

CLIMATE CHANGE AND ENVIRONMENTAL CONFLICTS IN PLATEAU STATE

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Abstract

The study focused on examining the relationship between climate change and environmental conflicts in Plateau State. To conduct the research, the methodology employed was the analysis of existing qualitative data, which were readily available within the study area. Various variables were analyzed to understand the intricate dynamics at play. In order to comprehend the causes of the conflicts, the study adopted the theory of deprivation, frustration, and aggression developed by Dougherty and Pfentzgraff in 1971. This theory provided a valuable framework for understanding the underlying factors leading to environmental conflicts in the region. The findings of the study indicated that Plateau State, Nigeria is indeed facing the impacts of climate change, which are significantly affecting the environment and exacerbating conflicts. The consequences are evident in the form of disrupted rainfall patterns and land degradation, further intensifying the vulnerability of the region. To address these challenges, the study proposed several recommendations. It emphasized the importance of implementing effective climate change adaptation measures in Plateau State. This could involve promoting climate-smart agricultural practices, such as conservation farming and agroforestry, to enhance resilience against changing rainfall patterns and mitigate land degradation. Furthermore, investing in water management strategies, including rainwater harvesting and small-scale irrigation systems, was identified as crucial for coping with reduced water availability caused by climate change. Such measures would contribute to sustainable water usage and minimize conflicts arising from water scarcity. In conclusion, the study emphasized the urgency of taking proactive steps to mitigate the impacts of climate change on the environment and conflicts in Plateau State. By implementing the recommended measures, the state can work towards a more sustainable and harmonious future, ensuring the well-being of its people and the preservation of its natural resources.

Keywords: Climate change, Environmental conflict, Deprivation, Frustration, Plateau State

Introduction

In recent decades, global climate change and its impact, including global warming and rising sea levels, have become significant topics of scientific discourse and public debate. The issue of climate change remains a focal point of national and international scholarship, reflecting the intricate connection between human activities, climate change, and the environment. This connection also extends to the link between environmental issues and conflicts in both developed and developing countries worldwide. The Intergovernmental Panel on Climate Change (IPCC, 2007) asserts that human activities, primarily related to the consumption of fossil fuels, are largely responsible for climate change. Although climate change will affect everyone, its effects are expected to disproportionately impact those living in poverty in developing countries. Nigeria, like other developing nations, contributes minimally to greenhouse gas emissions. Nevertheless, regardless of the level of contribution, climate change and rising sea levels will have significant local, regional, and global impacts, posing challenges to sustainable development and resource management. These challenges further exacerbate existing issues related to population consumption patterns and characteristics in many parts of Africa and other developing regions.

Man's relationship with the environment involves a tendency to modify the surroundings to fulfill personal needs and desires. However, this process often disrupts the ecological balance and gives rise to conflicts rather than fostering harmony, as noted by Dansereau (1960) in his Ecological Law of the Optimum. Conflicts between individuals and their environment, known as socio-environmental conflicts, have significantly increased in recent decades worldwide, including in Nigeria. Such conflicts arise when interdependent actors disagree on the distribution, control, use, and access to natural resources and act based on these inconsistencies. In Nigeria, environmental issues and their associated

components have gained significant attention, from policymakers and academia to local communities and the general public. A notable characteristic of these environmental issues in Nigeria is their growing unfriendliness, unsustainability, and propensity to generate conflicts (Phil-Eze, 2009). These conflicts encompass not only social and environmental aspects but also economic, cultural, and political dimensions. Multiple factors contribute directly or indirectly to the emergence of these situations, including resource overexploitation, disproportionate consumption, population growth, unequal distribution of natural resources, policy inconsistencies, and the lack of appropriate public policies.

Climate changes leading to rising sea levels, flooding, or droughts can compel people to temporarily or permanently relocate to safer areas with access to shelter, water, and food. These population shifts result in increased competition over resources such as land, food, and water, potentially leading to conflicts. Climate change impacts vary across the world, with some regions experiencing positive effects while others suffer negative consequences. Rising sea levels can flood agricultural lands and disrupt or harm fish populations, while severe weather events can also have adverse effects on agricultural areas. According to research by the US Institute of Peace (1999), Nigeria is likely to witness significant shifts in temperature, rainfall, storms, and sea levels throughout the 21st century. Inadequate adaptive responses to these shifts could contribute to violent conflicts in certain regions of the country. The report suggests that poor responses to climatic shifts result in resource shortages, such as land and water, which subsequently lead to negative secondary impacts like health problems, hunger, and unemployment. These poor responses create conditions conducive to conflicts. Migration also plays a role in climate change-induced conflict risks, as people may anticipate climate-related crises and relocate or flee trouble areas. The outcomes of such migrations can be mixed, either alleviating resource shortages or exacerbating them in both the areas migrants leave and the places they move to. This paper aims to explore the relationship between climate change, the environment, and conflict in Nigeria, specifically focusing on the context of Plateau State. The study investigates how climate change can contribute to poverty, poor health, increased migration, and the potential occurrence of conflicts.

Conceptual Framework

Climate change

Climate change refers to the long-term alteration in Earth's climate patterns, including variations in temperature, precipitation, wind patterns, and other environmental factors, primarily caused by human activities such as the burning of fossil fuels, deforestation, and industrial processes. It involves significant shifts in global weather conditions and ecosystems, leading to widespread and often detrimental impacts on natural systems, human societies, and the overall balance of the planet. Climate change is primarily driven by the accumulation of greenhouse gases, such as carbon dioxide and methane, in the Earth's atmosphere, resulting in the intensification of the greenhouse effect and the gradual warming of the planet. This phenomenon poses complex challenges and risks for biodiversity, agriculture, water resources, coastal regions, and human health, necessitating urgent collective efforts to mitigate greenhouse gas emissions, adapt to changing conditions, and promote sustainable practices to minimize its adverse effects.

Climate change is a pattern of changes that impact the global or regional climate, including factors like average temperature, rainfall, and the occurrence of extreme weather events. This variation can be attributed to both natural processes and human activities. Human activities, such as the increased release of greenhouse gases and widespread deforestation, have been identified as major contributors to climate change. These activities disrupt the balance of atmospheric gases by favoring greenhouse gases (GHGs) like carbon dioxide, carbon monoxide (CFCS), methane, nitrous oxide, and chlorofluorocarbons (CFCs) (Fawehinmi, 2007). The addition of these gases further enhances the concentration of GHGs, leading to the gradual depletion of the ozone layer in the stratosphere (Goldberg, 1994). The ozone layer serves as a shield that absorbs approximately 90% of the harmful electromagnetic energy emitted by the sun, protecting the Earth. The accumulation of greenhouse gases gives rise to the greenhouse effect, where these gases permit shortwave energy to reach the lower atmosphere but restrict the escape of longwave radiation, thus regulating the Earth's heat budget.

Concept of Conflict

Several conflict theorists and peace practitioners had defined conflict from their own perspective of intellectual and ideological orientation. They include: the sociological, philosophical, Marxian conception of conflict etc. to mention but a few. However, a number of definitions would suffice. Conflict is defined by Best (2006) as the pursuit of incompatible interests and goals by different groups. According to him, the conception of conflict, its management, and its resolution refer to terms such as peacemaking, conflict prevention, third-party intervention, and the focus on mediation, negotiation, preventive diplomacy, etc. Muluken (2020) observed that conflict in itself is neither positive nor negative, but how we manage the conflict can have positive or negative consequences in our relationships. Be that as it may, conflict is usually viewed as dysfunctional, negative, and destructive in some quarters, but it could be an integrative and constructive tool. It is essentially a function of its management and handling styles. According to Francis (2020), conflict resolution scholars argued that conflict has an ontological basis in human needs, and it is the denial which causes violent conflicts, or causes re-solvable difference to degenerate into armed violence and armed conflict. Conflict is therefore, a term that captures diverging interests or disagreements and is referred to in a number of ways, as a dispute, clash of interests, competing interests, or simply a problem.

Concept of Environment

Environment refers to the totality of extreme conditions affecting the life and development of organisms, whether on land, in the air, or in the water. It is the total surrounding environment of man, including air, water, land, natural resources, humans, etc., as well as their interaction. Sada (1988) defines the environment as a system within which living organisms interact with the physical elements. The definition of environment should be human-focused and human-centred because the condition of the environment is derived from human perception and human surroundings. Such a definition should be all-encompassing to capture all aspects of human surroundings that affect survival at a comfortable level of existence. It is only within this purview that one can understand that any attempt to violate the environment will always generate conflict (Phil-Eze, 2009).

Environmental conflict has been a major concern of world bodies such as the United Nations (UN) because of its rapid escalation across the globe. The connection between environment and conflict is rooted in the scarcity or abundance of natural resources within and between states, as well as the unequal access to these resources. In a statement on Darfur, UN Secretary General Ban Ki-Moon referred to climate change as one of the main causes of violence and conflicts taking place in the Sudanese province threatened by drought and desertification. Vos, quoted in Adeniyi (2010), observes that climate change and political problems reinforce each other. Potential conflicts will arise when people leave their homes and migrate to other places. Some would say that the Darfur crisis was caused by climate change. Although this is hard to prove, it remains a truism that countries with underlying political and social risk factors will be more vulnerable to climate change. The effects of climate change in Africa may have a direct impact on security in industrialised nations because more droughts in Africa will bring more Africans to Europe with their accompanying societal issues. Then, where people move, there will be conflicts. Thus, there is a need for a strategic, holistic, and collective response to the complexities of climate change (Adeniji, 2010). Climate change may also contribute to social disruptions, economic decline, political violence, and displacement of populations in certain regions due to effects on agricultural production, already-scarce water resources, and extreme weather events (Schwartz and Randell, 2000).

Empirical Review

Abugu and Onuba (2015) examined the relationship between climate change and pastoral conflicts as well as their effects on the human resources of both the middle belt and south-eastern Nigeria. It is ex-post-factor in nature and thus relies heavily on literature with qualitative data and a descriptive method of analysis. The study revealed that the pastoralists migrate due largely to extreme and unfavourable weather conditions occasioned by climate change. In the main, the deprivation, frustration, and aggression theory was employed to anchor the study. The paper noted that the strength of a nation lies in its resources; however, pastoral conflicts occasioned by climate change have had far-

reaching negative consequences on the resources of these regions, ranging from waste to absolute destruction and depletion of both human and material resources. The paper recommended that active and sincere government intervention through the establishment of Grazing corridors or ranches in the regions, funding of research and development, and the establishment of a regulatory framework will help stem the tide. Zitta and Madaki (2020) examine the nature and extent to which climate change has affected rainfall trends and variability in Jos. The study used 30-year annual rainfall records from the meteorological station of the University of Jos. Statistical methods such as the rainfall anomaly index (RAI), analysis of variance, and the 5-year moving average were used to analyse the data. The results revealed that Jos has a unimodal pattern of rainfall, the rainfall trend is on a downward trend, and rainfall variability has never gone above or below 400 mm with a mean of 1326.253 mm. There is a need for farmers to consider planting crops that do not require so much water, as the analysis has shown a downward trend in rainfall. Months that have much and little rainfall, namely July/August, January/February, and March, respectively, should be taken into consideration when planting.

Ani, Anyika, and Mutambara (2020) unravel the changing nature of climate change's impact on the food and human security sectors of the Nigerian State. The study is an in-depth case study that involves the use of both quantitative and qualitative data. Statistical data on climate variability in Nigeria obtained from reliable databases were used in the analysis. Also, data derived from semi-structured interviews and special reports from International Non-governmental organisations on the subject matter were used in the study. The findings of the study were based on an in-depth analysis of both primary and secondary sources of data. The secondary data were derived from existing published academic works. The primary data was developed using qualitative data that was collected from January to November, 2018 to 2019, in the different regions of Nigeria. For the south-east, primary data was collected from Abakaliki, Ebonyi State. In the South-South, primary data was collected from Asaba, Delta State. In the south-west, primary data was collected from Barutin, Kwara State. In the North East, primary data was collected from Maiduguri, while in the North West, data was collected from Gusau, Zamfara State. In the North Central, data was collected from Markurdi, Benue State. During the data collection, 48 semi-structured Key Informant Interviews (KIIs) were carried out in the six selected research areas that represented their geo-political zones. Six Focus Group Discussions (FGDs) were carried out, one for each of these six selected cities. Each of the Focus Group Discussions comprised between five and seven respondents. The idea of KIIs and FGDs is to allow the respondents to freely express their ideas comprehensively. Again, in order to get varied forms of responses, the respondents are mainly farmers, but there are also a number of NGOs, civil servants, fertiliser sellers, government officials, transporters, and elderly men and women/retirees. The findings revealed that climate change has negatively affected food security in Nigeria. It has also led to continuous armed confrontations over natural resources, thereby undermining human security in the country.

Bulus and Nimfa (2017) examine the effects of climatic change on Irish potato farming in Plateau State. The study adopted a survey design. Regression and correlation analyses were employed in testing the hypotheses. Findings revealed that frequent changes in climatic conditions have a significant impact on Irish potato farming, and temperate weather conditions improve the quality of Irish Potato farming. The effect of these changes poses a threat to food security in Plateau State. Lastly, it was discovered that there is no relationship between low levels of technology and Irish potato farming in the Plateau North and Central zones of Plateau State. It shows that a low level of technology leads to wrong weather predictions, which could negatively impact Irish potato farming. The study suggests that there is a need for an explicit national agricultural research policy framework to provide a conducive environment for continuity and effectiveness in agricultural programmers' projects for increased Irish potato farming. The Nigerian government should take a bold step to establish better-equipped weather stations and high-tech machines as opposed to the scanty and ill-equipped ones. With this, accurate weather forecasts and predictions will be possible, which will help prevent weather-related disasters through early warning and an effective response or adaptation system.

Theoretical Framework

The study adopts the theory of deprivation, frustration, and aggression developed by Dougherty and Pfentzgraff in 1971. This theory, originally proposed by Mac Dougherty in 1937, suggests that aggression is always a result of

frustration, and the occurrence of aggressive behavior always implies the presence of frustration. Applying this theory to the study of the impact of climate change on the environment and conflicts in Plateau State, we can explore how frustration resulting from climate change may contribute to aggressive behaviors and conflicts in the state. Climate change can lead to various forms of environmental degradation, such as droughts, floods, deforestation, and resource scarcity. These changes can have detrimental effects on communities and their livelihoods in Plateau State. For instance, prolonged droughts can lead to water scarcity, reduced crop yields, and loss of livestock, causing economic hardships and food insecurity. Similarly, extreme weather events like floods can destroy homes, infrastructure, and agricultural lands, further exacerbating the vulnerability of communities.

The frustration resulting from these climate-related challenges can manifest in different ways. Individuals and communities may experience anger, stress, and a sense of helplessness when their basic needs are not met or when they face difficulties in adapting to changing environmental conditions. This frustration, combined with other factors, can contribute to an increase in aggressive behaviors. Aggressive behavior, as defined by Dougherty and Pfentzgraff, involves actions with the intent to harm, which can be both physical and non-physical. In the context of climate change in Plateau State, this aggression can manifest in different forms. It may involve conflicts over access to limited resources like water and fertile land, leading to disputes between communities or even violence. It can also include non-physical forms of aggression, such as verbal confrontations, social tensions, and psychological distress caused by the uncertainty and insecurity brought about by climate change.

By adopting the theory of deprivation, frustration, and aggression, the study can examine the relationship between climate change-induced frustration and aggressive behaviors in Plateau State. It can explore how the experiences of frustration due to environmental degradation and resource scarcity contribute to conflicts, both at the interpersonal and communal levels. The study can also investigate the potential mitigating factors that could help reduce aggression and conflicts, such as community resilience, adaptive strategies, and sustainable resource management practices. The theory of deprivation, frustration, and aggression provides a framework to understand the potential impact of climate change on the environment and conflicts in Plateau State. By applying this theory, the study can delve into the relationship between climate-induced frustration and aggressive behaviors, shedding light on the underlying dynamics and informing potential strategies for conflict prevention and resolution in the face of environmental challenges.

Methodology

The methodology adopted for this study is the analysis of existing data. Therefore, qualitative data, which already exist largely within the study area and variables, are analysed. The study is taking a cue from the work of renowned sociologist Emile Durkheim, first popularised by the study of the prevalence of suicide among Catholics and Protestants, by analysing data that already exists at police stations (Omale, 2014). The study attempts to analyse data that largely already exists on climate change and environmental conflict in Plateau State. Research design is a plan, a blueprint, and a conceptual structure for the collection, measurement, and analysis of data for a study. Essentially, this study focuses on climate change and environmental conflicts in Plateau State.

The reviewed studies revealed that Plateau State, located in central Nigeria, is known for its diverse ecosystems, agricultural productivity, and cultural heritage. However, like many other countries around the world, Plateau State, Nigeria is also experiencing the impacts of climate change, which are having significant effects on the environment and contributing to conflicts.

Some key impacts of climate change on the environment and conflicts in Plateau State:

- **Changing rainfall patterns:** Climate change has resulted in altered rainfall patterns in Plateau State, leading to more frequent and intense droughts and floods. These changes affect agricultural productivity, water availability,

and food security. Droughts can lead to crop failures, livestock losses, and increased vulnerability for farmers, exacerbating poverty and economic instability.

- **Reduced water availability:** The changing climate has caused a decrease in water availability in Plateau State. As temperatures rise and precipitation patterns shift, water sources such as rivers, streams, and groundwater reservoirs are being affected. This scarcity of water resources can create conflicts among different user groups, including farmers, herders, and communities dependent on water for domestic purposes.
- **Land degradation:** Climate change impacts, such as increased temperatures and altered rainfall, contribute to land degradation in Plateau State. Soil erosion, desertification, and deforestation are common consequences, leading to loss of fertile land, decreased agricultural productivity, and habitat destruction. Competition over diminishing resources can trigger conflicts between farmers and herders or between communities.
- **Displacement and migration:** Climate change-related impacts, such as droughts, floods, and land degradation, can force communities to leave their homes in search of more favorable conditions. This displacement and migration can increase competition for resources and exacerbate existing tensions between different ethnic or social groups in Plateau State, leading to conflicts over land, water, and other livelihood resources.
- **Livelihood disruptions:** Climate change affects traditional livelihood systems in Plateau State, especially those dependent on agriculture, pastoralism, and natural resource extraction. Decreased crop yields, loss of grazing land, and reduced availability of forest resources can disrupt livelihoods and economic activities, creating social and economic tensions within communities.
- **Intercommunal conflicts:** The combination of climate change impacts, resource scarcity, and competition can contribute to intercommunal conflicts in Plateau State. Conflicts between farmers and herders over access to land and water resources have escalated, leading to violence, loss of lives, and the displacement of communities. These conflicts are often exacerbated by existing social, economic, and political factors.

Addressing the impacts of climate change and conflicts in Plateau State requires a comprehensive approach that includes sustainable land management practices, climate-resilient agriculture, water resource management, conflict resolution mechanisms, and community engagement. Efforts should focus on building resilience, promoting adaptive strategies, and fostering dialogue among different stakeholders to mitigate the environmental and social consequences of climate change in the region.

Conclusion and Recommendations

In conclusion, the reviewed studies highlight that Plateau State in central Nigeria, known for its diverse ecosystems, agricultural productivity, and cultural heritage, is facing significant challenges due to the impacts of climate change. The changing rainfall patterns, including more frequent droughts and floods, have adverse effects on agricultural productivity, water availability, and food security. The scarcity of water resources has led to conflicts among different user groups, such as farmers, herders, and communities reliant on water for domestic purposes. Climate change-related land degradation, including soil erosion and deforestation, further exacerbates conflicts between farmers and herders or among communities competing for diminishing resources. Additionally, climate change-induced displacement and migration increase competition for resources and tensions between different ethnic or social groups, resulting in conflicts over land, water, and livelihood resources. The disruptions to traditional livelihood systems, including agriculture, pastoralism, and natural resource extraction, intensify social and economic tensions within communities. Ultimately, the combination of climate change impacts, resource scarcity, and competition contributes to intercommunal conflicts in Plateau State, leading to violence, loss of lives, and the displacement of communities. Addressing these challenges requires integrated approaches that consider both climate change mitigation and adaptation strategies, as well as addressing underlying social, economic, and political factors to promote sustainable development and peace in Plateau State.

Based on the findings, here are three strong recommendations:

1. **Enhance Climate Change Adaptation Measures:** Implementing effective climate change adaptation measures is crucial for mitigating the impacts on the environment and conflicts in Plateau State. This could involve promoting

climate-smart agricultural practices, such as conservation farming and agroforestry, to improve resilience to changing rainfall patterns and land degradation. Additionally, investing in water management strategies, such as rainwater harvesting and small-scale irrigation systems, can help mitigate the effects of reduced water availability. Strengthening early warning systems and disaster preparedness plans can also enable prompt responses to extreme weather events, reducing the negative consequences on communities.

2. Promote Sustainable Resource Management and Conflict Resolution Mechanisms: Encouraging sustainable resource management practices can help alleviate competition and conflicts over diminishing resources. Implementing land-use planning strategies that consider the ecological carrying capacity, promoting reforestation and land restoration initiatives, and establishing protected areas can safeguard the environment and reduce conflicts between farmers and herders. Moreover, fostering inclusive dialogue and conflict resolution mechanisms that involve all relevant stakeholders, including community leaders, government agencies, and civil society organizations, can help address intercommunal conflicts and promote peaceful coexistence.
3. Diversify Livelihood Opportunities and Support Vulnerable Communities: Climate change often disrupts traditional livelihood systems, making it crucial to diversify economic opportunities and support vulnerable communities in Plateau State. This could involve promoting alternative income-generating activities, such as eco-tourism, renewable energy projects, or non-farm enterprises. Providing access to credit, technical training, and market linkages can empower communities to adapt to changing conditions and reduce their dependence on climate-sensitive sectors. Additionally, focusing on social protection programs that target the most vulnerable populations, including displaced communities and marginalized groups, can help build their resilience and ensure their basic needs are met during climate-related disruptions

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