



Climate Change And The Impact On Nigeria's Educational Leaders As Catalysts In Actualizing COP26 Goal Before 2050

¹Branch, Nnenna K. (Ph.D.) & ²Igbogi, Inatimi (Ph.D.)

¹Department of Educational Management,
Faculty of Education,
Ignatius Ajuru University of Education, Port Harcourt, Nigeria
E-mail: nnenna.branch@yahoo.com. 09079523377

²Department of Curriculum Studies
Isaac Jasper Boro College Of Education, Sagbama, Bayelsa State, Nigeria
E-mail: timiigbogi@gmail.com. 08033429446

ABSTRACT

The world is getting warmer and it is a sign of impending danger to man and nature. This calls for immediate global action to be taken to build resilience as well as halt further warming. This is a position paper on climate change and the impact on Nigeria's educational leaders as catalysts in actualizing COP26 goal before 2050. The paper defined climate change, the impact of climate change and how climate change will affect different parts of the world in details. How educational leaders can act as catalysts in actualizing COP26 before 2050 was equally analyzed. The paper concluded by stating that, to actualize COP26 goal does not only end at mobilizing finance but requires working together with school leaders who will largely utilize the youths to engage in campaign on climate change in their various communities including harnessing resources to actualize cleaner air and better health for everyone before year 2050. The paper suggested amongst others that government should assist farmers to promote both public and private investment in climate-smart agriculture in Nigeria and the entire nation should brace up to this new change by modulating their ways of living and adopting an environmental friendly living by investing on electric vehicles and stop the use of fossil fuel vehicles, plant trees to enhance cleaner air in the atmosphere.

Keywords: Climate Change, Impact, Educational Leaders, Catalysts, Actualizing COP26 Goal, Before 2050.

INTRODUCTION

The catastrophic boomerang of human activity has led to climate change and this has impacted the global community as the world temperature keeps rising. This poses a threat as global warming is grossly caging both plants and animals as endangered species with its negative impacts. If immediate action is not taken, human and nature will face serious danger such as worsening droughts, high rise in sea level, heat waves and mass extinction of species. The UN secretary, general Antonio Guterres lamented that "the planet is fast approaching tipping points that will trigger escalating feedback loops of global heating" (United Nations, 2021). President Muhammadu Buhari while speaking at the summit in Glasgow, Scotland stated that African's goal to restore 100 million hectares of landscape for productive agriculture is achievable (Ukpe, 2021). He went further to state that "Nigeria is not only an oil producing state but a gas producing

state and has all the resources available but is in need of technical, innovative and financial support to succeed” (Channels TV, 2021). The impending danger does not only demand the collaborative efforts of world leaders but also include that of educational leaders in seeking potential solution to avert this doom about to hit the world. Therefore, this paper examined climate change and the impact on Nigeria’s educational leaders as catalysts in actualizing COP26 goal before 2050.

CONCEPTUAL FRAMEWORK

Climate Change

Climate change is the average weather in a place for a long period of years. It is the alterations in those average weather conditions that result to global warming. These alterations come from use of oil, gas and coal by individuals in various homes, factories and transports. Agriculture is also one of the contributing factors that produce global warming through the use of fossil fuel and waste management leading to great adverse impact on the average weather conditions in the planet which results to climate change. Moreover, every human being exhale carbon dioxide including cows’ belching and others. Carbon dioxide (CO₂) otherwise known as greenhouse gasses being released into the atmosphere, traps the sun’s heat, thereby resulting to rise in the planet’s temperature.

In a landmark agreement to work together in collaboration to address the climate change challenge, the world leaders met in Paris in 2015 and agreed to maintain 1.5C global warming. Landmark United Nation’s (LUN) report concluded that the world’s average surface land temperature stands at about 1.1 degree Celsius above pre-industrial level and is likely to reach 1.5 degree Celsius which is the optimal target set out in Paris. The report by 234 scientists from 66 countries revealed that human influence has greatly warmed the climate at the rate that is unprecedented in the last 2,000 years (IPCC 2018). The Intergovernmental Panel on Climate Change report advised that limiting global warming to 1.5oC would require very quick, far-reaching and unprecedented changes in all society. Currently, the world is 1.2C hotter than its former temperature as recorded in the 19th century and could still experience more warming by the end of this century (IPCC, 2018). This is due to the amount of Carbon dioxide in the temperature which has equally risen to 50%. To halt further warming and avoid the worse consequences of climate change, scientists advised that temperature rise must be tamed to 1.5C by 2100 (Holder, 2021). Otherwise, the planet should brace up to devastating heat waves, millions of homes will be gone as a result of rise in sea levels and irreversible loss of planet and animal species (BBC News, 2021)



Fig 1: Air pollution from power plants

Note: Picture on air pollution from power plants retracted from the research of the University of California Berkeley by BBC News (2021).

The United Kingdom hosted a summit for leaders in Glasgow Scotland tagged, Conference of the Parties 26 (COP26) from 1th to 13th November 2021. Antonio Guterres, the UN secretary general after going

through the IPCC report, raised alarm in the summit that the report was nothing but a “code red” for humanity. In his words “The alarm bells are deafening and the evidence is irrefutable”. He urged the world to urgently step up efforts and engage the most ambitious path to prevent exceeding the threshold of 1.5C degree above industrial level of global heating. To that effect, different countries were called up to set out their carbon reduction plans for 2030. Over 200 countries pledged to net zero by 2050. That is to say that greenhouse gas emission will be reduced as much as possible and the remaining emissions will be balanced out by absorbing an equivalent amount from the atmosphere. Experts are of the view that the plan is achievable but require governments, businesses and individuals to make big changes.

Impact of Climate Change

The weather condition is very intense and can be felt globally. The extreme condition is threatening lives and livelihoods and has devastating effect on global economies. This can lead to some regions of the world being uninhabitable because most farmlands will become deserts and in some regions, there will be intense rainfalls causing floods as experienced by China, Germany, Belgium and Netherlands, including Nigeria. This requires huge amount of money to combat of which developing countries like Nigeria cannot afford. The ocean and sea animals will suffer. Since 1995 in Australia, the Great Barrier Reef has lost more than half of its corals. Australia and America have been under gruesome threat of incessant wildfires in recent times, due to increase in climate change. In other regions, the melting ground and greenhouse gasses caged for so many years are released into the air causing more damage to the climate. Ice sheets in Greenland and Antarctica have lost average of 100 billion metric tons of ice per year. Glaciers in United States and around the world have shrunk and the rate at which glaciers are melting has greatly increased over the last decade contributing to rise in sea level. While some regions experience high temperature causing droughts and this makes it difficult for the animals to find food and water they need for survivals, example is Siberia and some parts of northern Nigeria. This means that so many species will go extinct. A diagram of the projected annual average temperature change relative to 1850-1900 at different levels of global warming and annual mean land and ocean temperature above or below average relative to 1850-2020 are shown below:

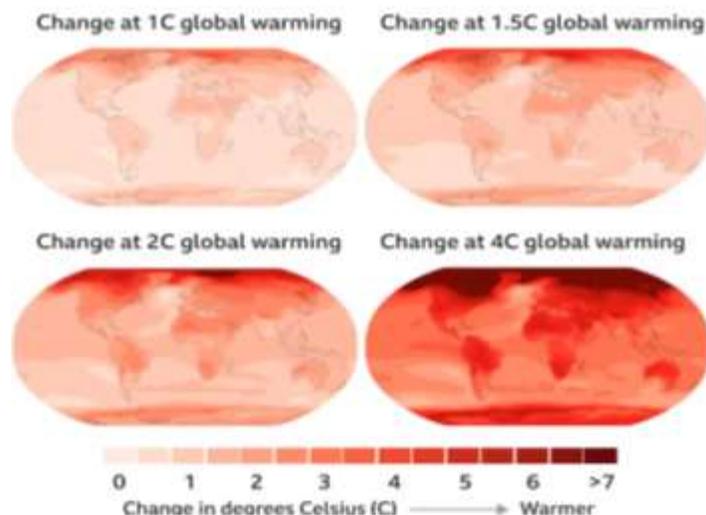


Fig 2: The world could get warmer

Note: Diagram on Projected annual average temperature change relative to 1850-1900, at different levels of global warming retracted from the research of the University of California Berkeley by BBC News (2021).

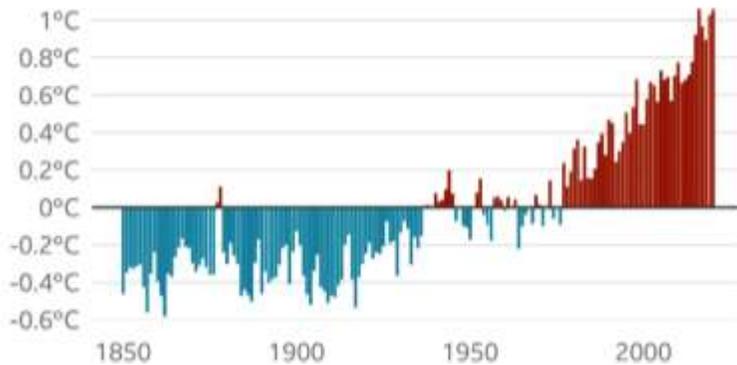


Fig 3: The world is getting warmer

Note: Diagram showing annual mean land and ocean temperature above or below average 1850-2020 retracted from University of California Berkeley by BBC (2021).

How Climate Change Will Affect Different Parts of the World

If quick action is not taken to curtail global warming to 1.5C, it will affect different parts of the world in the following ways: African nations will suffer droughts and shortage of food. The pacific region will probably go extinct because of rise in sea level. The Middle East will be vulnerable to extreme heat waves and farmlands will turn into deserts. Australia will most likely suffer extreme heat and drought. Europe and United Kingdom will be exposed to serious flooding due to extreme rainfalls and the Western parts of United States will also experience drought conditions while other parts will experience more intense storms (BBC News, 2021).



Fig 4: Impact of climate change

Note: Picture of ice break up in Alaska River. Environmental Protection Agency United States (2021).

Nigeria has two precipitation regimes causing southeast and southwest to experience low high precipitation resulting to flood and erosion while the north experience low precipitation resulting to aridity, desertification and drought. Nigeria has already started experiencing the impact of climate change such as flooding, drought, desertification, rising sea levels, erosion, landslides, radiation and loss of biodiversity. Deforestation which is due to large removal of forests through logging, expansion of agricultural croplands, fuel wood, and urbanization, mining, slash and burn practices including fire hunting. Deforestation of dry lands destroys the trees and vegetation that binds the soil, coupled with the climate conditions in dry lands, making it impossible for denuded vegetation which is low to regenerate (Pastermak & Schilssel, 2001). This makes non-forest to meet various human needs. Nigeria is one of the world's largest deforested countries and this has made it to lose about 55.7% of its primary forest

(Shonekan, 2004; Olagunju, 2012). This loss led to annual deforestation rate of about 3.67%, being half of its primary forest cover. Onyeanus and Otegbeye (2012) including Okoli and Ifeakor (2014) stated that if care is not taken, there will be depletion of Nigeria forest which will lead to serious desertification. Currently, Nigeria has desert encroachment challenge which is rapidly ravaging 15 northern States, from moderate to severe rate. About 63.83% land areas are impinged by desertification, which means that 580,841Km² out of 909,890Km² land areas have turned to desert (Olagunju, 2015).

Desertification combined with high temperature and low rainfall constitute to drying up of water resources leading to drought. Oyeanus and Otegbeye (2012) averred that increased temperature average of 1.1C and decreased rainfall average of 81mm causes environmental degradation as seen in Nigeria today. The impact of climate change in Nigeria will result to the country lacking the means to procure food in the world market, sharp decline in yields of staple crops and food insecurity increase and the threat of animal and nature going into extinction. According to Medugu (2009), government has done a lot to combat this challenge of desertification and drought yet, the problem still persists. Olagunju (2015) is of the view that the gap that exist between the formation of policy and strategies of remedying drought and desertification makes it very difficult to combat.

Rivers State and some states in the South- South region of Nigeria are extremely polluted which is as a result of sooth which has taken over the whole atmosphere. This is majorly because of so many illegal refineries and factories that burn fossil fuels. The black particles from the incomplete combustion of fossil fuels and other sources like wood, coal and oil, leave dirty sight and spread foul air in the environment, stains homes, damaging the indoor and air quality. The chemical compounds of soot destroys the ecosystem. Soot enters the body through inhalation, ingestion and the skin leading to increase in respiratory issues like, asthma, and bronchitis including cancer. Study has it that particle exposure leads to 20,000 deaths in the United States and 300,000 asthma attacks while so many lost workdays annually as a result of breathing problems (PuroClean, 2021).

Table 1: Desertification States of Nigeria

States	Geographical		Land Area			
	Region	(Km ²)	% of Nigeria	Number	Density (Km ²)	Rate of Desertification
Sokoto	North West	27.825	3.06	3,702,676	133	Severe
Zamfara	North West	37.931	4.17	3,278,873	86	Severe
Katsina	North West	23.561	2.59	5,801,584	246	Severe
Jigawa	North West	23.287	2.56	4,361,002	187	Severe
Kano	North West	20.280	2.23	9,401,286	464	Moderate
Kebbi	North West	36.985	4.06	3,256,641	88	Severe
Kaduna	North West	42.481	4.67	6,113,503	144	Moderate
Borno	North East	72.609	7.98	4,171,104	57	Severe
Yobe	North East	46.609	5.12	2,321,339	50	Severe
Bauchi	North East	41.119	4.52	4,653,066	113	Moderate
Gombe	North East	17.100	1.88	2,365,040	138	Moderate
Adamawa	North East	38.700	4.25	3,178,950	82	Moderate
Taraba	North East	56.282	6.19	2,294,800	41	Moderate
Niger	North Central	68.925	7.58	3,954,772	57	Moderate
Plateau	North Central	27.147	2.98	3,206,532	118	Moderate
Total		580,841	63.83	62,061,067		

Source: National Bureau of Statistics (2010); National Population Commission (2006).

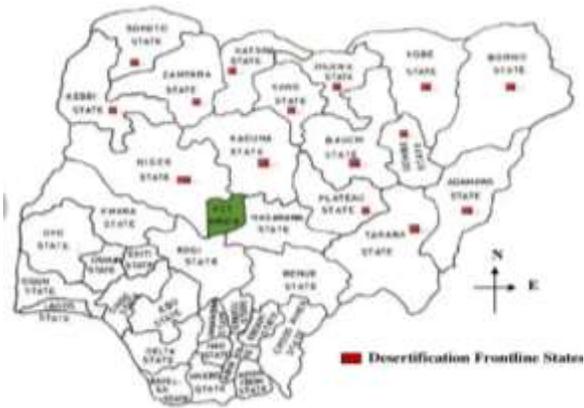


Fig. 5 Nigeria showing desert prone states

Note: The diagram of map of Nigeria showing desert prone States retracted from Azare et al. (2020).



Fig 6: Desertification crisis

Note: Picture showing desertification crisis. Retracted from Azare et al. (2020).



Fig 7: Desert encroachment

Note: Picture showing desert/protection. Retracted from Azare et al. (2020).



Fig 8: Erosion Site in Ideato North

Note: Umuomeji-Umuturu-Ezemazu Urualla Gully Erosion Site in Ideato North L.G.A. Imo State (Wikipedia, 2021).



Fig 9: Flood in Port Harcourt

Note: Retracted from Iheamnachor (2007). Flood in Port Harcourt.

The Impact on Nigeria's Educational Leaders as Catalysts in Actualizing COP26 before 2050.

Every change require individuals who will act as change agents to lead change. School leaders serve as catalysts for change as education is the first point where every change begins and can create transformational action to facilitate better living conditions for future generation. School leaders can leverage education to halt global warming as they deal with the children and are involved in the business of molding their behaviour and attitude as well as guiding and directing them in making informed decisions. This can be achieved through climate literacy which is a part of civic education. Creating the awareness to the children on the effect of climate change and the consequences of not taking action. Educational leaders will utilize this opportunity in creating and developing women education on population explosion as part of contributors to global warming. This awareness will positively influence the rate of population to be greatly reduced before year 2050. This is because increase in population rate results to over exploitation of natural resources, causing climate change.

Climate change literacy will assist the children to become conversant with terms such as global warming, renewable energy, greenhouse gases, carbon footprint, water footprint, recycling, deforestation, green jobs, green taxes and sustainable food and that will increase their quest and interest in science and in solving emerging problems facing the world. The children will reflect on the physical and social world that we live in, and so can think critically, contribute in decision-making as well as taking transformational action to facilitate better living conditions for future living and generation. The children can then help advocate, they will begin to address the causes of climate change and adopt more sustainable lifestyle and develop skills that support different modules. The children's minds and imaginations can be captured right from the nursery stage of education to understand that as young ones, they have longer time to stay on the planet therefore are the ones to face the devastating effects of global warming the most if they do not make efforts to stop it.

Education is a vehicle which not only empower but do more by motivating individuals to become more responsible. As the children are aware of the impending dangers facing them and have been educated on various possible solutions, they will do the needful in adapting to climate change, they will be able to calculate risks, build resilience for climate crises as well as recover from the effects. UNESCO has been the brain behind Climate Change Education for Sustainable Development Programme which is targeted at: helping individuals know the implication of global warming and to increase climate literacy among the youths.

School heads can prioritize education of local communities and the use of technology. They can utilize educational and public awareness campaigns to ensure information access and public participation in programmes on climate change. Sensitizing the public will assist Individuals to understand that little changes in their lives can impact on the climate. As such, Individuals will begin to: Reduce air flights, desist from burning their waste or anything that emits carbon to the air and engage in recycling products, change to the use of electric cars or live-car free, investing on energy efficient products, like washing machines, and know when they need replacing. Moving from gas heating system to electric heat pump, insulate their homes, stop deforestation and start planting trees.

School leaders can work alongside through their various schools, with the World Metrological Organizations (WMO) and weather presenters who have passion and are committed to education and outreach on their networks like; Climate Without Borders that has daily reach of 375,000,000 people with the goal of educating, motivating and actuating weather presenters for them to be able to reach out to their audiences with useful information on climate change (Frankclius, 2021).

School heads can collaborate with educational planners/ managers to integrate climate change within different school subjects. Inclusive in the 4th sustainable development goal on education goal number 13 lays emphasis on climate action. UNESCO has set out guidelines on how to promote climate literacy which requires the government to include climate change education into every level and aspect of education systems. This demands that education managers develop curricula and teaching methods for climate change subjects. Jasmin and Crosier (2019) stated that integrating climate change as a school subject is to be seen as part of the policies and practices on sustainable development as global warming is affecting our environment and social fabric, reshaping the ideas on our life styles.

However, the Global Education Monitoring Report 2016 discovered that 3/4 out of 78 countries where they carried out their investigation had integrated sustainable development in their curricula (Jasmin & Crosier 2019).

School heads from different schools can engage in conferences, work as a team to deliberate on quality education on climate change as it will be a challenging topic for them to address with their teachers. School heads can make use of technological resources, like education platforms that provides teachers free educational resources on environmental concern, climate change, responsible consumption, energy and mobility. Also, provide initial and ongoing teachers training for teachers to gain the necessary knowledge, understanding and competences for climate change education. This means that government is to make available the coordination, support and resources needed for these trainings, to halt climate warming.

School leaders can assist in advocating for government to invest and finance research on science and “smart agriculture” in schools. This is because farming equally contribute a quarter of all climate warming and agriculture is also a solution to halting global warming in two ways; It will help in reducing emission of greenhouse gases and expanding carbon capture from the atmosphere through photosynthesis. Smart agriculture will help to reduce agricultural emissions and promoting biodiversity as well as improving farms climate resilience (Rumney & Lewis, 2021). Farmers can then adapt by; changing planting dates as well as use different crop varieties to avert severe loses and to help increase grains in higher-latitude regions. This is necessary as the improvement of the climate standards require making improvement on land degradation, desertification and depletion of the forest ecosystems in Africa (UN COP26, 2021). The importance of climate change literacy by Nigerian school leaders cannot be over emphasized as it helps in the following;

1. Influence the development of a culture of caring for the environment. Taking the children to farms will enable them learn firsthand on how to take care of animals and plants and promotes future citizenship which is environmentally, socially responsible on international scale.
2. Engage in educational programmes to combat climate change and the attainment of worldwide universal education as urgent priority to bring about clean and healthy environment, bolstering the economy, quality and social organization.
3. Assist in strengthening education in science, technology, engineering and mathematics. Education on climate change being science based also requires the right behavior and action to actualize the goal.
4. Enhance the delivery of environmental education in schools.
5. Contribute in promoting the building of schools that reflect environmental principles (IBERDROLA, 2021).

CONCLUSION

Human actions are indisputably the major drivers of this climate change crisis. Climate change is affecting the entire planet, putting both plants and nature in serious danger and so many of the changings are gradually becoming irreversible. Drastic measure is needed to overcome the impending catastrophe of climate change on man and nature. It is no longer business as usual and pushing the problem to the future, it is about the government walking the talk, being climate smart by leveraging the support of academics cum educational leaders, integrating climate education as school subject for all levels and financing research on science. Making policies to support the environment, Nigeria’s economic and social organization as well as the right behavior and actions. Nigeria and Africa as a whole need partnership with international communities in areas such as, innovation, financial and sustainable technical supports to succeed in this fight. To actualize COP26 goal does not only end at mobilizing finance but requires working together with school leaders who will largely utilize the youths to engage in campaign on climate change in their various communities including harnessing resources to actualize cleaner air and better health for everyone before year 2050.

SUGGESTIONS

To actualize COP26 goal, this paper suggested the following:

1. Climate change and its implication should be widely discussed and communicated to the public and ensure public participation in programmes and information access by the ministry of environment/health through radio and television networks.
2. The entire nation should brace up to this new change by modulating their ways of living and adopting an environmental friendly living by investing on electric vehicles and stop the use of fossil fuel vehicles, plant trees to enhance cleaner air in the atmosphere.
3. School planners should integrate climate change education as part of school subject at all levels of education this will increase climate literacy among young people.
4. Federal Governments should make environmental friendly policies and invest on renewable energy.
5. Government should assist farmers to promote both public and private investment in climate-smart agriculture in Nigeria.
6. Schools heads should collaborate with the World Metrological Organization and Weather presenters to provide climate forecasting services.

REFERENCES

- Azare, J. M., Abdullahi, M., Adebayo, A. & Duala, T. (2020, November 5). *Deforestation, desert encroachment, climate change and agricultural production in the Sudano-Sahelian region of Nigeria*. <http://www.Sematrixscholar.org>
- BBC News, (2021). *What is climate change? A really simple guide*. [www.http://bbc.com/news/science-environment-24021772](http://bbc.com/news/science-environment-24021772).
- Channels Television, (2021, November 3). *President Muhammadu Buhari arrived Glasgow for COP26 climate summit*. [www.http://channelstv.com/2021/11/10/buhari-arrives-in-glasgow-for-cop26-climate-change-summit/](http://channelstv.com/2021/11/10/buhari-arrives-in-glasgow-for-cop26-climate-change-summit/).
- Environmental Protection Agency, United States (2021). *Climate change indicators: Snow & Ice*. www.epa.gov/climate-indicators/snow .
- FAO, (2010). *Global forest resources assessment key findings*. Food and Agriculture Organisation of the United Nations.
- Frankclius, P. (2021, October 28). *Opinion: Agriculture unfairly penalized on climate change*. Farmers Weekly.
- Holder, M. (2021). *The UN IPCC reports warns about irreversible climate effects*. Getty Images.
- IBERDROLA, (2021, November 5). *The importance of climate change education*. [www.https://iberdrola.com/social-commitment/climate-change-education](https://iberdrola.com/social-commitment/climate-change-education).
- Iheamnoch, D. (2007, July 24). *Flood in Port Harcourt*. Nairaland Forum. [www.https://vanguard.com](https://vanguard.com).
- IPCC Experts, (2021). *Code red for humanity*. [www.http://t.co/uU8bb/iuBB](http://t.co/uU8bb/iuBB).
- IPCC, (2018, October 8). *The role of human influence on the climate system is undisputed!-working Group 1 co-chair*. [www.https://t.co/uU8bb4inBB](https://t.co/uU8bb4inBB).
- Jasmin, M., & Crosier D. (2019, January 18). *How can education contribute to awareness and action on climate change?* <https://eacea.ec.europa.eu/national-policies/eurydice/content/how-can-education-contribute-awareness-and-action-climate-change-enEury>.
- Kauffman, M. (2021, August 9). *IPCC report: "Code red" for human driven global heating warns UN chief*. <http://www.new.un.org/story/2021/08>.
- Landmark United Nations, (2021, November 7). *LUN report the world's average temperature stands at 1.1 degree Celsius above pre-industrial land level*. [www.http://givingcompass.org](http://givingcompass.org).
- Medugu, N. I. (2009). *Nigeria and the advancing dessert: Environmental synergy*. World Press.com.
- National Bureau of Statistics (NBS), (2010). *Annual Abstract of statistics 2010*, pp.4.FRN.
- National Population Commission, (2006). *Nigerian population census 2006*. FRN.
- Okoli, J. N. & Ifeakor, A. C. (2014). *An overview of climate change and food security: Adaptation strategies and mitigation measures in Nigeria*. *Journal of Education and Practice*, 5:32.

- Olagunju, T. E. (2012). Forest transition: Towards modulating climate. *Nature Science*, 13(5):86-91.
- Olagunju, T. E. (2015). Drought, desertification and the Nigerian environment: A review. *Journal of Ecology and Nature Environment* 7(7); 196-209.
- Onyeawusi, A. E. & Okegbeje, G. O. (2012). *The impact of deforestation on soil, erosion and on the socio-economic life of Nigeria: Sustainable environmental management in Nigeria*. Book Builders.
- Oxford Academic, (2021). A 2021 update- Climate emergency. <http://www.academic.oup.com/bioscience/climate>.
- Pastermak, D., & Schilssel, A. (2001). *Combating desertification with plants*. Springer.
- PuroClean, (2021). *What is soot and is it dangerous?* <https://www.puroclean.com>blog>what-is-soot-and-is-it-dangerous?>
- Rumney, E. & Lewis, B. (2021). *Our standards*. The Thomas Reuters Trust.
- Shonekan, E. (2004). *Road map for sound environmental practices in Nigeria*. This Day Newspaper.
- Ukpe, M. (2021). "Accelerating land restoration in Africa, the case of the Great Green Wall Initiative". www.https://googleleads.g.doubleclick.netclient=ca-pub.
- United Nations, (2021, November 4). *Cities and local action: Education is key to addressing climate change*. www.https://un.org/en/climatechange/climate-solutions/education-key-addressing-climate-change.
- WIKIPEDIA, (2021) Climate change in Nigeria. www.https://en.m.wikipedia.org/wiki/climate_change_in_Nigeria.