section 20 falls under the provisions of fundamental objectives and directive principles of state policy set out in chapter two of the Constitution, which by section 6(6)(c) are usually not

[13] Constitution of the Federal Republic of Nigeria, 1999 (as amended).

[14] Environmental Law Research Institutes 'A Synopsis of Laws and Regulations on the Environment in Nigeria' <http://elri-ng.org/newsandrelease2.html> accessed 27 September, 2025.

[15] Chapter 2 of the Constitution is on the Fundamental Objectives and Directive Principles of State Policy

[16] Section 6 (6) (c) of the Constitution of the Federal republic of Nigeria,1999 (as amended).

enforceable.[17] This provision was judicially interpreted in the case of *Okogie (Trustees of Roman Catholic Schools) and other v Attorney-General, Lagos State*[18] where the Court held that section 13 has not made Chapter II of the Constitution justiciable among other things. The view of the court in the above cited case further backs the contention that no court has power to entertain any question concerning the enforceability of the provision of section 20 and of other matters specified in Chapter two of the 1999 Constitution (as amended).[19] The collective reading of section 20 and section 6(6)(c) of the Nigerian Constitution shows that the Constitution does not contain any express provision for the right to a healthful environment. The conclusion from the foregoing is that the Nigerian Constitution, which is the highest law of the land, has no express provisions for justiciable environmental rights.

Meanwhile, section 12 of the Constitution also establishes, though impliedly, that international treaties (including environmental treaties) ratified by the National Assembly should be implemented as law in Nigeria.[20] The constitutional requirement for the ratification of treaties by the National Assembly however exposes the weakness of the Constitution in protecting the Environment in view of the importance of the environment to mankind and his sustainable development. This is particularly so because the provision slows down enforcement process. It does not also take into cognizance the hydra influence of globalization in all spheres of our life. Worst still, that provision simply stifles the promotion of international cooperation in environmental protection. However, it must be mentioned that Nigeria has ratified many International Treaties that protect the environment, such as the Paris

[17] A Abdulkadir and A Sambo, 'Human Rights and Environmental Protection: The Nigerian Constitution
Examined' (2009) Journal of Food, Drug and Health Law 61, 73; M Olong, 'Human Rights, the Environment and Sustainable Development: Nigerian Women‟s Experiences' (2012) 5(1) Journal of Politics and Law 100, 108.

[18] 1981] 2 NCLR 337.

[19] The case decided under the regime of the 1979 Constitution remains relevant as the provision of Section 13 therein is impari materia with the provision of Section 20 of the 1999 Constitution.

[20] Environmental Law Research Institutes web page, 'A Synopsis of Laws and Regulations on the Environment in Nigeria' <http://elri-ng.org/newsandrelease2.html> accessed 30 September, 2025.

Agreement, Kyoto Protocol to the Framework Convention on Climate Change, amongst others. These ratified treaties are enforceable against Nigeria once they become domesticated.

ii. The Climate Change Act

Another beacon of legal framework for climate change in Nigeria is the Climate Change Act (abbreviated herein as "CCA") 2021, which came into force in response to Nigeria's commitment to complying with the minimum standard required of the country in anti-climate change efforts of the international community. The CCA aims to achieve low greenhouse gas emission (abbreviated herein as "GHG"), green growth and sustainable development.[21] The Act aims to ensure that Nigeria formulates programmes for achieving its long term goals on climate change mitigation and adaptation being part of the objects the legislature had in mind on enacting the CCA.[22] Long-term climate objective needed to be part of what the country would be doing from 2021 in reducing GHG.[23] However, climate change action plans are to be subject to national priorities; where the national priorities are over and above climate change issues, such national priorities would prevail.[24] Monies needed to combat climate change would be provided by the government.[25] Environmental integrity and socio-economic development will be product of policy and actions integration by the office charged with complying with Nigeria's GHG requirement.[26]Nigeria has set year 2050-2070 as its net-zero GHG emission target in line with Nigeria's international climate change obligation.[27]

Climate change is both an occurrence from natural phenomenon, and an aggression on nature by human activities which tend to pollute the environment beyond what the natural existences can accommodate. Therefore, nations are supposed and are expected to identify risks and vulnerable factors that encourage GHG emissions, build resilience against such weaknesses, and identify/strengthen existing adaptive capacities in

[21] Climate change Act, Section 1.

[22] ibid. 1(a).

[23] ibid, Section 1(b).

[24] ibid, Section 1(c).

[25] ibid, Section1 (d).

[26] ibid. Section1(e).

[27] ibid, Section1(f).

curtailing climate change.[28] Building resilience and risks ascertainment are actions based; a country must show in real terms what it has done, from what it can do would be verifiable, and detailed information of what it needs to accomplish resistance to climate change challenges in its immediate environment.[29] Then, the country should implement mitigation measures that promote low carbon economy and sustainable livelihood as well as ensure that private and public entities comply with stated climate change strategies, targets and National Climate Change Action Plan.[30] The CCA applies to everyone for the purposes of the development and implementation of mechanisms geared towards fostering low carbon emission, environmentally sustainable and climate resilient society.[31]

iii. National Environmental Standards and Regulation Enforcement Agency (NESREA) Act 2007

The NESREA Act[32] established NESREA in place of Federal Environmental Protection Agency (FEPA). The Act repealed the FEPA Act.[33]NESREA Act is essentially an embodiment of laws and rules which has the objective of protecting the environment and promoting sustainable development within the Nigerian space in line with global standards. The agency created by the Act has the mandate to enforce all environmental laws in Nigeria, including international agreements, and to enforce compliance with the international conventions, and protocols, subject, however, to the domestication of such conventions. The protection of the environment is the principal aim of this law. It established the National Environment Standards and Regulations Enforcement Agency to establish basic institutional machinery for environmental management in Nigeria. Section 8(f) of the Act set up mobile courts for the speedy trial of those that violate its provisions. One of the weaknesses of the Act is that section 8(g) bars the agency from enforcing hazardous waste regulations in the oil and

[28] ibid, section1(g).

[29] ibid, section1(g).

[30] ibid, section1(i).

[31] ibid, Section 2.

[32]This Act was officially gazetted by the Federal Republic of Nigeria on the 31st July 2007. See Government Notice 61, Act No.25 Vol. 94, pages A635-655. Now Cap N164 Laws of Federation of Nigeria 2010

[33] Cap F10 LFN 2004; NESREA Act, section 36.

gas sector. The agency cannot monitor, audit, or conduct investigations into the oil and gas sector's pollution.

Furthermore, the NESREA Act promotes corporate environmental responsibility.[34] Section 27 prohibits the discharge on the Nigerian land and into her waters or air, such harmful quantities of any hazardous substance except where such discharge is permitted or authorised under any law in force in Nigeria.[35] Violation of this provision by any person is an offence and such violator in Nigeria is liable on conviction, to a fine, not exceeding N1,000,000 or to imprisonment for a term not exceeding 5 years.[36] Another important provision in the NESREA Act is the power of the Minister of the environment among other things, to make regulations generally in order to give full effects to the functions of the agency under the Act.[37] Not less than 40 regulations have been made since the inception of the agency. It appears the major problem with the NESREA Act is the implementation of its provisions on enforcement. Without doubt, enforcement of the law is crucial to its efficacy. This requires adequate human capacity which appears lacking in NESREA. At this juncture, it must nevertheless be pointed out that the limited space for this article may not give room for elaborate discussions on other relevant acts and legal instruments which constitute the legal framework on climate change in Nigeria such as;

a. The Associated Gas (Continuing of Flaring of Gas) Regulation, 2018
b. The Associated Gas (Re-Injection) (Continued Flaring of Gas) Regulations of 1985
c. Petroleum Industry Act 2021
d. The National Oil Spill Detection and Response Agency (Nosdra) Act[38]
e. Oil Pipeline Act 2004
f. Climate Change Policy 2021 – 2030[39]

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[34] NESREA Act, Sections 20(4), 21(3), 22(4) and 23(4).

[35] Ibid, Section 27(1).

[36] Ibid, Section 27(1).

[37] NESREA Act, Section 34.

[38] The National Oil Spill Detection and Response Agency (NOSDRA) (Establishment) Act, 2006.

[39] Federal Ministry of Environment, 'National Climate Change Policy in Nigeria 2021 - 2023' < https://climatechange.gov.ng/wp-

g. The National Policy on the Environment (Revised 2016)
h. Gas Flaring venting and Methane Emission (Prevention of Waste and Pollution) Regulation) 2023
i. Environmental Impact Assessment Act.

4. Legal Framework on Renewable Energy in Nigeria

In recent times, the Nigerian government has developed many policies directed at promoting the adoption and entrenchment of renewable energy sources so as to protect the environment against negative effects of climate change. Actually, the legal framework for renewable energy in Nigeria began with the Energy Commission of Nigeria Act[40] which established the Energy Commission of Nigeria for the formulation and coordination of national energy policies, overseeing the energy sector's adherence to government policies, and the utilisation of new energy sources.[41] The Commission formulated the National Energy Policy (NEP) 2003, which served as the basis for the development of the Renewable Energy Masterplan. The NEP offered concise directives on the application of renewable energy for production, utilisation, finance, research, development, training, planning, and implementation in Nigeria. Additional renewable energy initiatives include the Renewable Electricity Policy, Guidelines 2006, National Renewable Energy and Energy Efficiency Policy 2015, National Renewable Energy Action Plans (NREAP) 2016. Other legal framework for renewable energy include;

i. The Renewable Energy Master Plan (REMP) 2005

In November 2005, the REMP was developed with the help of the United Nations Development Programme (UNDP) to serve as a blueprint for the implementation of the renewable energy component of the Nigeria Electricity Plan (NEP). It constitutes a major element of the strategy to minimize GHG emission and promote cleaner and more sustainable power supply.[42] The REMP specifically sought to enhance the development of renewable energy resources in the country by outlining targets and goals

content/uploads/2021/08/NCCP_NIGERIA_REVISED_2-JUNE-2021.pdf> accessed 22 July 2025.

[40] Energy Commission of Nigeria Act, Cap. E10, Laws of the Federation of Nigeria, 2004.

[41] Ibid, Section 1.

[42] David O Obada, "A Review of Renewable Energy Resources in Nigeria for Climate Change Mitigation" (2024) 9 Case Studies in Nigeria for Climate Change Mitigation 100669.

in the short, medium, and long term. It also considered the policies, frameworks, technologies, and infrastructural and manpower capacities that will be required to achieve the set targets. Key objectives of the REMP include providing a clear plan for making renewable energy a main part of the energy mix, improve Research and Development (R&D), and ensure energy access to rural areas of the country.[43] The policy focused mainly on exploiting renewable energy technologies in wind power, Small Hydro Power (SHP), biomass (improved cooking stoves) and Photovoltaic Solar (PV solar). The Master Plan outlines the overall objectives for the electricity and non-electric sub-sectors.

ii. The Electricity Act 2023

The primary legislation governing renewable energy in Nigeria is the Electricity Act 2023.[44] The Act emphasises the significance of renewable energy in power generation. The Nigerian Power Regulatory Commission (NERC) and the Independent System Operator (ISO) are mandated to consistently advocate for the generation of power from renewable sources.[45] The Act also establishes measures to promote investment in renewable energy projects, including feed-in tariffs, a program that ensures a fixed price for renewable electricity fed into the grid, along with tax benefits.[46] The Act requires NERC to implement strategies to enhance the propagation of renewable energy in Nigeria's electricity mix. These encompass: i. simplifying the licensing and fee structure for the issuance of licenses to renewable energy service enterprises, ii. Providing regulations that delineate the roles of generation licenses, transmission service providers, and ISO distribution licenses in the integration of renewable energy capacity into the national grid and distribution network, among others.[47] A notable characteristic of the Act is a policy designed to promote the advancement of renewable energy. Section 3 of the Act empowers the Federal Government, via the Ministry of Power, to implement the National Integrated Electric Policy and Strategy Implementation Plan. It is crucial to note that policies have always

[43] Ibid.

[44] Nigerian Electricity Act, 2023 (No. 17 of 2023)

[45] Ibid, Section 70 (1)z

[46] Ibid, 71 & 72; F.Z. Taibi and S. Konrad, Pocket Guide to NDCs under the UNFCCC (ECBI 2018), at 1–2

[47] Ibid, Sections 29 (2), 45 (1), 47 (1), 70.

preceded the establishment of legislation in Nigeria. It was the National Energy Policy of 2003 that led to the establishment of the Electric Power industry Reform Act 2005, which served as the principal legislation for the industry until the enactment of the Electricity Act 2023.[48] The Act delineates the policy's scope to encompass the efficient use of various sources for power generation. The sources encompass renewable energy types like solar, hydroelectric, wind, and biomass. It also include provisions for mitigating the financial obstacles to sector development, such as waivers and subsidies. The Minister of Power is required to implement the National Integrated Electricity Policy and Strategic Implementation Plan (NIEPSIP) within one year of the enactment of the Electricity Act 2023. Review is also to be conducted every five year and the Federal Executive Council is mandated to approve the plan prior to publication in the Federal Government Gazette.

5. The Impact of Climate Change and its Remediation Through Renewable Energy

Nigeria, as a developing country with a high dependence on climate-sensitive resources, faces a broad range of direct and indirect impacts from climate change. These effects cut across environmental, economic, and socio-political dimensions, posing a significant threat to national development and human security.

i. Environmental Impacts

One of the most visible manifestations of climate change in Nigeria is the intensification of desertification and drought, particularly in the northern regions. The Sahelian zone of northern Nigeria has witnessed progressive desert encroachment, leading to the loss of arable land and vegetation cover.[49] Rainfall patterns have become increasingly erratic, and the length of the rainy season has diminished, directly affecting the hydrological cycle and ground water recharge. In contrast, the southern parts of Nigeria, especially the Niger Delta region, are experiencing more

[48] Olukayode Olalekan Aguda,'Constitutional and Institutional Governance of Electricity Sector in Nigeria' (2023) 14 Journal of Energy Research and Reviews (4) 32 – 44.

[49] Esther Shupel Ibrahim and Others, 'Desertification in the Sahel Region: A product of Climate Change or Human Activities? A Case of Desert Encroachment Monitoring in North-Eastern Nigeria Using Remote-Sensing Techniques' (2022) 2 (2) Geographies 204 – 226.

frequent and severe flooding events.[50] Rising sea levels, coupled with poor drainage systems and rapid urbanization, have led to the inundation of coastal areas, displacement of communities, and degradation of critical ecosystems such as mangroves and wetlands.

ii. Economic Impact

Climate change poses substantial economic threats to Nigeria's key sectors. Agriculture, which employs about 70% of the rural workforce and contributes roughly 24% to the national GDP, is particularly vulnerable.[51] Changes in temperature and precipitation patterns affect planting cycles, crop yield, and livestock productivity. Moreover, global shifts away from fossil fuels in response to climate goals threaten the long-term viability of Nigeria's oil-dependent economy.[52] In the health sector, climate-sensitive diseases such as malaria, cholera, and meningitis have become more prevalent due to higher temperatures, stagnant floodwaters, and changing ecological conditions.

iii. **Social and Political Impacts**

Socially, climate change exacerbates existing vulnerabilities, particularly among women, children, and low-income groups. Environmental degradation has led to increased rural-urban migration, swelling the population of informal settlements with poor access to basic services. Moreover, the depletion of natural resources has intensified competition and conflict, especially between herders and farmers in the Middle Belt. These conflicts have often escalated into violence, contributing to national insecurity.

6. Remediating Strategies Through Renewable Energy

In response to the multifaceted impacts of climate change, renewable energy emerges as a strategic and sustainable solution. By

[50] S O Enokela, OM Akwenuke and Uguru, 'Review of Flood Disaster events in Delta State of Southern Nigeria' (2025) 11 (8) International Journal of Engineering and Modern Technology

[51] Kehinde Samuel Alehile, 'Climate Change Effect on Employment in the Nigeria's Agricultural Sector' (2023) 11 (3) Chinese Journal of Urbana and Environmental Studies

[52] Ukeyima Adams, 'Climate Change and the Future of Nigeria's Oil-dependent Economy' (2024) 24 (2) Global Journal of Management and Business Research: B Economics and Commerce

reducing greenhouse gas emissions, diversifying the energy mix, and enhancing adaptive capacity, renewable energy can significantly contribute to climate in Nigeria.

i. Renewable Energy for Mitigation

Nigeria possesses abundant renewable energy resources, notably solar, hydro, wind, and biomass. Large-scale solar farms, decentralized mini-grids, and rooftop solar systems can offer clean, affordable electricity to both urban and rural populations. The deployment of solar photovoltaic (PV) systems has already seen traction in rural electrification projects, such as those championed by the Rural Electrification Agency (REA). Hydropower remains a key contributor to Nigeria's energy supply, accounting for approximately 20% of electricity generation.[53] Small and medium-sized hydro projects hold potential for expansion, especially in riverine communities where grid access is limited. [54] Wind energy, though underutilized, has significant potential in the northern regions, particularly in states like Katsina and Sokoto. These technologies can reduce dependence on fossil fuels and improve Nigeria's carbon footprint.

ii. Renewable Energy for Adaptation

Beyond mitigation, renewable energy enhances adaptive capacity, particularly in agriculture, health, and education. For instance, solar-powered irrigation systems enable farmers to maintain crop production despite erratic rainfall. Solar dryers and cold storage units reduce post-harvest losses, thus improving food security and rural incomes. In the health sector, renewable energy supports the electrification of clinics and the preservation of vaccines, enhancing health outcomes in remote areas. Education and digital inclusion also benefit from electrification.

iii. Economic, Policy, and Institutional Frameworks

The economic potential of renewables includes job creation in manufacturing, installation, and maintenance of renewable energy systems. At the policy level, Nigeria has developed several strategic frameworks, including the Renewable Energy Master Plan (REMP), the Nationally Determined Contribution (NDC), and the Energy Transition Plan

[53] Johnson Nchege and Chijindu Okpalaoka, 'Hydroelectric Production and Energy Consumption in Nigeria: Problems and Solutions' (2023) 219 Renewable Energy 119548.
[54] Ibid.

(ETP) which outlines a pathway to net-zero emissions by 2060. These plans emphasize scaling up renewables, improving energy efficiency, and fostering private sector participation. However, implementation remains a challenge due to regulatory bottlenecks, inadequate financing mechanisms, and weak institutional coordination.

7. Challenges of the Mitigation of Climate Change in Nigeria

Nigeria plays a crucial role in international initiatives to address climate change. Nigeria, with a population over 200 million and an economy significantly reliant on fossil fuels, is susceptible to the effects of climate change. Nonetheless, the nation's legislative structure for climate change regulation encounters several obstacles that impede the efficient execution of climate change policy. This article exposes some significant limitations inherent in the current legislative system regulating climate change in Nigeria to include:

i. Weak Institutional Framework for Environmental Management

The execution of climate change measures in Nigeria is inherently weakened by the wanton duplications of agencies and departments tasked with managing the issues. As the saying goes, too many cooks spoil the broth. The current response to climate change concerns in Nigeria is predominantly assigned too many government departments and agencies, many of which exhibit operational inefficacy.[55] There is also the issue of inadequate enforcement of existing environmental protection laws and standards, and this has intensified the climate change crisis in Nigeria.[56] The multitude of entities engaged in climate change response results in incoherence in decision-making processes and obstructs the accurate evaluation of the efficacy of climate change policies in mitigating emissions and facilitating adaptation.[57]

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[55] David G Ogunkan, 'Achieving Sustainable Environmental Governance in Nigeria: A review for Policy Consideration' (2022) 2 (1) Urban Governance 212 – 220.

[56] C A Ogunbode, and Others, 'Climate change legislation in Nigeria: A critical review of the challenges and opportunities' (2019) Journal of Climate Policy, 3(2), 1018-1031.

[57] M T Ladan, 'Climate change regulations in Nigeria: A critical analysis of the challenges and

Opportunities' (2019) 10 (1) Journal of Sustainable Development Law and Policy 1-32.

ii. Non-domestication of International Climate Change Treaties

Section 12 of the Constitution mandates that treaties ratified by Nigeria are not legally enforceable unless they are domesticated and integrated into Nigerian law. Regrettably, only two of the climate change treaties approved by Nigeria have been implemented domestically.[58] Thus, under Nigerian domestic law, only the domesticated treaties may be enforceable, while the numerous non-domesticated ones lack binding jurisdiction over the nation.[59] This scenario poses a considerable problem in ensuring governmental accountability for its commitments under international climate change treaties. In the absence of domestication, treaties cannot be successfully deployed as legal instruments to enforce compliance and tackle climate change-related challenges in Nigeria.[60]

iii. Ineffective Enforcement and Implementation of existing Legislation and Policies

Nigeria has numerous laws and policies that could be indirectly utilised to tackle the urgent issue of climate change, such as, the Land Use Act, the Electricity Power Sector Reform Act, 2005 etcetera. The current legislations, while not specifically intended for climate change mitigation and adaptation, include provisions and policies that may aid in addressing the issues presented by climate change in the country. Nonetheless, the paramount concern that emerges is the absence of the political will to implement these legislations effectively. It is discouraging to note that some laws, which possess significant potential for addressing climate change, remain unexecuted and neglected, existing only as written text.

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[58] Muhammed Taofeek Ladan 'National Practice on Domestication of Treaties in Nigeria (1960 – 2023)' (A Presentation being made at the 2 day Seminar on Asian- African Treaty Law and Practice, 14 – 16 April 2023).

[59] Ekweremadu, I. (2015). Why Amendments failed during constitutional review. A Public Lecture of the
Faculty of Law, Nnamdi Azikiwe University, Awka delivered at the University Auditorium With the theme: The Politics of Constitutional Review in a Multi-Ethnic Society. On 19 October 2015.

[60] C Nriezedi-Anejionu, 'Could the Non-domestication of Nigerian treaties affect International Energy Investments attraction into the Country?' (2020) 2 (1) African Journal of International and Comparative Law 1-25.

8. Conclusion

It is a given that it is impossible for man to stop the natural causes of climate change, however, the human causes can be drastically reduced with the right approach. It is noteworthy to point out that a number of human activities have contributed and are still contributing to the depletion of the ozone layer, which causes global warming. The objective of this article has been to highlight a number of these human activities and how it is contributing to climate change in Nigeria. Currently, Nigeria's energy sector is fossil fuel dominated and its associated processes lead to Green House Gases (GHG) emissions and ultimately, climate change.[61] If the current trend continues unabated, then climatic variability currently being experienced is definitely going to increase and intensify and the resultant impact will be catastrophic for the future of the country. The argument frequently bandied that Nigeria's contribution to global warming is insignificant when compared to that of developed countries is unsupported given the current trend that threatens to spare no one.

To this end, the Nigerian government has to encourage the deployment of renewable energy sources in stand-alone capacities as well as grid-based to boost energy security and its availability. This article has highlighted laws and policies that have been put in place by the government to encourage the transition to renewable energy. However, it is doubtful whether these laws and policies have actually reduced the effects of climate change to any encouraging extent. To reduce the emission of GHGs, clean and environment-friendly technologies are required. Automobiles can be upgraded to operate on modern fuels such as ethanol, solar engines, electric or hybrid engines. Gas flaring being perpetrated by oil producing companies should immediately be halted, harnessed and defaulters made to pay penalties where necessary. Regulators of the energy sector should encourage operators and consumers to adapt to or adopt energy efficiency measures in both the supply and consumption of energy respectively.

[61] Udochukwu B Akuru, Ogbonnaya I Okoro, and Edward Chikuni, 'Impact of Renewable Energy Deployment on Climate Change' (2015) 26(3) Journal of Energy in South Africa.

9. Recommendations

The following recommendations would be worthwhile towards the transition to sustainable energy practices in Nigeria, *viz:*

i. Strengthening Climate Governance and Policy Frameworks in Nigeria

Enhancing climate governance and policy frameworks is essential for Nigeria to effectively tackle climate change and attain its climate objectives. It is of positive note that Nigeria has made substantial advancements in enhancing climate governance and policy frameworks in recent years. A significant step was the creation of the National Climate Change Policy and Response Strategy in 2012, which offers a comprehensive framework for tackling climate change concerns.[62] By improving governance frameworks, including the delineation of explicit roles and duties among pertinent parties, Nigeria may guarantee efficient coordination and execution of climate policy. Comprehensive policy frameworks are essential to establish a strong basis for the formulation and execution of climate action, encompassing mitigation methods, adaption measures, and sustainable development initiatives. These frameworks must include systems for monitoring, reporting, and verifying advancements towards climate objectives, together with provisions for addressing any potential issues or obstacles that may emerge. Nigeria must actively collaborate with foreign partners and engage in global climate initiatives to use resources, knowledge, and expertise for effectively addressing climate change. By doing so, Nigeria can augment its ability to tackle climate challenges holistically and attain its climate objectives promptly.

ii. Investing in Renewable Energy Sources

Increasing renewable energy capacity is a crucial aspect of Nigeria's efforts to catch up with its climate goals. As of 2021, Nigeria's renewable energy sources contributed to approximately 13% of the country's total energy consumption.[63] However, it is important to note that there is still significant room for improvement, as the Nigerian government aims to

[62] H Haider, 'Climate Change in Nigeria: Impacts and Responses' (2019) The Institute of Development Studies and Partner Organisations.

[63] A Ijiwole, 'Employment Generation and Poverty Alleviation in Nigeria: The Role of Social Entrepreneurship' (2019) 4 Asian Journal of Education Social Studies 1–8.

increase the share of renewable energy to 30% by 2030.[64] This commitment reflects Nigeria's recognition of the importance of transitioning towards sustainable energy systems to mitigate climate change and enhance energy security. By investing in and expanding the use of renewable energy sources such as solar, wind, and hydropower, Nigeria can significantly reduce its reliance on fossil fuels and decrease greenhouse gas emissions.

iii. Investing in Green Infrastructure Projects

Investing in green infrastructure projects, such as green buildings and renewable energy installations, not only helps reduce greenhouse gas emissions but also presents a significant opportunity for job creation and economic growth. According to a report by the Nigerian Investment Promotion Commission, the investment in green infrastructure projects in Nigeria has been steadily increasing over the years. In 2019 alone, the country witnessed a significant investment of USD 2.7 billion in renewable energy projects.[65] This demonstrates a growing commitment towards sustainable development and reducing carbon emissions in Nigeria. By prioritizing these projects, Nigeria can tap into the potential of its renewable energy sector, attract investments, and create a skilled workforce specializing in sustainable technologies.

[64] G Nemet, 'Addressing Policy Credibility Problems for Low-Carbon Investment' (2017) Glob. Environ. Chang 47–57.

[65] ibid.