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# State Response to Climate Change in Nigeria

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**Abstract**

This study assesses Nigeria's state-level responses to climate change, focussing on mitigation and adaptation strategies, particularly in Akwa Ibom State. Nigeria is highly vulnerable to climate disturbances, impacting health, environment, and economy. The research explores the effectiveness of "greener projects" and community awareness campaigns in mitigating climate change. A qualitative methodology was adopted, utilizing snowball sampling to select 25 participants with relevant knowledge and experience. Data was collected through interviews (face-to-face, phone calls, and online Zoom meetings) featuring open-ended questions. The data analysis involved qualitative content analysis and thematic coding to identify key insights from participant interviews. Findings reveal that greener projects, such as reforestation, clean energy adoption, and sustainable agriculture, contribute to reduced carbon emissions, enhanced biodiversity, improved public health, and economic diversification. Recommendations include strengthening policy enforcement, enhancing public awareness and education, promoting community engagement, and improving infrastructure for renewable energy to achieve a more sustainable and climate-resilient Nigeria.

**Keywords**: *State Responses, Climate Change Mitigation, Greener Projects, Community Awareness*

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**Background to the Study**

Nigeria, with its vast geographical diversity, is highly vulnerable to the adverse effects of climate change, which poses significant threats to both present and future generations. The health implications of climate change in Nigeria are particularly severe and multifaceted, as underscored by the 2022 World Health Day theme, "Our Planet, Our Health" (WHO, 2022). Climate change influences human health through multiple pathways, contributing to morbidity and mortality arising from rising temperatures, sea-level rise, erratic rainfall patterns, and increasingly frequent extreme weather events. The World Health Organization (WHO, 2022) estimates that over 13 million preventable deaths occur annually worldwide due to environmental causes, including those linked to climate change.

In Nigeria, the impacts of climate change are far-reaching, affecting air and water quality, food security, and habitat stability factors that exacerbate the prevalence of non-communicable diseases (NCDs) and other health challenges. Vulnerable populations, such as the elderly, low-income groups, and individuals with pre-existing health conditions, are disproportionately affected. Environmental crises have intensified the spread of infectious diseases, deteriorated air quality, and heightened incidences of water and food shortages, alongside growing cases of mental health disorders. Rising temperatures, shifting precipitation patterns, and frequent floods and droughts have contributed to the spread of vector-borne diseases such as malaria and dengue fever. Climate-induced disasters, including floods, also increase the risk of water contamination and outbreaks of water-borne diseases such as cholera, diarrhea, and typhoid. Prolonged heatwaves and declining air quality, particularly in urban centers such as Lagos and Abuja, have been associated with respiratory illnesses and heat-related health problems (Abah et al., 2018). These challenges place immense pressure on Nigeria's already fragile healthcare system, limiting its capacity to manage surges in demand for medical care and infrastructure, especially in rural areas where healthcare access remains inadequate (Olu, 2017).

Beyond health, climate change has profound implications for Nigeria's environment and economy. The northern regions experience recurrent droughts, leading to desertification, soil erosion, and the shrinking of the Lake Chad Basin. In the southern and coastal areas, rising sea levels have resulted in erosion, saltwater intrusion, and habitat loss for both humans and wildlife. The Niger Delta, one of the nation's most ecologically significant zones, faces compounded threats from oil spills, deforestation, and coastal erosion all exacerbated by changing climatic conditions (Ogunkoya, 2020). Agriculture, which employs more than 60% of Nigeria's population and contributes about 25% to the national GDP (CBN, 2022), is especially vulnerable to climate variability. Unpredictable rainfall disrupts planting and harvesting cycles, leading to reduced yields and increasing food insecurity. Staple crops such as maize, sorghum, and millet highly dependent on consistent rainfall have been particularly affected (Kurukulasuriya et al., 2011).

Recognizing the urgency of the climate crisis, the Nigerian government has introduced several strategies and initiatives to mitigate and adapt to its effects. These include renewable energy programs, reforestation campaigns, emission reduction efforts, and the promotion of

sustainable development practices. Furthermore, through collaborations with international organizations and local communities, Nigeria has strengthened disaster preparedness and response mechanisms to lessen the adverse impacts of extreme weather events. Despite these initiatives, a critical gap remains in understanding the extent and effectiveness of Nigeria's climate change adaptation and mitigation efforts, particularly regarding their influence on public health and socio-economic resilience. This study therefore seeks to examine the impact of state responses on climate change in Nigeria, assess existing policy responses, and explore pathways for strengthening national and community resilience to climate-related health risks.

**Statement of Problem**

Despite investing in and promoting investment in various sectors, including infrastructure development and green energy, many states continue to grapple with severe flooding and land degradation challenges. Over 90% of the population remains unaware of climate change and how to address it individually, particularly in rural areas hardest hit by these issues. This indicates that the states' climate change committee is yet to operate at full capacity. These environmental impacts underscore the need for a more comprehensive approach to climate change adaptation and mitigation, including targeted investments in vulnerable areas, capacity building, and community led initiatives.

According to Aiyeloja & Ajewole, (2018) explained that Nigeria's forest ecosystem is under intense threat, with a loss of 9% of the forest area since 2000. The major reason for deforestation is the conversion to agriculture, prompting widespread forest clearance due to crops such as millet, rice, cassava, and vegetables. Increased foreign demand for rosewood (Pterocarpus Erinaceus) has driven a surge in illicit logging in most Nigerian states, ranging from Kogi, Ekiti, and Ondo to Ogun, Taraba, Kaduna, Adamawa, and Cross River (Okojie & Okolie, 2020). Export-oriented revenue-generating cash crops such as cocoa, cashew nuts, sesame, and other timber commodities are also harvested illicitly. Unsustainable extractions of these commodities suggest a general collapse in balancing economic development and protection of the environment, undermining sustainable management of forests in Nigeria.

Thus, numerous programs have been put in place to address these concerns. These include high-resolution land-use mapping following deforestation, designed to guide conservation programs as well as policy making. Some states have also set up tailored plantation programs; e.g., Forest Plantation Establishment Project was set up by Ogun State to reclaim deteriorated lands (Punch, 2023). Akwa Ibom State, having a mere 4.36% (30,216 ha) of its land surface area designated as a reserve forest, suffers increased loss of biodiversity and susceptibility to climate change owing to its low forest cover by percentage (Federal Ministry of Environment, 2004). It is imperative that the government and stakeholders work together to develop sustainable solutions that protect both the environment and the livelihoods of those most affected by climate change. By fostering collaboration and innovation, the state can create a more resilient and sustainable future for all. It is on premise that the researcher found interesting to provide a thorough evaluation of the state's response to climate change. By analyzing the strengths and weaknesses of current policies and programs, this research shall offer insights into areas for improvement and guide future decision-making.

**Objectives of the Study**

The broad objective of the study was to assess the impact of state responses on climate change mitigation and adaptation in Akwa Ibom State. However, the specific objectives of this study shall be

i. To assess the impact of greener project on climate change mitigation in Nigeria.
ii. To investigate the effect of community awareness campaigns on climate change mitigation in Nigeria.

**Research Questions**

The following research questions were raised to investigate and set boundaries on state responses on climate change in Nigeria.

i. What is the impact of greener projects on climate change mitigation in Nigeria?
ii. What is the impact of community awareness campaigns on climate change mitigation in Nigeria?

**Literature Review**

**Climate Change**

Climate change refers to the periodic modification of Earth's climate due to changes in the atmosphere and interactions with geologic, chemical, biological, and geographic factors (National Research Council,2001). Climatic change leaves behind various natural signatures, including impacts on tree and coral growth, species distribution, ocean and lake chemistry, ice accumulation, and erosion patterns (National Research Council, 2001). This imperative has given rise to the development of Earth system history, an interdisciplinary science that synergistically integrates the contributions of a diverse array of experts, including Earth system scientists, paleontologists, paleoclimatologists, paleoecologists, paleoceanographers, and other scholars devoted to the study of Earth's history **(**Oldroyd, 2006**).**

The atmosphere is dynamic, influenced by factors like solar radiation, ocean currents, and vegetation, which change over time (Alvarez, 2009). Paleoclimatologists study these effects to reconstruct past climates, using creative methods to gather information (Alvarez, 2009). Earth system history is a rich and complex field of inquiry, acknowledging that disparate components of the Earth's systems undergo change at varying rates and are pertinent across different timescales (Alvarez, 2009). Climate, defined as the mean state and variability of weather features over time, varies at every timescale (Berner, 2013). Due to the largely circumstantial nature of the evidence, paleoclimatology requires thorough investigation and crosschecking of multiple data sources (Berner, 2013). Climate change refers to a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer." (Intergovernmental Panel on Climate Change, 2013).

The definition also emphasizes that climate change persists for an extended period, typically decades or longer. This indicates that climate change is a long-term phenomenon, rather than a short-term weather event. The timescale of decades or longer is important, as it distinguishes climate change from natural climate variability, which can occur on shorter

timescales. By focusing on long-term changes, this highlights the importance of understanding and addressing climate change as a persistent and potentially irreversible alteration of the Earth's climate system.

**Causes of Climate Change**

Understanding the drivers of climate change is more complex than documenting its evidence. Climate is shaped by numerous factors operating across various timescales, from short term to geological. These factors can be external to the Earth's system, internal but outside the atmosphere, or involve interactions between the atmosphere and other Earth system components, known as feedback loops. Feedbacks are a recently identified and challenging aspect of climate science, but their crucial role in climate variability is increasingly acknowledged. This section will explore the key mechanisms driving climate change. The causes of climate change can be broadly categorized into two main groups: natural factors and human induced factors. Natural factors, such as volcanic eruptions and changes in Earth's orbit, have played a role in shaping the planet's climate history (Mann et al., 2017). Climate change is one of the most pressing issues of our time, with far-reaching consequences for our planet and its inhabitants (IPCC, 2020). The scientific consensus is clear: human activities are significantly contributing to the increase in global temperatures, leading to devastating impacts on ecosystems, biodiversity, and human societies (NASA, 2020).

However, human-induced factors, including greenhouse gas emissions from fossil fuel burning, deforestation, agriculture, and industrial processes, are now the dominant cause of climate change (Hansen et al., 2016). These activities release large amounts of carbon dioxide, methane, and other greenhouse gases, leading to a trap of heat in the atmosphere and a global average temperature increase of over 1°C since the late 19th century (NOAA, 2020). Understanding the causes of climate change is crucial for developing effective strategies to mitigate its impacts and adapt to its consequences (UNFCCC, 2015). By acknowledging the significant role of human activities in driving climate change, we can take responsibility for our actions and work towards a more sustainable future.

**Responses to Mitigating the effect of Climates Change**

Climate change is one of the most pressing issues of our time, with far-reaching consequences for our planet and its inhabitants. The scientific consensus is clear: human activities, particularly the burning of fossil fuels and deforestation, are releasing massive amounts of greenhouse gases into the atmosphere, leading to rising temperatures, more extreme weather events, and altered ecosystems. The impacts of climate change are already being felt, from devastating natural disasters to unpredictable weather patterns, and will only continue to worsen unless we take immediate action. The good news is that there are many ways to mitigate climate change, from individual actions like reducing energy consumption and eating a plant-based diet, to community-wide initiatives like promoting renewable energy and increasing energy efficiency. Technological innovations, economic and social transformations, and national/international actions can also play a critical role in reducing greenhouse gas emissions and adapting to the changing climate. The following projects can be executed by communities to safely mitigate the effect of climate change.

**Green Project**

Greener Projects are sustainability-focused initiatives designed to reduce environmental impact and combat climate change through strategies such as renewable energy adoption, energy efficiency, sustainable transportation, carbon sequestration, sustainable agriculture, waste reduction, climate-resilient infrastructure, education, and community engagement (IPCC, 2013; UNEP, 2020). These projects aim to cut greenhouse gas emissions, conserve resources, and promote eco-friendly practices by investing in solar, wind, and hydro energy; retrofitting buildings for energy efficiency; supporting electric vehicles and public transport; planting trees and enhancing soil conservation; and encouraging organic farming and recycling. Additionally, they foster resilience through infrastructure capable of withstanding climate threats and raise awareness by educating communities, empowering local participation, and supporting grassroots climate actions. By taking a holistic approach, Greener Projects significantly contribute to environmental protection, sustainable development, and improved public health and livelihoods.

**Wetland Conservation**

Conservation of wetlands forms a core element of greener programs owing to its numerous functions to nature, such as carbon storage, protection of biodiversity, flood protection, water purification, shore stabilization, and climate change adaptation. The wetlands ranging from marshes, bogs, fens, ponds, lakes, rivers, deltaic wetlands, estuaries, mangroves, seagrass, coral reefs, moist tundra, freshwater, and salt wetlands are among the most bio-diverse ecosystems globally (Mitsch & Gosselink, 2015; Barbier et al., 2011).

They are natural sinks of carbon, i.e., mangroves, and swamps, that store vast carbon dioxide, thereby preventing greenhouse gases, and reducing climate change (Alongi, 2014). Apart from carbon storage, wetlands also host various discrete plant and animal populations, most specifically adapted to wetland environments, while wetland loss through urbanization, industries, pollution, and climate change undermine ecosystem functions as well as biodiversity. Conservation activities should therefore encompass habitat protection, pollution alleviation, as well as land-use sustainability, as well as wetland consideration in storm protection, recharging groundwaters, pest management, as well as water quality protection, respectively, (IPCC, 2013)Not only do wetlands modulate water cycling but also independently contribute to core human needs, such as drinking, irrigation, as well as livelihood, hence amplifying ecological equilibrium as well as sustainable development (Anurag et al., 2021).

**Awareness and Community Action for a Greener Future**

Education and community engagement are essential pillars of successful Greener Projects, playing a critical role in addressing climate change and promoting sustainability. By increasing awareness through educational programs and workshops, individuals and communities are empowered to adopt eco-friendly behaviors and participate actively in environmental conservation efforts (UNESCO, 2019). Simultaneously, fostering community-led initiatives and participatory decision-making builds resilience, enhances public engagement, and supports sustainable development tailored to local needs (UNDP, 2020; UNEP, 2020).

## Theoretical Framework

### Environmental Justice Theory by Robert Bullard (1980s)

Environmental Justice Theory, coined to fame in the 1980s by Robert Bullard, asserts environmental degradation is tailored to hit at the most vulnerable members of society, such as low-income populations and indigenous populations. It reflects how environmental decision-making usually reflects and reinforces uneven distribution of burdens and benefits among people. Prominent pillars of the theory are equitable distribution of resources, real participation of people, and increasing access of involved communities to making decisions (Bullard, 1983). It focuses on empowering poor communities and engaging them in decision-making pertaining to the environment and their way of life (Foster, 2002).

Despite its significant contribution to environmental equity discussion, the theory has been faulted. It is blamed for overlooking the intrinsic value of non-human nature (Plumwood, 2002) and failing to address more fundamental concerns like capitalism and consumerism (Foster, 2002). Others fault it for its sole focus on distributive justice, claiming that environmental justice goes beyond equal distribution it is also about recognition, participation, and the environment (Schlosberg, 2007). Yet the theory remains a simple framework for describing the crossroads of social justice and environmental sustainability.

### Ecological Modernization theory by Huber (1982)

Ecological Modernization Theory (EMT), introduced by Joseph Huber in 1982, offers a constructive response to growing environmental challenges by proposing that economic development and environmental protection can be mutually reinforcing rather than conflicting goals. The theory argues that technological innovation, progressive environmental policies, and institutional reform are key drivers of ecological modernization, enabling societies to achieve sustainable development without sacrificing economic growth (Huber, 1982). EMT emphasizes the role of civil society, policy frameworks, and clean technologies in transforming industrial practices and promoting win-win solutions that benefit both the environment and the economy (Mol, 2003). In the context of climate change, ecological modernization supports a transition to a low-carbon economy by advocating for sustainable practices and clean energy technologies, which can significantly reduce greenhouse gas emissions (Hoffmann, 2011). However, the theory has faced criticism for overemphasizing technological and institutional solutions while downplaying deeper social, political, and economic inequalities. Critics also argue that EMT overlooks issues of environmental justice and equity, particularly regarding the fair distribution of environmental benefits and burdens. Despite these critiques, EMT remains a widely referenced and influential framework in environmental sociology and sustainability studies.

## Empirical Review

John (2020) conducted a comprehensive study across 24 countries to analyze the impact of renewable energy targets on greenhouse gas emissions using panel data, fixed effects regression, and instrumental variable analysis. The research found that nations with more ambitious renewable energy targets experienced an average annual reduction in emissions growth rates of about 3.5%, particularly in countries with strong institutions and political

stability. The findings suggest that setting renewable energy targets can be an effective policy tool for mitigating climate change by significantly reducing emissions.

Bob (2018), in his article *"Green Infrastructure and Urban Climate Change Adaptation"*, conducted a systematic review across 20 cities to explore how green infrastructure contributes to urban climate change adaptation. Using surveys and interviews with urban planners and policymakers, the study employed narrative synthesis and thematic analysis to examine the link between green infrastructure and climate resilience. The findings revealed that green infrastructure significantly mitigates urban heat island effects and improves air quality, highlighting its strategic value in fostering healthier, more sustainable urban environments amidst climate challenges.

Rodriguez (2020) conducted an extensive study on the impact of climate change policy on economic growth using panel data analysis based on secondary data from reputable international bodies and government reports. Applying fixed effects regression and instrumental variable techniques, the study explored the complex relationship between climate policy measures and economic performance. The findings indicated that climate policies generally have a positive effect on economic growth, particularly in countries with strong institutions and good governance, though the impact may vary depending on policy design, structure, and implementation strategies.

**Methodology**

This study adopted a qualitative research methodology to assess the impact of state-level climate change responses, a choice justified by its established effectiveness in social sciences. The population of the study was infinite, comprising adult males and females in, Nigeria, with relevant knowledge and experience. A snowball sampling technique was used to select 25 participants, a non-probability method ideal for qualitative research, ensuring access to individuals with deep insights. The sample size was determined by data saturation, meaning no new significant information emerged from further responses. Data was collected through interviews (Face to interview, phone calls, online zoom meeting) featuring open-ended questions, allowing participants to fully express their thoughts and providing the researcher with comprehensive insights into the phenomenon.

**Data Presentation**

The first research question seeks to explore: What is the impact of greener projects on climate change mitigation in Nigeria?

Through qualitative content analysis and thematic coding, key insights emerged from participant interviews. The majority of respondents affirmed that greener projects including reforestation, clean energy adoption, recycling initiatives, afforestation, and organic farming contribute significantly to climate change mitigation by reducing carbon emissions.

> One participant, an environmental scientist**,** highlighted the role of reforestation and renewable energy: *"Green projects such as reforestation and clean energy adoption have significantly reduced*

*carbon emissions in Nigeria."* A government official noted the impact of renewable energy but acknowledged challenges in its implementation: *"The government's investment in renewable energy, especially solar power, is helping to cut reliance on fossil fuels, but implementation is slow."*

Similarly, a community leader from northern Nigeria emphasized afforestation efforts: *"Afforestation projects in desert-prone areas have reduced desertification, but more funding is needed."* Another respondent, a public health specialist, pointed out the broader environmental and health benefits of green transportation:

*"Reducing air pollution through green transport has improved public health, particularly in major cities."*

These responses indicate that while green initiatives have demonstrated positive environmental and social outcomes, financial and policy-related constraints remain a significant challenge. Thematic analysis reveals that renewable energy adoption was the most frequently cited theme, followed by afforestation, green business initiatives, and policy challenges.


**Figure 1:** Key Themes Graphical Presentation

The graph illustrates that while renewable energy adoption and afforestation are regarded as key strategies for mitigating climate change in Nigeria, their effectiveness is constrained by several challenges, including weak governance, low public awareness, and insufficient funding. These barriers hinder the large-scale implementation and sustainability of green initiatives. To overcome these obstacles, targeted policy reforms, increased financial investments, and greater public engagement are necessary. Strengthening environmental

policies, improving enforcement mechanisms, and fostering community participation could significantly enhance the impact of green projects, ultimately contributing to a more sustainable and climate-resilient Nigeria.

Research question two explores: What is the effect of community awareness campaigns on climate change mitigation in Nigeria? Through qualitative content analysis and thematic coding, key insights emerged from participant interviews. The majority of respondents acknowledged that community awareness campaigns play a crucial role in climate change mitigation by increasing public knowledge, influencing behavior change, and fostering community-driven environmental initiatives. One respondent, an environmental educator, emphasized the importance of awareness campaigns in changing perceptions, stating:

> *"Many Nigerians lack basic knowledge of climate change, but targeted awareness programs help people understand its causes, effects, and the need for sustainable practices."*

This highlights the critical role of education in improving climate literacy and encouraging eco-friendly behaviours. A government official responsible for environmental policies stressed the role of media and grassroots initiatives:

> *"Radio programs, TV campaigns, and community meetings have helped spread climate awareness, but more investment is needed to reach rural populations."*

This response underscores the effectiveness of media-driven campaigns while pointing out the gap in rural outreach.

Similarly, a climate activist noted the impact of community-led initiatives in environmental conservation: *"Local awareness campaigns have led to tree-planting drives, waste recycling projects, and sustainable farming practices. However, lack of government support limits their impact."* This statement reflects the tangible outcomes of awareness campaigns while highlighting the need for institutional backing. Another respondent, a rural community leader, pointed out challenges related to misinformation: *"Some people still believe climate change is a foreign issue that doesn't affect us directly. We need better messaging to counter myths and misconceptions."* This response illustrates the persistent misinformation barriers that hinder the success of climate education efforts. An environmental journalist emphasized the role of schools in climate awareness: *"Integrating climate change education into school curricula is a long-term solution for raising a generation that understands and values sustainability."* This highlights the importance of incorporating climate awareness into formal education systems for lasting impact.

Collectively, these responses indicate that while community awareness campaigns significantly contribute to climate change mitigation, challenges such as misinformation, limited rural outreach, and insufficient government support hinder their full potential. Expanding educational initiatives, strengthening media engagement, and integrating climate change into school curricula could enhance the effectiveness of awareness campaigns in Nigeria. The thematic analysis reveals that climate change education and media campaigns

were the most frequently mentioned factors influencing awareness and behavioral change. However, misinformation, lack of institutional support, and limited rural outreach were identified as key obstacles.

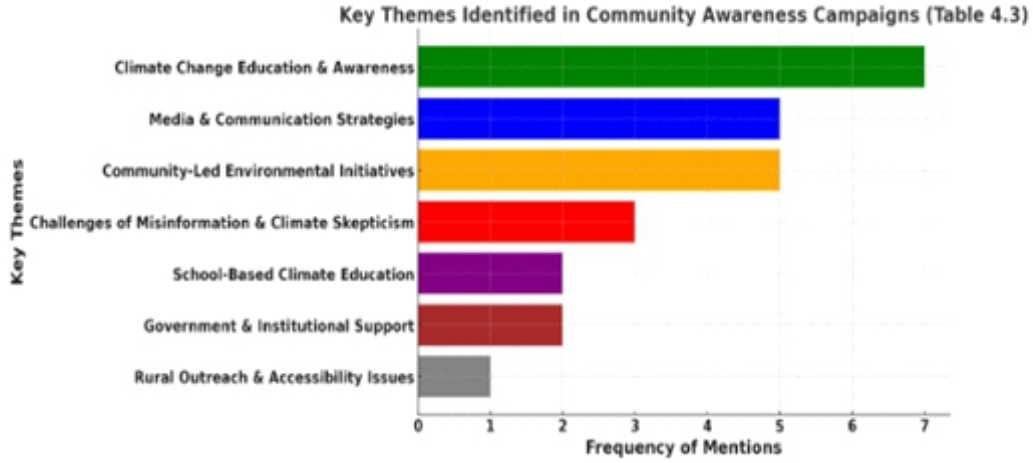


**Figure 2:** Key Themes Graphical Presentation

The graph illustrates that education, media campaigns, and community-led initiatives are the most influential factors in raising climate awareness. However, their effectiveness is constrained by misinformation, lack of policy support, and accessibility issues in rural areas. Addressing these barriers through improved educational strategies, media collaborations, and increased government involvement could enhance the impact of community awareness campaigns on climate change mitigation.

**Research Findings**

**Research Question One:** Impact of Greener Projects on Climate Change Mitigation in Nigeria

The qualitative analysis concerning the impact of greener projects on climate change mitigation in Nigeria revealed several salient themes, categorized into positive impacts, prevailing challenges, and prospective opportunities.

**Positive Environmental and Socioeconomic Impacts**

Green initiatives demonstrated a discernible positive influence across environmental and socioeconomic domains. Specifically, renewable energy and afforestation endeavors were found to correlate with reduced carbon emissions, enhanced biodiversity, and improvements in public health. Furthermore, the adoption of sustainable agricultural practices, including organic farming and soil conservation techniques, was identified as contributing significantly to climate resilience and bolstering food security. This is inlined with John (2020) who stated that setting renewable energy targets can be an effective policy tool for mitigating climate change by significantly reducing emissions. Economically, the emergence of green industries, encompassing recycling and clean energy ventures, was observed to foster employment generation and facilitate economic diversification within the Nigerian context.

**Challenges Limiting Large-Scale Impact**

Despite the observed benefits, several critical impediments restrict the widespread impact of these initiatives. A prominent challenge articulated by multiple respondents was insufficient funding, which consistently hinders the scalability and expansion of climate-friendly projects. Moreover, while climate-related policies are in existence, their weak implementation and enforcement were frequently cited as contributing to a sluggish adoption rate of green technologies. Finally, the pervasive issue of low public awareness regarding climate change was identified as a significant barrier, diminishing community engagement and participation in green initiatives.

**Opportunities for Strengthening Climate Mitigation**

Opportunities for enhancing climate change mitigation efforts in Nigeria are manifold. A key area for strategic investment lies in renewable energy, particularly the expansion of solar and hydroelectric projects, which hold substantial potential to reduce Nigeria's reliance on fossil fuels. Concurrently, strengthening governance and policy enforcement is crucial, as more effective implementation of environmental regulations would significantly enhance project sustainability. Lastly, scaling up waste management initiatives, through improved recycling programs and investment in waste-to-energy projects, presents a viable pathway to further reduce the national carbon footprint.

**Research Question Two:** Effect of Community Awareness Campaigns on Climate Change Mitigation in Nigeria

The analysis pertaining to the effect of community awareness campaigns on climate change mitigation in Nigeria similarly yielded key insights, delineated into positive impacts, persistent challenges, and strategic opportunities.

**Positive Impact on Climate Change Mitigation**

Community awareness campaigns demonstrably contribute to climate change mitigation by fostering an increased public understanding of climate issues, which, in turn, promotes the adoption of more sustainable practices. This heightened awareness often translates into community-driven environmental actions, such as localized reforestation efforts, waste management initiatives, and energy conservation behaviors. The pervasive influence of various media platforms, including television, radio, and social media, was consistently highlighted as playing a vital role in disseminating climate knowledge and encouraging pro-environmental behaviors.

**Challenges Limiting Large-Scale Impact**

Several challenges impede the widespread effectiveness of community awareness campaigns. A significant hurdle is the prevalence of misinformation and climate skepticism, leading to distrust in climate science or the perception of climate change as an externally imposed issue. Furthermore, many campaigns exhibit limited rural reach, concentrating predominantly on urban areas and consequently leaving rural communities less informed. Lastly, weak institutional and governmental support, characterized by insufficient funding and the absence of formal climate education policies, considerably diminishes the overall effectiveness of these awareness efforts.

**Opportunities for Strengthening Climate Awareness**

Opportunities exist to bolster the impact of climate awareness campaigns. Integrating climate change into school curricula is identified as a critical long-term strategy for fostering a more informed future generation. Expanding media partnerships with both mainstream and social media platforms can significantly enhance the reach and impact of awareness campaigns. Moreover, fostering community engagement programs through the active participation of local leaders and organizations can substantially improve campaign effectiveness at the grassroots level. Finally, increased policy and government support, manifested through greater investment in climate education programs and robust enforcement of sustainability policies, is essential to amplify the overall impact of awareness campaigns.

**Conclusion**

This study assessed Nigeria's state-level responses to climate change, focusing on mitigation and adaptation strategies, with particular emphasis on greener projects and community awareness campaigns in Akwa Ibom State. The findings revealed that while Nigeria has made commendable strides in implementing climate-related initiatives, these efforts remain fragmented, underfunded, and inconsistently enforced across states. Greener projects such as reforestation, renewable energy adoption, and sustainable agricultural practices have contributed to reducing carbon emissions, improving biodiversity, and enhancing public health. Similarly, community awareness campaigns have played a vital role in increasing public understanding of climate issues, inspiring behavioral change, and fostering local environmental action.

However, persistent challenges including inadequate funding, weak policy enforcement, limited rural outreach, and low public participation continue to undermine the long-term effectiveness of these responses. Many citizens remain unaware of the direct link between their daily activities and climate change, while institutional inertia and governance gaps slow down the implementation of sustainable projects. The study underscores that without coherent coordination between federal and state actors, as well as active involvement of communities and the private sector, climate change mitigation efforts will yield only limited results. Therefore, achieving a truly climate-resilient Nigeria requires a multi-stakeholder approach that integrates government policies, scientific innovation, community engagement, and private sector investment. Strengthening environmental laws and ensuring their enforcement should be prioritized alongside increased budgetary allocations for renewable energy and ecological restoration projects. Additionally, embedding climate education into formal and informal learning systems will cultivate an informed citizenry capable of driving sustainable action from the grassroots. In essence, Nigeria's path toward environmental sustainability and resilience lies not only in policy formulation but in the collective commitment to action, accountability, and adaptive governance. By aligning state responses with global best practices and ensuring inclusivity in climate initiatives, Nigeria can effectively safeguard its ecosystems, protect public health, and secure a sustainable future for generations to come.

**Policy Recommendations**

Based on the findings, the following recommendations are made:

1. **Strengthen Policy Enforcement:** The Nigerian government should implement stricter policies and regulations to ensure the success of green initiatives and renewable energy projects.
2. **Enhance Public Awareness and Education:** Climate change should be incorporated into school curricula, and media campaigns should be expanded to reach rural communities.
3. **Promote Community Engagement:** Local communities should be involved in decision-making and implementation of climate adaptation projects.
4. **Improve Infrastructure for Renewable Energy:** Investments should be made to upgrade Nigeria's energy infrastructure to support large-scale adoption of renewable energy.

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