ISSN 2277-0186

https://www.njrcs.org

A Publication of the Department of Religion and Cultural Studies, University of Nigeria, Nsukka, Enugu State, Nigeria

Assessing the Role of the Government in Addressing the Problem of Climate Change in Nigeria

Author:

Emmanuel K. Okonkwo @

Affiliation:

Department of Religion and Cultural Studies, University of Nigeria, Nsukka.

Corresponding author:

Emmanuel Okonkwo kenesco2002@yahoo.com

Dates:

Received: 25 Feb., 2023 Accepted: 29 May, 2023 Published: 28 July, 2023

Disclaimer:

All opinions expressed in this article are those of the author and do not necessarily reflect the position of the editors of Nsukka Journal of Religion and Cultural Studies (NJRCS) or the Department at large.

Competing interests:

The author(s) declares that he/she has no financial or personal relationships that may have inappropriately influenced him/her in writing this article.

Copyright:

© 2023. Copyright for this article is retained by the author(s), with first publication rights granted to the journal.



This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license



Abstract

Climate change is a global phenomenon that affects the environment, the lives of humans and animals. In Nigeria, the catastrophic effects of climate are seen in the increased cases of flooding, extreme temperatures, drought and the like. These effects of climate change have negative impacts on the lives of humans and plants alike. There are efforts on global and local levels to combat this menace. Nigeria is a signatory to the Conference of Parties whose primary objective is to deal with the problem of climate change. The level of implementation of the climate change agreements leave much to be desired. This paper uses qualitative research methodology. Data were derived from responses to structured interview questions, library and online resources. The results of this research indicate that government policies have not been adequately implemented so as to change human behaviours that contribute to climate change. This research advocates for concrete actions to combat climate change.

Key Words: Climate change, Climate change agreement, Human behaviours, Nigerian government, Government policies

Introduction

Climate change is considered as a global phenomenon and an environmental problem which affects the lives of plants, animals and humans. In Nigeria and other parts of the world the impacts of climate change are felt in many areas such as extreme temperatures, flooding, drought, change in rainfall pattern, health, rise in sea level, desertification, and the like. There are natural and human causes of climate change. Some of the human factors are deforestation, burning of fossil fuel, gas flaring, bush burning, and the like. The findings of the United States Environmental and Protection Agency (EPA) reveal that the natural causes are volcanic eruptions, variations in solar activity, changes in earth's reflectivity, and changes in earth's orbit and rotation (EPA, 2023). It is believed that climatic changes over the decades have been caused by human activities (The National Academies, 2001). Since climate change affects all and sundry, it demands the participation of everyone so as to adequately deal with it. In order to effectively curb the menace of climate change, several institutions and organizations were established. The Kyoto protocol which was signed on 11th December, 1997 in Japan, was the first international agreement signed by one hundred and ninety two world leaders. Since then, world leaders meet every year within a framework referred to as Conference of Parties where issues pertaining to climate change are discussed and resolutions reached. The last Conference of Parties (COP27) was held in November 2022 in Sharm el-Sheikh, Egypt. The next Conference of Parties (COP28) will take place in United Arab Emirates from 30th November to 12th December 2023.

Nigeria joined the global community in its efforts at tackling the dangers of climate change. Nigeria became a signatory to major treaties on climate change such as United Nations Framework Convention on Climate Change (UNFCCC) in 1992, Kyoto protocol in 2004, and Paris Agreement in 2017. The Nigerian government established the department of climate change in the Federal Ministry of Environment to articulate the national response to climate change. According to Iniobong, the director of the department of climate change, the ministry is supposed to "provide the right conditions for people to adapt, support quality research, education, awareness and outreach efforts, enforce industry regulations that will guide businesses and communities in mitigating and adapting to the effects of climate change" (n.d). It is one thing to make government policies and another to implement them. The problem is that there is so much talk than action when it comes to climate change. The thrust of this paper is to assess the concrete commitments of the Nigerian government in the fight against climate change. Unless concrete actions are taken to combat climate change, the environmental degradation will continue unabated, and there shall be an increased threat to life on earth.

Methodological Considerations

The researcher used the qualitative research methodology. The goal is to understand the reality of climate change within the lived experience of people in the society. The researcher made use of structured interview questions to obtain data about the experiences and perspectives of people on climate change and the role of the government in addressing it in Nigeria. The interviewees were asked questions such as: What is your own understanding of climate change?; What are some of the causes of climate change?; How has climate change impacted the environment and lives of Nigerians?; Do you think the government is doing enough to address the problem of change in Nigeria?; What are some practical ways of dealing with climate change in Nigeria?; What have you done to help address the problem of climate change? Based on their responses to the interview questions, the interviewees demonstrated their knowledge of climate change and their passion about tackling the problem of climate change. Some of them have written books on climate change while others are involved in community-based projects to deal with climate change. Ideas were also drawn from books and online sources.

Understanding Climate Change

In this section, the researcher will give the meaning of climate change, its causes, effects and the commitment of the Nigerian government to tackling the problem. What is expected of the Nigerian government is not different from what other world leaders are required to do in order to combat the menace of climate change. Several scholars, climatologists and international institutions have offered definitions of climate change. The United Nations Development Programme (UNDP) defines climate change as average weather patterns in a given place over a long period of time (UNDP, 2023). For Jackson (2023), climate change is a periodic modification of earth's climate brought about by geologic, chemical, biological, geographical factors.

From their responses to the questions, it was clear that all the interviewees had a reasonable notion of climate change. Although their definitions of climate change were different, they pointed out the essential indicators of climate change. The terms that featured in their definitions of climate change were: 'long term changes in the climate system' (Ogbonna, personal communication, 20th April, 2023); 'changes in temperature, precipitation, and rise in sea level' (Ifeakuche, personal communication, 26th April, 2023); 'change in weather' (Ude, personal communication, 21st April, 2023); and 'progressive change of climatic factors' (Anaele, personal communication, 20th April, 2023). The definitions of climate change that states the effects of climate change enable those who might not be so familiar with the concept to comprehend it.

The aforementioned definitions of climate change are based on some climatic indicators such as temperature, atmospheric composition, ocean and water, and cryosphere that help to throw more light on the understanding of climate change (World Meteorological Organization, 2022). Based on the aforementioned climatic factors, the researcher defines climate change as the increased manifestation of extreme weather conditions caused by anthropogenic (human) and

natural causes. National Oceanic and Atmospheric Administration, a scientific and regulatory agency in the United States of America, provides climate data on the nature of change that has been noticed in weather patterns and the environment as a result of climate change. It indicates that global temperatures rose about 1°C from 1901 to 2020; sea level increased from 1.7mm/year throughout most of the twentieth century to 3.2mm/year since 1993; average thickness of glaciers decreased more than 60 feet since 1980; the area covered by sea ice in the arctic region shrunk by about 40% since the era of industrial revolution; the traces of carbon dioxide in the atmosphere rose by 25% since 1958, and by 40% since the industrial revolution; snow is melting earlier.

The data provided above is not too different from those given by the Nigerian Meteorological Agency (NiMet) from 1901 to 2005. The data indicated that the temperature pattern in Nigeria since 1901 has been on the increase. The rise was said to be gradual until the late 1960s and rose from the early 1970s until date. The mean temperature from 1901 to 2005 was 26.6°C while the temperature increase from 1901 to 2005 was 1.1°C. There is also evidence of climate change in the increasing rainfall in the coastal areas of Nigeria (IPCC, 1996; NEST, 2003). According to Odjugo (2005, 2007), rains dropped by 53% in the north-eastern Nigeria and 14% in the Niger-Delta coastal areas. The short period of dry season usually referred to as 'August break' is now experienced in the month of July. Sea-level rise has flooded 3400km² of the coastal regions of Nigeria (NEST, 2003). Moreover, desert encroachment is reducing arable lands in the northern part of Nigeria by 1 to 10km a year (Odjugo and Ikhuoria, 2003; Yaqub, 2007). Unfortunately, these climatic changes in the weather patterns in Nigeria have worsened over the years. As a result of climate change, Lake Chad shrunk in area from 22,902km² in 1963 to 1,304km² in 2000 (Odjugo, 2007).

Causes of Climate Change

The causes of climate change can be divided into two, namely natural processes and human activities. According to Akpodiogaga and Odjugo (2010), the natural processes are the astronomical and extraterrestrial factors. The astronomical factors include the changes in the eccentricity of the earth's changes in the obliquity plane of ecliptic and changes in orbital procession while the extraterrestrial factors are solar radiation quantity and quality. Akpodiogaga and Odjugo further note that the anthropogenic factor in climate change involves human activities that either emit large amount of greenhouse gases such as carbon dioxide, methane, nitrous oxide, and fluorinated gases into the atmosphere that deplete the ozone layer or human activities that reduce the amount of carbons absorbed from the atmosphere. Greenhouse gases absorb and re-emit infrared energy from the atmosphere back to the earth (World Metrological Organization, 2022). Some human factors that emit large amount of greenhouse gases include cement production, agricultural practices (for example, the use of fertilizers) burning of fossil fuel, gas flaring, and Chlorofluorocarbons (CFCs) from industries (United Nations Environment Programme, 2000). There are also human

activities that reduce the amount of carbon removed from the atmosphere. For example, deforestation reduces the possibility absorption of carbon dioxide by trees and other plants.

In their responses to the question on the causes of climate change the interviewees focused more on the human causes of climate change. Top on the list of the human causes of climate change is burning of fossil fuels. Other causes of climate change which were identified included agricultural practices like the use of fertilizers, and pollution from industries (Ifeakuche, personal communication, 26th April, 2023; Ude, personal communication, 21st April, 2023; Anaele, personal communication, 20th April, 2023; Ogbonna, personal communication, Aniehobi, personal communication, 5th February, 2023; Mamah, personal communication, 21st April, 2023).

The result of the analysis of data from 1970 to 2017 reveals that 80 per cent of carbon emissions in Nigeria are directly consequence of fossil fuel combustion (Ogundipe et al, 2020). Fossil fuel is a collective term for non-renewable sources of energy such as coal, coal products, natural gas, derived gas, crude oil, petroleum products and non-renewable wastes. The combustion of fossil fuels releases a lot of carbon into the atmosphere because they are carbon-based (Eurostat, 2019). Cunningham and Cunningham (2004) cited in Ajero, et al (2010) observed that Carbon dioxide is by far the important cause of anthropogenic climate change because burning fossils fuels, making cement, burning forests and grasslands release nearly thirty billion tons of Carbon dioxide every year, on average, containing some eight billion tons of carbon.

Reports from a team of researchers from World Weather Attribution identified poor water management and constructing human settlements on flood plains as human-induced behaviours that worsened the impact of the flood which hit many states in Nigeria in 2022. The team also noted that the flooding was found to have been caused by the release of the Lagdo Dam in Cameroon, part of a river management system designed to work in tandem with a dam in Nigeria that is incomplete (DW, 2023).

Effects of climate change

Climate change has a lot of impacts on the planet and on the lives of humans, plants and animals. The concern of the interviewees was on the decline in food production due to drought and desertification, displacement of people due to floods, threat to coastal communities because of rising sea temperatures levels, and rising (Mamah, personal April, 2023; communication, 21st Okeke, personal communication, 25th April, 2023; Aniehobi, personal communication, 5th February, 2023; Anaele, personal communication, 20th April, 2023; Ude, personal communication, 21st April, 2023; Ifeakuche, personal communication, 26th April, 2023; Ogbonna, personal communication, 20th April, 2023). The aforementioned effects are palpable and form part of the lived experience of people. These effects are often negative because they militate against the harmony in the ecosystem and the wellbeing of human beings. Due to the network of interaction among the different components of the ecosystem, whatever that happens to one part of the system has a domino effect on the others. These effects are felt in many spheres of the ecosystem (the biotic and abiotic parts of the physical environment). Some of the areas these impacts are felt are agriculture, human health, and infrastructure (NOAA, 2021).

Agriculture

Climate change has left many negative impacts in the agricultural sector. For instance, climate change has increased the cases of flood and drought in some parts of the world (IPCC, 2022). The increased flooding has severe impacts on humans and plants, agriculture, infrastructure, the economy, and buildings (World Bank, 2021). In 2022, flood waters displaced over one million people, killed over six hundred, and destroyed about 440,000 hectares of farmland across several states of Nigeria (Ojewale,2022). Flood reduces the availability of land for cultivation which in turn reduces agricultural activities and crop yield. It also creates unemployment and leads to increased importation of food (Audu, 2013).

Excess rainfall or its scarcity affects the growth of certain crops. Tomatoes do not thrive in environment with heavy rainfall. Obi (2010) observes that farmlands flooded by sea water become salinised, thereby inhibiting plant growth. Taub et al (2018) discovered that plants that are exposed to large quantities of carbon dioxide have reduced protein concentration. According to another study by Berhanu and Wolde (2019), high rainfall can lead to loss of soil fertility as a result of leaching and flooding. WHO (2022) also found out that high concentration of arsenic in the soil could be absorbed by the plants and may pose health risks when consumed by human beings. The findings of Ikem (2018) show that high temperatures hasten the decomposition of crops such as yams, potatoes, tomatoes, onions, carrots, cabbage and other vegetable plants. Excessive heat waves, changes in salinity, acidity of water bodies affect aquatic life. Livestock also suffer the consequences of climate change in diverse ways. Increased temperatures increase the susceptibility of the animals to diseases. Animals that depend of green pasture will have less green grasses to graze on (Ani, et al 2022).

Health

Climate change exposes humans to serious health risks (Peterson, 2020). Climate change has severe impact on human health in several ways. These impacts can be direct or indirect. It is direct when climatic or weather variations directly affect human health such as when health issues arise as a result of heat waves or hotter temperatures, windstorms and other extreme weather events. Indirect impact of climate change occurs when a climate change induced event such as poor food or crop production gives rise to malnutrition and death (Nche, et al 2017). According to World Health Organization (WHO), extreme high air temperatures contribute directly to deaths from cardiovascular and respiratory disease. Pollen and other

aeroallergen levels are also higher in extreme heat. These can trigger asthma, which affects around 300 million people. Ongoing temperature increases are expected to aggravate this burden (WHO, 2018).

There are health hazards associated with flood. WHO (2018) confirms that floods contaminate freshwater supplies, heighten the risk of water-borne diseases, and create breeding grounds for disease-carrying insects such as mosquitoes. They also cause drowning and physical injuries, damage homes and disrupt the supply of medical and health services. Drought also leads to water scarcity and significant decrease in fresh water. This can compromise hygiene and increase the risk of diarrhoea and other water-borne diseases such as typhoid fever, cholera and river blindness. Rising temperatures and variable precipitation are likely to decrease the production of staple foods in many of the poorest regions. This will increase the prevalence of malnutrition and under nutrition, which currently cause 3.1 million deaths every year.

Cerebra-spinal meningitis is one of the infectious diseases likely to be caused by climate change. Incidences of meningitis, for instance, have been on the rise in Nigeria due to excessive heat. According to Akingbade (2010), cases of meningitis have been reported to have increased in Nigeria as a result of excessive heat. Abdussalam et al (2014) in an empirical investigation examined the impact of future climate change on meningitis risk in northwest Nigeria. The results suggest future temperature increases due to climate change have the potential to significantly increase meningitis cases. Studies in various parts of the world have shown linkages between climate change and mental health, and a term 'solastalgia' was coined by Albrecht and colleagues, it describes "environmentally-induced distress and negative emotions caused by destruction or diminishing of place of solace, communities and landscapes" (Albrecht, et al, 2011; Albrecht, et al, 2007).

Infrastructures

These are basic installations needed in order to facilitate human activities in the society. Some of these facilities include road network, bridges, dams, railways, airports, and the like. High temperatures cause asphalt roads to heat up and eventually begin to crack. This could give rise to potholes on several parts of the road. Even though most of the cracks and portholes on Nigerian roads could be attributed to high temperatures, the use of substandard materials and shoddy work of some road contactors are also responsible for deplorable state of Nigerian roads. There is likelihood of deterioration of tires and overheating of vehicles as a result of increased temperatures. During the dry season in Nigeria, it is common to see many cases of overheating of engines as a result of extreme temperatures. Increased rainfall can lead to flooding of roads and disruption of traffic and on some occasions, accidents. Increased wind speed damage roads signs and traffic lights (Senibo, n.d).

Climate change also causes a lot of damage to the railway system. High temperatures can lead to expansion of rail tracks and damage of the rail tracks. When these are not properly checked and fixed, the chances of derailing of trains are high. These damages increase the cost of maintenance of the rail tracks (The Guardian, 2017). Heavy precipitation could also lead to delays and disruption, and tropical storms and hurricanes can also flood or leave debris on railways, disrupting rail travel.

Changes in precipitation can affect shipping in many ways. Flooding could close shipping channels, and increased runoff from extreme precipitation events could cause silt and debris to build up, leading to shallower and less accessible channels. Channels that are not regularly maintained or have a lower capacity to store sedimentation are more vulnerable to abrupt disruptions in service. More severe storms could also increase disruptions in marine travel and shipping. In areas experiencing increasing drought, water levels could periodically decrease, limiting inland shipping on rivers (USGCRP, 2014).

Climate changes may impact airplanes, airports, and airstrips, affecting air travel and infrastructure. Periods of extreme heat can affect aircraft performance and may cause airplanes to face cargo restrictions, flight delays, and cancellations. Increased storm rains and flooding may also disrupt air travel and can force entire airports to close (USEPA, 2017). High temperatures pose a challenge to air planes. This is so because of lift which is the upward force created by diverting air around wings as an aircraft moves down the runway. It is harder to achieve this when the air is scorching hot because hot air is thinner than cold air. Thus on a very hot day, planes might need to carry less passengers and cargo. This will raise the cost of air travel and increase in number of flights (Pearce, 2018).

Terrorism

Climate change has been identified as one of the root causes of violent conflicts in Nigeria. The findings of the research conducted by Consortium of International Agricultural Research Centres (CGIAR) show that drought and desertification in Northern Nigeria make the herders to move with their herds of cattle to the southern part of Nigeria (Dutta, et al, 2021). In most cases, the herders clash with owners of farmlands because their cows destroy people's crops. In the same vein, some terrorists disguise as herders and unleash attacks on farm settlements and communities.

Assessing the Role of the Government in Addressing the Problem of Climate Change

Government should lead the pace in the fight against climate change. They exercise their authority within constituted political frameworks and structures such as ministries, departments of state, congress or houses of assembly and judiciary. Each of the actors in the different tiers of government is supposed to play specific roles so that the goal of building a healthy environment will be achieved and

sustained. Even before signing the Paris climate accord in 2017, Nigeria has been a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) since 1994. It is an international environmental agreement that seeks to minimize the level of greenhouse gases in the atmosphere. In 2022, Nigeria participated in the Conference of Parties (COP 27) which took place in Egypt. The Minister of Environment, Mohammed Abdullahi, represented the President of Nigeria. In an interview he granted before COP 27, the Minister stated that Nigeria was committed to bringing the issue of loss and damage to the fore (Babatunde, 2022). People are suffering because of the damages. In President Buhari's speech which was read by the Minister of Environment, he said that those who have caused the pollution should pay for it. He emphasized it was wrong to ask third world countries to pay for damages caused by industrialized The Minister also hinted that the Nigerian countries. government will focus on climate support to fund its activities in the northern states that are suffering from desert encroachment (Igidi, 2022).

There are many national policies aimed at tackling the problem of climate change in Nigeria. For instance, Nigeria has expressed commitment to reducing carbon emission unconditionally by 20% or conditionally by 45% with international support. Another commitment the country has made is to end gas flaring by 2030, transition from car to bus as major means of transportation, and reforestation. The aforementioned commitments formed part of the document referred to as Nationally Determined Contribution (NDC) which was submitted to the United Nations Framework Convention on Climate Change (UNFCCC) (Mojeed, 2021).

The interviewees know that Nigeria is a signatory to the Paris climate change agreement. They are also familiar with National Climate change policies. However, they decry a high level of mediocrity in the implementation of those international agreements and national policies. One of the interviewees charged the government to provide constant electricity to reduce the use of generator sets which release tons of carbon-dioxide into the atmosphere (Okafor, personal communication, 21st April, 2023). The question remains: how many commitments on climate change made by the Nigerian government have been implemented? The researcher selected some aspects of the ecosystem affected by climate change in order to determine if proper action has been taken to address the challenges that climate change pose to those parts. These include:

Lake Chad basin: It is a fresh-water lake found in the Sahelian region of West-Central Africa. This lake is owned by Nigeria, Niger, Chad and Cameroun. Experts keep warning that the lake is receding almost 5% every year. The Federal Government of Nigeria has contributed the sum of N8.5 billion (\$5 million) for the feasibility study to restore Lake Chad Basin (Magnartis). This gesture of the government of Nigeria is commendable. Conferences and summits on Lake Chad have been organized, but the actual project is yet to

commence. Vitalis Aniehobi, a Catholic priest, mentioned that a Belgian non-governmental organization became interested in offering help to solve the problem of the Lake Chad basin. Aniehobi noted that there was no concrete engagement by the non-governmental organization to develop the Lake Chad basin (personal communication, 5th February, 2023).

Cleaning up the pollution in the Niger Delta: There is a massive pollution of the environment as a result of petroleum exploration in the Niger Delta region. Yet, no one holds the companies that pollute farmlands and waterways to task. Audrey Gaughran of Amnesty International told Radio France International (RFI) that "Shell has a responsibility to operate professionally and responsibly in the Niger Delta as elsewhere." Gaughran thinks the government should be holding Shell to account, but also should be doing far more to protect the people of the Niger Delta (Finnan, 2015). In fact, every oil company should be monitored to ensure strict compliance with environmental laws and policies.

Gas flaring: Gas flaring is the terminology that describes burning off the gas which comes out of the ground while drilling for oil. The flares are smokes that emanate from the smoke stacks on installations of oil companies. The findings of World Bank revealed that gas flaring in 2021 accounted for over 400m tonnes of carbon dioxide released into the atmosphere (Kelly, 2022). Despite the warnings about the danger of gas flaring, most oil producing countries in Nigeria still practice gas flaring. In Port Harcourt, Nigeria, gas is flared. When one goes there, one sees walls of buildings covered with black soot. When one spreads one's clothes on the line, soot settles on them. The presence of soot in the air reduces air quality; It might also lead to serious respiratory problems. Experts say that gas flaring releases carbon dioxide, methane and soot (George, 2020). Why would the government keep silent about it? It is a sign that the government is not serious in fighting ecological crisis.

Tree planting: In 2020, Women Environmental Programme (WEP) received three thousand trees seedlings from the Department of Forestry, Federal Ministry of Environment as part of the Presidential Trees Planting Campaign to tackle the problem of climate change in Nigeria. The tree seedlings were supposed to be distributed to various communities and organizations for planting. The tree planting campaign is in fulfilment of President Buhari's pledge to plant 25 million trees in Nigeria to enhance the country's carbon sink as part of the country's efforts to implement the Paris climate change agreement (WEP, 2020). This is a laudable action by the government. The problem is that sometimes these tree seedlings are not properly distributed. If eventually they are planted, there is need for committed people in the community to ensure the seedlings are taken care of. This concern was also shared by an environmentalist, Brenda Max-Nduaguibe. She bemoans the fact that sometimes the trees they plant in certain communities wither and die because they are neglected (personal communication, 4th February, 2023). The tree planting campaign must be extended to every part of the

country and measures must be put in place to ensure the survival of those trees. It must take place on a mass scale because of the desert encroachment in certain parts of the country.

Flood: There have been talks about dredging river Niger, but this project has not been actualized. The World Igbo Environment Foundation (WIEF) has called for the dredging of River Niger and de-silting of water bodies to solve the recurring problem of flooding in Nigeria. Apart from mitigating the impact of flooding on the lives in affected communities, dredging is said to increase coastal transport system, and facilitate easier and cheaper movement of goods and also enhance irrigation for farming (Vanguard, 2018). When the Niger is dredged, then the drainage systems in the urban and rural areas must be cleared, and new ones should be built in areas without good drainage system. People should keep the drainages clean and avoid dumping refuse into them. When the drainages are clogged with dirt, the flow of water is obstructed. This leads to flooding of the road during rainfall. To solve the problem of indiscriminate disposal of refuse, there is need for systematic ways of refuse collection.

The Department of Environment is part of government machinery responsible for environmental health. Are they not supposed to see to it that all the drainages are cleared especially during the dry season so that when the rains come there will be free flow of water? Government has urban and regional planning departments whose work it is to ensure that structures are not put up in flood prone areas and waterways. Nigeria also has a National Orientation Agency whose duty is to enlighten the masses on several issues relating to life in the society. They have workers and they also employ people. They have a budget approved for use in their work of sensitization of people across the country. What do they do with their budgetary allocations?

Massive enlightenment programmes on the environment:

As the saying goes, it takes two to tango. There is need for a thorough education on the environment. This should be integrated into school curriculum from basic level to tertiary stage. This education is meant to change the attitudes of people with regard to the environment. Laudato Si (Praised be to You) is an environmental encyclical and handbook which was written by Pope Francis in 2015. In the encyclical, the Pope pleaded with people to change their lifestyle or behaviour (Pope Francis, Laudato Si, 206). Everybody must learn to do something. For instance, switch off the lights in your room before stepping out. Do not waste water or throw food away. The Pope also talked about environmental love which has to do with performing little actions which will help to beautify the environment (Pope Francis, Laudato Si, 231). When it comes to concrete actions to be undertaken to tackle the problem of climate change, the respondents offered a couple of suggestions. They included the use of renewable sources of energy, reforestation, the use of public transportation, use of electric cars and public awareness on effects of hydrocarbons. Some of the actions like renewable sources of energy and

electric cars are more cost intensive than others. Some households in Nigeria cannot afford renewable sources of energy like solar panels.

The fight against climate change is a collective responsibility of all. The interviewees pointed out the efforts they are making in the campaign against climate change. They try to dissuade people from the practice of bush burning. They also advise against throwing food into landfill because it generates methane and other toxic gases. Some are already creating public awareness through social media and others are involved in tree planting campaigns. Some made a personal decision to walk short distances instead of using a vehicle. More people need to be actively engaged in this fight against climate change.

Conclusion

Climate change has become one of the daunting challenges facing the global community. It has significantly caused a lot of damage to the environment, human beings, plants and animals. Areas that used to be dry are flooded. Regions that are green are becoming dry. There is rise in sea level. Many of those who claim to be ignorant of the concept of climate change would not persist in their ignorance when they experience some of the disasters of climate change.

Certain human behaviours have been identified as major contributors to climate change. Examples of such human actions are the cutting of trees which causes deforestation, flaring gases, burning of fossil fuels, indiscriminate dumping of refuse, bush burning, and the like. As a result of deforestation, the trees that were there to purify the air will no longer do that. The hotness of the weather is felt because there are no trees. These are some of the causes of climate change in Nigeria and other parts of the world.

As regards the impacts of climate change, it is important to note that the perennial herders/farmers conflicts in Nigeria is partly caused by climate change. The herders continue to search for green areas for their cattle. The more there is dryness in the North, the more they come to the South, where they can have pasture for their animals. In trying to feed the animals, they sometimes want to take possession of the area so that the animal will continue to survive. In so doing, they destroy farms, kill farmers, and force farmers to leave their ancestral lands. This is already an impact of climate change. Other impacts are seen in many sicknesses such as typhoid, malaria, meningitis, and the like. The impacts of climate change are also palpable in the increasing cases of flooding, drought, hotness of the weather, and erosion.

Nigeria is a member of the Conference of Parties on climate change. It is a commendable initiative to be a part of the global campaign against climate change. There are also national agencies charged with the responsibility of ensuring proper sensitization of all Nigerians on issues like climate change and the implementation of government policies on climate change. The National Orientation Agency and the Ministry of

Environment are not doing enough work of educating the people in urban and rural areas on climate change.

Climate change will continue unless humans learn to reverse their destructive actions and imbibe environmental friendly ones. There are little and practical ways one can deal with the menace of climate change. Government at local and national levels need to build more drainage systems to checkmate flooding. People need to desist from dumping dirt into those drainages. Government should have practical refuse management. Tree planting is necessary to slow down the environmental degradation. A lot has been written and said about climate change. Walking the talk is where the problem lies.

References

- Abdussalam A.F, et al (2014). The impact of climate change in Meningitis in Northwest,
 Nigeria: An assessment using CMIP5 climate model simulations. *American Meteorological Society*.
 Retrieved 5th February,2023, from https://doi.org/10.1175/WCAS-D-13-00068.1
- Ajaero, C, K, et al (2010). "Climate Change: Concepts and issues" in Anyadike, R.N.C. et al eds) Conference Proceedings on Climate Change and the Nigerian Environment. Nsukka: Department of Geography. University of Nigeria, Nsukka.
- Akingbade T. Climate Change effects in Nigeria: Heat, Dusty Weather Rise Health Concerns: The Guardian; (30-03-10).Retrieved 5th February, 2023, from https://guardian.ng
- Akpodiogaga P. & Odjugo O. (2010). "Global and regional analysis of the causes and rate of Climate" in Anyadike, R.N.C et al (eds) *Conference Proceedings* on *Climate Change and the Nigerian Environment*. Nsukka: Department of Geography. University of Nigeria, Nsukka.
- Albrecht G., et al (2007). *The Distress Caused by Environmental Change*. Retrieved 5th February, 2023, from https://pubmed.ncbi.nlm.nih.gov/18027145
- Albrecht G. (2011). Chronic Environmental Change: Emerging 'Psychoterratic' Syndromes. In: Climate Change and Human Well-being. New York: Springer
- Ani, K et al (2022). The impact of climate change on food and human security in Nigeria.

 Retrieved 4th February, 2023, from https://www.emerald.com/insight/content/doi/10.11 08/IJCCSM-11-2020-0119/full/html
- Babatunde, J. (2022). COP 27: Nigeria 'll push for loss and damage Environment Minister.

 Retrieved 7th February, 2023, from https://www.vanguardngr.com/2022/11/cop-27-nigeria-ll-push-for-loss-and-damage environment-minister/accessed

- Berhanu, M. and Wolde, A.O. (2019), "Review on climate change impacts and its adaptation strategies on food security in Sub-Saharan Africa", Agricultural Social Economic Journal, Vol. 19 No. 3. Retrieved 5th February, 2023, from https://agrise.ub.ac.id/index.php/agrise/article/view/
- Cunningham, W., P & Cunningham, M., A (2004). *Principles of Environmental Science:*Inquiryand Applications (2nd Ed.), New York:

 McGraw- Hill.
- DW (2023). Experts blame climate change for W Africa flooding. Retrieved 6th February, https://www.dw.com/en/west-africa-flooding-largely-caused-by-climate-change-experts/a-63784185
- EPA (2023). *Climate Change Science*. Retrieved 20th April, 2023, from https://www.epa.gov/climatechange-science/causes-climate-change.
- Finnan, D. (2015). Nigerian government failed to ensure Shell cleaned up Niger Delta oil spills: campaigners. Retrieved 2nd February, 2023, from https://www.rfi.fr/en/africa/20151103nigerian-government-failed-ensure-shell-cleanedniger-delta-oil-spills-campaigners
- George, L. (2020). *Nigeria's pioneering gas flaring plan risks going down in flames*. Retrieved 7th February, 2023, from https://www.reuters.com/article/us-nigeria-oil-
- gasflaring-insight-idUSKBN26L195.

 Igidi, T. (16th November, 2022). *COP27: Nigeria at crossroads of a revolutionary transition*.

 Retrieved 5th February, 2023, from https://dailytrust.com/cop27-nigeria-at-crossroads-of-a-revolutionary-transition/
- IPCC (2007). Climate change 2007. The fourth assessment report(AR4). Synthesis report for Policymakers. Retrieved 5th February 2023, from http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_yr_spm.pdf
- ICPC(2022). *Water*. Retrieved 6th February, 2023, from https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC AR6 WGII Chapte r04.pdf
- Ikem, T.U. (2018), "Prospects of food self-reliance in Nigeria", *Farming and Rural System Economics*, Vol. 56 No. 1, pp. 112-120. Retrieved 5th February, 2023, from https://www.emerald.com/insight/content/doi/10.11 08/IJCCSM-11-2020-0119/full/html
- Iniobong, A. (n.d) . Federal Ministry of Environment.

 Department of Climate Change.

 Retrieved on 20th April, 2023, from https://climatechange.gov.ng/directors-message/
- Jackson, S. T.(2023). Climate Change. Retrieved 4th May,

- 2023, from Encyclopedia Britannica Online: https://www.britannica.com/science/climate-change
- Magnartis (2014). Nigeria Contributes N8.5bn To Receding Lake Chad Basin Project.
 - Retrieved 5th February,2023, from https://www.magnartis.com/nigeria-contributes-n8-5bn-to-receding-lake-chad-basin-project/
- Mojeed, a. (2021) Analysis: *How Nigeria plans to meet low carbon pledge by 2030*. Retrieved 4th February, 2023, from https://www.premiumtimesng.com/news/top-news/482283-analysis-how-nigeria-plans-to-meet-low-carbon-pledge-by-2030.html?tztc=1
- National Academies (2001). *Climate Change: An analysis of some key questions*. Retrieved 20th April, 2023, from https://nap.nationalacademies.org/read/10139/chapte r/2#
- Nche, G. C et al (2017). Challenges of Climate Changeand the Culpability of Churches

 Towards an Effective Church Climate Change Action in Nigeria. Retrieved 3rd

 February, 2023, from

 www.missionalia.journals.ac.za

 http://dx.doi.org/10.7832/45-2-183
- NEST (2003). Climate Change in Nigeria. A
 CommunicationGuide for Reporters and
 Educators. Ibadan: NEST
- NOAA (2021). *Climate change impacts*. Retrieved 5th February, 2023, from https://www.noaa.gov/education/resource-collections/climate/climate-change-impacts/
- Obi, C.O. (2010). Climate Change and Management of
 Degraded Soils for Sustainable
 Crop of Production. In Tropical Built Environment
 Journal. Vol.1, Number 1.
 Published by the Faculty Environmental Sciences,
 Nnamdi Azikiwe University, Awka, Nigeria
- Ojewale,O. (2022). Climate change, flooding and Nigeria's # tide of Corruption. Retrieved 6th February, 2023, from https://www.premiumtimesng.com/news/564567-climate-change-flooding-and-nigerias-tide-of-
- corruption.html
 Odjugo, P. & Ikhuoria, I. (2003). The impact of climate change and anthropogenic factors on desertification in the semi-arid region of Nigeria.

Global Journal of Environmental Science, 2(2)

- Odjugo, P. (2005). An analysis of rainfall pattern in Nigeria. Global *Journal of Environmental Science*, 4(2). Retrieved 2nd February, 2023, from https://www.ajol.info/index.php/gjes/article/view/24
- Odjugo, P. (2007). The impact of climate change onwater

- resources; global and regional analysis.. The Indonesian Journal of Geography
- Pope Francis (2015). *Laudato Si*. Retrieved 5th February, 2023, from https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-

francesco_20150524_enciclica-laudato-si.html

- Senibo, W.G (n.d.). The impacts of climate change on transportation infrastructure in Nigeria: Rivers state as a case study. Retrieved 5th February, 2023, from http://www.nseph.org/Technical%20presentations/The%20Impacts%20of%20Climatte%20Change%20On%20Transportation%20Infrastructure%20In%20Nigeria%20Rivers%20State%20%20As%20A%20Case%20Study%20by%20Pst.%20(Engr)%20Senibo%20Wilkinson%20George.pdf
- Taub, D.R., Miller, B. and Allen, H. (2018), "Effects of elevated CO₂ on the protein concentration of food crops: a meta-analysis", *Global Change Biology*, Vol. 14 No. 3, pp. 565-575. Retrieved 4th February, 2023, from https://www.researchgate.net/publication/22789338
 0 Effects of elevated CO2 on the protein concentration_of_food_crops_a_meta-analysis
- The Guardian (2017, 23rd January). *Transportation and climate Change*. Retrieved 4th February, 2023, from https://guardian.ng/opinion/transportation-and-climate-change/
- Pearce, F. (2018, 19th February). *Climate change spells turbulent times ahead for air travel*.

 Retrieved 4th February, 2023, from https://www.theguardian.com/environment/ 2018/feb/19/climate-change-spells-turbulent-times-ahead-for-air-travel
- The United Nations Development Programme (2023). The Climate Dictionary: An everyday guide to climate change. Retrieved 4th May, 2023, from https://climatepromise.undp.org/news-and-stories/climate-dictionary-everyday-guide-climate-change
- United Nations Environment Programme (2000). *Climate Change Information Sheet 22*.

 Retrieved 23rd April, 2023, from https://unfccc.int/cop3/fccc/climate/fact22.htm
- USEPA (2017). Climate Impacts on Transportation Climate Impacts on Transportation.

 Retrieved 4th February, 2023, from https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-transportation_.html#ref2
- USGCRP (2014). Climate Change Impacts in the United States: The Third National Climate
 Assessment. Melillo, Jerry M., Terese (T.C.)
 Richmond, and Gary W. Yohe (eds.). United States
 Global Change Research Program.

- Vanguard (2018). Dredging River Niger panacea to perennial flooding WIEF Dredging River Niger panacea to perennial flooding. Retrieved 4thy February, 2023, from https://www.vanguardngr.com/2018/10/dredging-river-niger-panacea-to-perennial-flooding-wief
- WEP (2020). *Tree planting campaign across Nigeria*. Retrieved 7th February, 2023, from https://wepnigeria.net/tree-planting-campaign-across-nigeria
- WHO (2018) *Climate change and health*. Retrieved 6th February, 2023, from https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health
- WHO (2022). *Arsenic*. Retrieved 6th February, 2023, from / https://www.who.int/news-room/fact-sheets/detail/arsenic
- World Bank, *Climate change knowledge portail*. Retrieved 6th February 2023, from https://climateknowledgeportal.worldbank.org/country/nigeria/vulnerability
- World Meterological Association (2022). *Climate*. Retrieved 4th February, 2023, from https://public.wmo.int/en/our-mandate/climate
- World Meterological Orgnization (2022). *Greenhouse gases*.

 Retrieved 5th May, 2023, from

 https://public.wmo.int/en/our-mandate/focus-areas/environment/greenhouse-gases
- Yaqub CN 2007 . Desert encroachment in Africa: Extent, causes and impacts. Retrieved 3rd
 February, 2023, from *Journal of Arid Environment*,4(1): 14-20/
 https://www.ajol.info/index.php/jasem

List of Interviewees

Name	Occupation	Qualificati on	Age	Date
Anaele,	Catholic	Master's	55	20/04/2023
Alphonsus	priest	degree		
Aniehobi	Catholic	Doctorate	55	5/2/2023
Vitalis	priest			
Ifeakauche,	Seminarian	Bachelor's	27	26/04/2023
Martin		degree		
Mamah,	Student	Undergrad	25	21/04/2023
Celestina		uate		
Max-	Civil servant	Master's	45	04/02/2023
Nduaguibe,		degree		
Brenda				
Ogbonna,	Public	Bachelor's	28	20/04/2023
Stella	servant	degree		
Ude,	Civil servant	Master's	47	21/04/2023
Henrietta		degree		
Okafor,	Civil servant	Master's	45	21/04/2023
Tochi		degree		
Okeke, Elly	Private	Master's	45	25/04/2023
	business	degree		
	owner			