

Climate Change, Resource Scarcity and Pastoralist-Farmer Conflict in North Central, Nigeria

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Abstract

Pastoralist-farmer conflict has been a perennial security challenge in Nigeria. The conflict has led to the destruction of human lives and property, and spiral displacement of people with associated humanitarian crises. Several factors such as encroachment of farming routes, rape, religion and incessant migration have been adduced to predispose farmers and pastoralists to endemic violent conflicts. However, the roles of unmitigated climate change and resource scarcity in perpetuating the conflict have been given scanty scholarly attention. The paper examined the interplay among climatic change, resource scarcity and incessant conflict between the two agricultural groups. The eco-violence theory was adopted as an explanatory framework to anchor the paper. The paper relied on secondary sources of data. It maintained that unmitigated climate change and its associated drought remotely cause the pastoralists to migrate in search of pastures, thereby pitching them against the crop farmers. It recommended that more awareness should be created on the danger climate change poses to humanity. There is a need for public-private partnership to establish ranches for the cattle rearers in their domains in order to reduce constant migration.

Keywords: Climate change, Conflict, Environmental management, Pastoralist-farmer conflict and Resource Scarcity,

Introduction

Pastoralist-farmer conflict is one of the security dilemmas confronting Nigeria in the fourth republic. Apart from Boko Haram insurgency ravaging the North-East which has taken its toll on the socioeconomic development of the country, pastoralist-farmer conflict has assumed a much more dangerous phenomenon with devastating effects. In the time past, the herders and farmers had enjoyed symbiotic relationships in form of ecological and

exchange linkages. However, occasional disputes occurred which were amicably resolved to give room for peaceful co-existence between the two agricultural groups.

The persistent and destructive nature the conflict between the two groups has assumed leaves much to be desired as the political leaders and other stakeholders remain helpless in ensuring peaceful resolution of the conflict. In the North Central Nigeria, Benue, Taraba, Nasarawa and Plateau states have witnessed instability and economic stagnation as a result of recurrent and intractable conflicts between farmers and herders. Between 2010 and 2015, Nigeria lost 6,500 citizens and 62,000 others were displaced from their homes in 850 violent clashes between herdsmen and farmers in the North Central Nigeria (Njoku, 2018). Several factors such as encroachment of farming routes, rape, religious sentiments, migration, crop destruction, indigeneship/settlership conundrum, cattle rustling and rural banditry have been adduced to cause the conflict.

In spite of the efforts of different stakeholders such as community leaders, village heads, local government chairpersons, security agents, civil society groups and pastoralist leaders in making efforts to resolve the conflict, it has become intractable with attendant destruction of lives and properties, and disruption of social and economic activities in the affected states. Not only that, the cycle of displacement caused by the violent conflict with its risks and vulnerabilities arising from it has attracted global attention. As a matter of fact, the extent to which the climate change and resource scarcity can cause pastoralist-farmer conflict has not been exhaustively explored. It is against this backdrop that the paper sought to interrogate the connection between climate change, resource scarcity and pastoralist-farmers conflict ravaging some states in the North Central Nigeria.

Clarification of Concepts

Climatic change

Climate change is as old as human existence and it is a global phenomenon that has gained prominence in the 21st century. Like other global issues such as HIV/AIDS, Ebola virus, economic meltdown and terrorism, climate change has drawn much global attention due to its devastating effects on mankind. Climate change can be a slight or extreme differences in the range of conditions expected in a particular region as a result of human activity or natural processes linked to the atmosphere, oceans and land, as well as variations in heat output from the sun (Ontario, 2018). The changes could be in the form of significant increase in the average temperature of the earth. According to Binghamton University (2019), global climate change is predicted to increase the prevalence of extreme cold

temperature events as temperature fluctuations. Climate change can be defined as the global phenomenon which involves climate transformation characterized by changes in the usual climate of the earth caused by human activities. It can also be defined as a broad range of global phenomena caused by burning fossil fuels, which add heat-trapping gases to earth atmosphere (National Association and Space Administration (NASA) (2014).

Climate change also connotes change in the state of climate which can be identified by change in the mean and or variability of its properties which persist for an extended period of time. It occurs when long-term weather patterns are altered through human activities. It can also be viewed as a change in the statistical properties of the climate system that persists for several decades or longer. It can occur as a result of natural processes such as changes in the sun radiation, volcanoes or internal variability in the climate system (Gahlau, 2018). Furthermore, climate change is a change in the pattern of weather and related changes in oceans, land surfaces and ice sheets, occurring over a time scale of decades or longer. The United States Environmental Protection Agency (USEPA)(2016) maintained that the earth 's temperature depends on the balance between energy entering and leaving the planet system. When the incoming energy from the sun is absorbed by the earth system, the earth warms; when the sun's energy is released back into space, the earth cools. For there to be a favourable climatic condition, a degree of equilibrium must exist between the incoming energy from the sun to the earth and sun energy that is released back into space.

The Intergovernmental Panel on Climate Change (IPCC)(2007) argued that, in order to limit the dramatic consequences of climate change, global average temperature must be below 2°C. Furthermore, the global land and ocean surface temperature for January 2020 was the highest in 141-year record, a temperature from average of 1.14 °C and 2.05°C. The combined global land and ocean surface temperature for 2018, 2017, 2016 and 2015 were recorded to be 0.83°C, 0.84°C, 0.94°C and 0.90°C respectively (National Association and Space Administration (NASA)(2019). It is important to note that climate change cuts across all human endeavours, therefore, it is an unpredictable potential hazard which may trigger civil unrest in every aspect of human life.

In consonance with this view, Okem (2017) opined that climate change affects the energy sector, water supply, transportation, ecology and other infrastructure that are critical to the functioning of modern societies, disrupts local economies and strips populations of their livelihoods and therefore leading to mass migration. On the other hand, human activities in the 20th century have been the dominant cause for climatic change. Human activities like burning fossil fuels like coals, oil and gas, cutting down of rainforests (deforestation),

increasing livestock farming, application of fertilizers containing nitrogen, fluorinated gases and bush burning, influence changes in climatic condition (European Union Climatic Action, 2012; NASA, 2018). Changes in climatic condition occur when enormous amounts of greenhouse gases are released in addition to existing natural gases in the atmosphere, which often leads to the greenhouse effect and global warming (European Union Climatic Action, 2012). The European Union Climatic Action (2012) further maintained that many of the gases occur naturally and are readily present in the atmosphere, therefore human activity significantly increases the amount of greenhouse gases and this consequently degenerate into overconcentration of carbon dioxide (CO₂), methane, nitrous oxide and fluorinated gases in the atmosphere. From the foregoing, it could be deduced that continual increase in world population, coupled with civilization, technological advancement, industrialization and other activities related to human exploration are capable of changing the natural greenhouse composition by increasing concentration of its gases.

Resource Scarcity

Resource scarcity can be referred to as dearth or rarity of resource as a result of the decline in the quality, availability or productivity of natural resources, which may consequently result in reduction in social or economic well-being. Thus, it has to do with lack of adequate natural resources needed to meet man's physiological, economic and social needs in their respective environment. According to Tevjan (2019), resource scarcity is a situation where demand for natural resource is exceeding the supply, leading to the decline in the availability of such resources. Resource scarcity can also be exacerbated by climate change, deforestation, and other forms of environmental damage.

Resource scarcity has to do with diminishing availability of renewable and non-renewable resources in any society. Environmental scarcity as a precursor to violent conflicts was propounded by Homer-Dixon who advanced the eco-violence theory to explain how diminishing environmental resources can be a remote cause of conflict particularly pastoralist-farmer conflict. Shortage of environmental resources can be caused by structural, ecological, demand and supply-induced and resource capture. Demand-induced scarcity can arise due to increased population and consumption rate of natural resources. Between 1950 and 2000, there has been exponential increase in the population in sub-Saharan Africa from 177 million to 657 million placing a lot of pressure on available resources that are being confronted with climate variability. Climate change affects the availability of four major resources that are used by pastoralists and farmers and such include freshwater, cropland, forests and fish. Supply-induced scarcity occurs when

natural resources are too much in supply, there will be saturation and if not properly preserved, managed and utilized, there will be a period where no resources will be available or scarcity will exist, then, competition begins which can lead to clashes among groups. When there is an excessive supply of natural resources and there is no mechanism for renewal or replenishing, it leads to scarcity. The users tend to misuse and waste the resources without considering its utility in the near future. As regards the use of natural resources by the pastoralists, they tend to over-use the available natural resources without replenishing them and when there are no resources they adopt migration as an adaptive lifestyle. Overgrazing of environmental resources by herders leads to tragedy of lack of renewable resources which has been the experience of man. Structural scarcity can be a product of poor resource governance or it can also be experienced in a functional system where inequity prevails. Structural scarcity predisposes the two agricultural groups to conflict. Unequal access to the available natural environmental resources makes them scarce to different groups in the society. To Mathew (2008), resource scarcity can be viewed from three perspectives, namely: non-availability of resources to satisfy human basic needs, consumption at the current or higher levels and in terms of actual demand of both human and non-human species. If pastoralists do not have access to the grazing land or lacks access to land to rear animals because of the fact that they are considered strangers or non-indigenous as the experience of the herders show in many West African nations, structural scarcity is created. If resources are inequitably allocated or distributed among groups in the society, a dysfunctional system is created that will serve the interest of a group in the society.

Theoretical Framework

The Eco-violence Theory

The study adopted eco-violence theory as its explanatory framework. The major exponents of the theory are Thomas Homer-Dixon and Jessica Blitt, while Peter Gizewski, Philip Howard, Kimberly Kelly and Valerie Percival made tremendous contributions to its advancement. It has its epistemological root in the political ecology theory. The theory explains that there is a linkage between environmental issues and human relation or social conflict in the society. From the view of Homer-Dixon (1999), decrease in the quality and quantity of renewable resource, population growth and resource access act singly or in various combinations to increase in the scarcity of cropland, water and forests. According to Homer-Dixon and Blitt (1998) eco-violence explores links between environmental scarcities of key renewable resources such as cropland, fresh water, forests and violent

rebellions, insurgencies, and ethnic clashes in developing countries. In relation to pastoralist-farmers, conflict in Nigeria, changes in climatic conditions which often results to drought and famine prompts herders to move from a particular region to another in search of vegetal plants to feed their cattle. This increase in movement of migratory herders and encroachment of grazing routes by crop farmers, coupled with other illicit acts, non-adherence to the norms of the farming communities, religious intolerance and rape helps in worsening the conflict.

Adebajo (2018) contends that agricultural farmers and the pastoralist groups had a cordial and stable relationship that enable the people to work side by side for decades. However, it has been argued that the conflict between the pastoralists and farmers can be understood from the perspective of environmental degradation, irregular rainfall that has placed constraints on grassland, crop production and rapidly growing population leading to fierce competition for land and its resources. On the other hand, the theory has been criticized for its inadequacies. One of the inadequacies of this theory is that it has placed too much emphasis on environmental factor responsible for the conflict without considering ethnic differences, religious factors and other external influences responsible for the conflict between the two agricultural groups. There is no consensus among the scholars as regards the empirical evidence that links drought and violent conflict. Also, Hagmann (2005) debunked the eco-violence theory for relying on preconceived casualties, intermingling eco-centric with anthropocentric philosophy, neglecting the motivations and subjective perceptions of local actors. The theory is applicable to this study because it analyses how climate change causes resource scarcity which predisposes farmers and pastoralists to engage in incessant conflicts.

Pastoralist-Farmers conflict in the North-Central Region of Nigeria

Pastoralist-farmer conflict has been one of the contentious issues confronting the country in recent times. The conflict is a form of wrangling between migratory herders who move their cattle from one geographical location to another in search of water and grassland for feeding their cattle. The conflict is mainly between the sedentary crop farmers and the nomadic cow herders of Nigeria's middle belt, where competition over diminishing land and water resources has turned lethal with devastating effects on socio-economic wellbeing of people. Pastoralism is an agricultural practice characterized by mobility, adaptation, flexibility, diversification and mutual support (Dong, 2016). Therefore pastoralist raise, tend and care for their livestock using all means available, regardless of time and place. By so doing, they often migrate from one particular region to the other in search of

grassland to feed their cattle. The search often degenerates into encroachment of farm lands used by the farmers for farming activities. However, the encroachment of farm land and the conflicting interest of the two opposing groups have consequently resulted in violent clashes and reappraisal attacks between farmers and herders.

Herder-farmer crisis is a form of inter occupational wrangles and conflict between the two main agricultural practitioners in the country, the farmers and pastoralists. The conflicts are caused by the resistance of farmers to encroachment of their farmland by the herders and their cattle in the course of their persistent search for greener pasture. However, counter reaction by the armed herders often makes the clashes more devastating. The devastating effect of the conflict is not only limited to the affected areas, as it has reverberating effects on availability of food items and commodities, considering the fact that the central region is believed to be at the fore of agriculture and food production in the country.

Pastoralist-farmer conflict has become a menace in Nigeria, particularly in the North Central and some pockets of states in the country. The Global Terrorism Index ranked Nigeria as the third most terrorized country in the global system due to the devastations wrought on human lives as a result of the two deadly violent conflicts. While the Nigeria's Fulani herdsmen were rated as the world's fourth deadliest militant group for causing the death of about 1,229 people in 2014 in Nigeria (Buchanan, 2015). Since 2011, the conflict has reached the highest apogee with damning and devastating consequences. In many rural areas in the North Central Nigeria, the pastoralists have engaged in violent clashes with their host communities over the destruction of crops, contamination of water points such as streams, indiscriminate defecation by the cattle, sexual assaults of women in the host communities, farmers' encroachment on the cattle routes, extortion of money by the task force, cattle rustling, rural banditry, differences in cultural, religious and social values.

Relationships between pastoralists and farmers began to strain since 2001 resulting in violent conflicts in Jos, Plateau State. Areas in Plateau state such as Jos South, Riyom, Langtang South, Barkin Ladi and Wase have witnessed orgy of violence between the two agricultural groups leading to loss of lives and properties (Adebajo, 2020). Between 8th and 18th October, 2017, six villages in Bassa were severely attacked by the armed pastoralists which led to the death of fifty people (Amnesty International, 2018). As if that was not enough, in 2018, eighty-six people were massacred among the Berom farmers during pastoralist-farmer conflict in Plateau state (Amnesty International, 2018). In Kogi state, there was an invasion of the communities by the pastoralists which caused devastating consequences. Communities such as Agojeju-Idaka in Dekina L.G.A, Egbola in

Igalamela/Odolu L.G.A and Umoni in Ofu LGA in Kogi state experienced incessant conflicts between farmers and herders. Amuro in Nnopa Maro in Kogi West was also destroyed in revenge attacks over the killing of seventy cows by the community members (Idakwoji, Ojomah, Usman and Orokpo, 2018). Kwara state is not spared from the decimating effects of the conflict. According to Adebajo, (2020) attacks and reprisal attacks have characterized what used to be a symbiotic relationship between the herders and the host communities. For instance, in Alapa in Asa LGA, Oro Ago in Ifelodun LGA, Motogun in Patigi LGA, Obbo Ajegunle in Ekiti LGA, Isin LGA and Odo-Owa in Oke-Ero LGA were destroyed by the conflict. Although, the conflict has been perceived as mere agricultural and resource based, but there are several underlying forces perpetuating it such as the indigeneship/settlership conundrum, ethnicity, impoverishment of the conflict groups and external influences supported by the supply of ammunitions which made the clashes to look like the terrorist attacks in many instances where they occurred (Adebajo, 2018). The intensity and casualty of the conflict are more pronounced in the North Central Nigeria, which also refers to the Middle Belt. The orgy of the conflict between the Christian farmers and Muslim pastoralists has further exacerbated the already overstressed the insecurity situations in the region. The most affected states are Benue, Taraba and Nasarawa due to the intensity, gravity and number of casualties. In Benue state, between 2014 and 2016, eleven local government areas were under persistent attacks by the herdsmen causing the death of 4,194 Christians while 2,957 were injured (Ngbea and Ngbea, 2019). On the other hand, the pastoralists lost 214 people and 3200 cows (Ngbea and Ngbea, 2019). On January, 2018, 73 people were hacked down in Benue state in a violent reaction by the pastoralists against the implementation of the anti-grazing law by Governor Samuel Ortom of Benue state (Sarwuan, 2018). In Nasarawa state, pastoralist-farmer conflict has occasioned community disintegration, social disarticulation, destruction of lives and property and the cycle of displacement with associated risks and vulnerabilities (Adebajo, 2020).

Apart from posing serious threat to national security, the incessant clashes between herders and farmers have also affected human security, especially in areas of food security, employment, wealth creation and peaceful co-existence among the inhabitants of the affected communities in the region. Since 2018, the clashes have spread to other parts of the country such as Zamfara, Rivers, Ekiti, Enugu, Ogun, Bayelsa, Delta, Oyo and Kwara states. The clashes between the two groups have caused the death of more than 10,000 people in the last decade, almost 4,000 of them in the last two years alone (Amnesty International, 2018). Also, between 2010 and 2015, Nigeria lost 6,500 citizens and 62,000

others were displaced from their homes in 850 violent clashes between herdsmen and farmers in the middle Belt region of the country (Njoku, 2018). In January 2018 alone, 168 people were killed as a result of herdsmen-farmer clashes, while over 18,000 people were internally displaced in 11 camps in Nasarawa state (Ugwumba, 2018). It is worthy of note that incessant clashes have also led to increase in interstate migration, which can lead to overpopulation at the receiving host communities that are relatively safe. The prices of food materials have increased in the affected states while displacement problems have escalated because of the influx of people from the Benue state to the Neighbouring states while those that remain in the villages are afraid to travel to farms in remote locations due to fear of being raped or killed.

Climatic change, Resource scarcity and Pastoralist-Farmer Conflict in North Central Nigeria: The nexus

Climate change has become one of the global issues affecting humanity. The negative effects of climate change and its variability cannot be underestimated in many West African states particularly Nigeria. In the Northern part of Nigeria, climate change has constituted a security risk in the 20th century. As noted by Agbegbedia (2015), between 1930s and 1950s, acute drought has been witnessed to having negative impacts on human and animal lives, and also increasing incessant migration by the pastoralists from the arid West African nations such as Mali, Niger, Cote'd Ivoire to North Central Nigeria rich in water, grasses and other environmental resources. Climate change affects availability of water, grasses and other natural resources. For instance, the drought that occurred between 1970s and 1980s as a result of climate change led to stiff competition of resources between pastoralists and farmers. Every form of ecological complementarity between the two agricultural groups was under stress. There is shortage of annual rainfall needed for the growth of grasses and water supply for the pastoralists use. Due to climate change, soil erosion, flooding and depletion of soil fertility has made farmers to move from one place to the other, thereby encroaching the grazing routes and grazing reserves of the pastoralists (Conroy, 2017). As a result of climate change, annual rainfall has been affected leading to scanty grasses which the pastoralists need (Audu, 2014).

Climate change has led to environmental degradation in the Northern Nigeria. The persistent climate change has increased non-availability of natural resources, causing herders to move from other parts of Nigeria. In terms of water availability, climate change has already reduced its supply drastically affecting agricultural production. Despite the Nigeria's National Agency for the Great Green Wall initiative to establish tree plantations, build water-retention ponds and other basic infrastructures to enhance

agricultural productivities, nothing has been achieved which further pushes the pastoralists south ward causing conflict with the farmers. Increasing evapo-transpiration, temperature, desertification, land degradation, extreme weather related events like lightning, thunderstorms, floods, landslides, droughts, bush fires, among others, have recurrent phenomena in Nigeria (Ikpe, Sawa and Ejeh, 2017). For instance, in Katsina, Sokoto, Maiduguri and Kano, increasing temperature and decreasing rainfall in the recent time have caused desertification and droughts causing pastoralists to migrate (Ikpe, Sawa and Ejeh, 2017).

Change in climatic condition has significantly contributed to the problem of resource scarcity in most countries of the world, especially in developing countries like Africa where the effect of climate change has been more devastating. The irreversible negative impacts of climate change manifest in the form of droughts, floods, outbreak of diseases, incessant migration and food shortages. When the farmland becomes infertile, it leads to stunted growth of green plants, therefore making it difficult for both man and animal to meet their nutritional and economic needs (Haider, 2019). In view of this, changes in climatic conditions and scarcity of natural resources like water and grazing land have been adduced to be factor responsible for the incessant clashes between farmers and herders in the North Central region of Nigeria.

Corroborating the view that climate change and resource scarcity constitute significant factors causing incessant clashes between the pastoralists and farmers, Anastasia (2018) argued that the scarcity of natural resources had led to conflict triggered by competition over the meagre resources available. This is because the imbalance between human needs and food availability, as predicted by Malthus can lead to famine, disease and war (Matthew, 2008). While the imbalance between human needs and the available resources could be referred to as the lack of enough natural resources like water, grazing land and infrastructural facilities needed by the two conflicting agricultural practitioners and this has degenerated into violent clashes in the North-central region. There is always intense struggling between two agricultural groups over water and other resources. Continuous deforestation without replacement exacerbates climate change issues. Clearing forests for farming, burning crop residues, raise large herds of cattle, fertilizing with nitrogen, release gases to the atmosphere and all this affects environmental growth and development (Agbegbedia, 2015).

Lack of freshwater as a result of insufficient rainfall caused by persisting climate change without any mitigating measures has led to migration of pastoralists pitching them against the farmers. Due to scarcity of water, farmers also extend their activities into the areas

considered fertile which are also used by the pastoralists especially fadama areas. As noted by Haider (2019), the Sahara desert has taken over 35% of the landmass in Nigeria, which further extends to the South at the rate of 0.6% kilometer a year, coupled with deforestation taking place at 3.5% per year (Conroy, 2017). The implication is that Nigeria is being affected by the climate change making it to lose about 2,168 square kilometers of crop lands to desertification, affecting means of livelihood of about 40 million people (Aremu and Abraham, 2018). Since the beginning of the 19th century, there has been a shortage of rainfall in the core North of Nigeria affecting crop yield. In the Northern states of Nigeria like Borno, Gombe, Bauchi, Kaduna, Jigawa, Kano, Sokoto, Kebbi, Yobe and Zamfara, there has been a 450% increase in the sand dunes due to climate change (Conroy, 2017). 35% of the land cultivated about fifty years ago is not useful for farming activities constituting a threat to the economic survival of the pastoralists (Conroy, 2017).

The unmitigated effects of climate change have created a dearth of environmental resources like water, pasture and habitable ecosystem which has predisposed both farmers and herders to adopt migration as a coping strategy. The farmers have adopted shifting cultivation as a coping mechanism to avoid infertility of the soil caused by degradation and droughts, but the effect of this is an encroachment of grazing routes (*burtali*) and grazing reserves. The prevalent and recurrent pastoralist-farmer conflict in the North central region of Nigeria is as a result of the unmitigated climate change and its variability leading to scarcity of environmental resources acting as a pushful factor to the herdsmen embarking on persistent migration across nations in order to escape the negative effects of droughts and desertification. For instance, the Fulani herdsmen maintained that they move around the country and national boundaries simply because of the vicissitudes of climate change and resource scarcity. As a matter of fact, the influx of the pastoralists into the North Central states such as Benue, Nasarawa, Plateau, Kogi, Kwara and Taraba is to have access to natural resources. In Benue state particularly, River Benue and Katsina Ala and their tributaries make water supply available for agricultural purposes and they tend to attract the pastoralists who need the water resources for their cattle. In the course of accessing the environmental resources such as water and grasses, crop destruction ensues and when there is no appropriate mechanism to manage any dispute arising there from, violent conflict erupts leading to loss of lives and properties. It must be pointed out that there is scarcity of natural resources in the Northern region which happens to be the abode of the herders necessitating their constant migration from the arid north to sub humid South. The operation of the two conflicting agricultural practitioners in the North Central region with the same need and clashing interest has been the basis of violent clashes and reprisal attacks

in the region. The failure of government and other key actors to take pro-active measures in addressing issues of change in climate and resource scarcity have made pastoralist-farmer conflict to become more intractable causing more destruction to lives, property and massive displacement of people in the North Central Nigeria. It has continuously given room for criminality, violent communal clashes, cultural discrimination, ethnic hatred, political inequalities and occupational differences between the two opposing agricultural practitioners.

Conclusion

The study has examined the connection between climate change, resource scarcity and incessant destructive pastoralist-farmer conflict in the North Central Nigeria. The unmitigated climate change causes drought, desertification and scarcity of environmental resources. Resource scarcity forces herders to move from one place to the other in search of the ecological resources which are dwindling drastically as a result of a harsh climate change thereby increasing the preponderance to violent conflicts with farmers. The pastoralists adopt migration as an adaptive strategy to protect their economic interest. When economic interest of the two agricultural groups are threatened, conflict becomes inevitable. Lack of conflict management mechanisms has made the conflict intractable generating socioeconomic challenges in the affected states.

Recommendation

Based on the findings of the study, the following recommendations are suggested;

- i. There is a need to enforce environmental protectionist policies to combat human activities which are not eco-friendly, but contribute to increasing climate change in the area.
- ii. The introduction of mobile courts for the immediate prosecution of those in the habit of degrading the environment through bush burning, deforestation and water pollution and this should be carried out by government at all levels in order to ensure compliance.
- iii. More awareness should be created at formal and informal educational levels on the danger climate change constitutes to humanity, particularly on how it can cause violent conflicts. This can be better achieved through introduction of climate change education in the school curriculum as a general study subject from primary to tertiary level of education.

- iv. Deforestation should be rigorously campaigned against by the National Orientation Agency and non-governmental organizations. Efforts should be intensified on the importance of afforestation in curtailing incessant climate change and associated challenges.
- v. As industrial activities can be responsible for the emission of green house gases like carbon dioxide into the atmosphere, it is important that the government encourages the use of hydro and solar energy machines so as to reduce the emission of carbon dioxide into the air.
- vi. Industrial firms should incorporate afforestation into their corporate social responsibility in order to minimize the negative effects of industrial gas emission.
- vii. Considering the fact that climate change and resource scarcity prompt pastoralists to migrate across national borders, public-private partnership should be encouraged in establishing ranches for the pastoralists. Farmers can also engage in the business of planting grasses for sale to the pastoralists to generate income.

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