Spanish Journal of Innovation and INTEGRITY
ISSN: 2792-8268
Volume: 44, July-2025
http://sjii.indexedresearch.org

An Examination of Impact of Climate Change on Education Management in Nigeria

Esther Amina Akuh, Ph.D
Department of Educational Foundations, Federal University Lokoja, Nigeria, estheraminaakuhg2@gmail.com

Araiyegbemi, Adeshina Gerald
Department of Philosophy, Federal University Lokoja, Nigeria, adeshinagerald@gmail.com

Abstract: *The impact of climate change on educational management in Nigeria have been widely discussed in recent years. In this review paper, the paper provides a comprehensive analysis of the ways in which climate change has impacted educational management in Nigeria. With a review and comprehensive analysis of existing literature on impact of climate change in Nigeria which were based secondary data that were obtained from print resources and online publications. The paper concluded that destruction of school infrastructure facilities, displacement of learners and teachers, poor health condition, discruption of school calendar, inequalities in education, out of school children and psychological problem on students and teachers are some of the impact of climate change on educational management in Nigeria. Based on the findings, the paper recommends that full implementation of climate change policies and programme adopted in Nigeria.*

Keywords: *Climate change, Educational management, Impact*

1.0 Introduction

Education is the most important weapon that individuals and the society can use to fight different forms of vulnerabilities. Education paves way for the acquisition of knowledge and skills that are worthwhile. Education is regarded globally as a potent instrument for introducing and sustaining social change in human societies as well as shaping its destiny. Apart from serving as a vehicle for enhancing upward social and economic mobility, education has been widely adjudged as the most vital instrument for human development (Eze 2011). Education encompasses a broad range of activities and processes that facilitate learning and promote intellectual, social, emotional, and physical development (Verma, Doharey, & Verma, 2023).

Education involves the transmission of knowledge, values, and skills from one generation to another, ensuring the continuity and advancement of civilizations. Education goes beyond formal schooling, extending to informal and non-formal learning experiences. Education is the acquisition of information that include cultivation of critical thinking, creativity, problem-solving abilities, and ethical decision-making. Education empower individuals to become lifelong learners, adaptable to the challenges of a rapidly evolving world (Verma, et al 2023). Education means studying in order to obtain a deeper knowledge and understanding of a variety of subjects to be applied to daily life. Education is not limited to just knowledge from books, but can also be obtained through practical experiences outside of the classroom (University of the people 2024). The realization of educational objectives depends on effective educational management.

According to Obi (2004) management in education implies the management of human and material resources available in education and using them systematically for the achievement of educational objectives. From the above definitions, one can see that management in education culminates in attainment of goals through coordination of human and material resources. Scientifically, management can be defined as the coordination of all the resources of an organization through the process of planning, organizing, directing and controlling activities in the organization in order to attain organizational goals. Peretomode (1991) defines educational management as a social or interactional process involving a sequence of coordinated events such as planning, organizing, coordinating and controlling human and material resources in order to achieve desired outcomes in the fastest and most efficient ways. Management of education consists of planning, organizing, coordinating, procuring and maintaining the available educational resources with the sole aim of achieving educational objectives. This is why Agun (1988) has defined educational management as the various approaches used to provide educational resources, facilities and other related services in schools to make teaching and learning effective.

Climate change is a natural and severe threat to Nigeria's economic prosperity and social and political stability, seriously challenging human health, basic food security, water supply, biodiversity, and productive natural resources (Raimi et al., 2021). Nigeria, Africa's most populous country and one of the continent's leading economies, is at the forefront of the climate challenge. According to World Bank projections for a very high emissions scenario, Nigeria is likely to experience a significant rise in temperatures, reaching between 2.9°C and 5.7°C by 2100. The country ranks 154th out of 181 in the ND-GAIN 2021 index, which assesses vulnerability and resilience to climate change. Its dependence on agriculture makes it particularly sensitive to climate disruptions. According to the World Bank, around 78% of Nigeria's land area is devoted to agriculture, the majority of which is rain-fed (with less than 1% irrigated) and carried out by small-scale farmers using traditional methods. In addition, its varied geography exposes it to many extreme weather phenomena.

In the north, rising temperatures and desertification could exacerbate existing problems related to water supply and food security, which are already major challenges inthis region. For example, rising CO_2 levels in the atmosphere are expected to lead to a 17% drop in nutrients in rice, while fluctuations in temperature and rainfall will likely reduce rice yields. Also, in the south, coastal areas and river basins are exposed to flooding, resulting in loss of life and damage to infrastructure. In 2022, according to the Nigerian Hydrological Services Agency (NIHSA), the worst floods on record destroyed more than 440,000 hectares of farmland, affecting more than 1.4 million people, causing more than 662 deaths and displacing thousands of residents. Direct economic damage is estimated at a median value of USD 6.68 billion. Rising sea levels are also threatening the Nigerian coast, particularly Lagos, with erosion, salinisation of land and flooding. According to an article by the Boston Consulting Group, Lagos could be flooded by extreme weather events under 1.5 metres of water, and up to 2.5 metres by 2050 (Safeguarding Coastal Cities from Climate Change, 15 mars 2023).

Climate change is accelerating the degradation of ecosystems in Nigeria, reducing the country's resilience to climatic shocks. Deforestation, driven by agricultural expansion, illegal logging and charcoal production, is leading to a loss of biodiversity, soil erosion and a reduction in the capacity of forests to absorb carbon. According to the Global Forest Watch (GFW) initiative, between 2001 and 2023, Nigeria lost 1.33 Mha of tree cover, equivalent to a 13% decrease in tree cover since 2000 and 724 Mt of CO_2 emissions. Extreme weather events cause significant damage to infrastructure and threaten human life (Agom-Ucha & Nwodeh, 2020). Climate-related disasters have increased, including heatwaves, droughts, desertification, harmattan, gully erosion, epidemics, and flooding (Ifeanacho & Okudu, 2020). These impacts that comes with climate change appear affecting the heath sector, tourism sector, sport, public and private institutions including education. It is based on this that this paper seeks to explore the impact of climate change on education in Nigeria.

2.0 Purpose of the study

The purpose of the study is to explore the impact of climate change on education in Nigeria. The specific objectives includes;

1. to find out the comprehensive definition of climate change;
2. to identify the causes of climate change;
3. to assess the impact of climate change on educationa management in Nigeria

2.0 Literature Review

2.1 Concept of Climate Change

Climate change reflects the variations in the average daily weather conditions such as temperature, humidity, rainfall and sunshine of a location over an extended period. Climate change in Nigeria threatens economic growth in sectors dependent on climatic conditions (Adams,, Zubair, & Olatunde-Aiyedun, 2022).

Climate change is a phenomenon that has engulfed all aspects of human endeavours, its ravaging and devastating effects abound all over the world. Climate change according to Akuegwu, Nwi-Ue, and Nwikina (2012) is an issue that is gaining wide spread apprehension and is taking central stage in virtually every human endeavour in the world today. The Inter Governmental Panel on Climate Change, (IPCC TAR, and 2001 a) referred to climate change as any change in climatic conditions over time, attributed to natural phenomenon or human activity or a combination of both. Such change in climatic condition according to BNRC (2011) normally results in the variation of atmospheric temperature, sometimes giving rise to excess heat, and variation in rainfall pattern and intensity.

Climate change as defined by Uchegbu and Ugwuanyi (2009) in Inikpi, (undated) as the persistent fluctuation in the climatic elements for a considerable length of time usually 35 years. It is phenomenon created by human beings and nature, which devastated the earth and cause hardship of unpredicted magnitude to the living. United Nation Environmental Programme (UNEPA) referred to climate change as extreme reaction of the weather phenomenon which creates negative impact on agricultural resources, water resources, human health, and depletions of ozone layer, vegetation, soil and doubling of CO_2 in the ecosphere.

2.2 Causes of climate Change

Amarachi, Ihuoma,, Ojiugo & Osmond, (2025); Olatunde-Aiyedun, et al (2022); IKnez, S., Štrbac,and Podbregar,(2022) and PCC (2018) in agreement identified the following as causes of climate change;

Greenhouse Gas (GHG) Concentrations in the Atmosphere

Levels of atmospheric carbon dioxide (CO2), methane (CH4), Carbonflourocarbon (CFCs), and nitrous oxide (N2O) continue to rise. The temporary reduction in CO2 emissions in 2020 during the pandemic had little impact on the growth of atmospheric concentrations (what remains in the atmosphere after CO2 is absorbed by the ocean and biosphere). Data from all global locations, including flagship observatories at Mauna Loa (Hawaii, USA) and Cape Grim (Tasmania, Australia) indicate that levels of CO2 continued to increase in 2021 and 2022. In May 2022, CO2 concentration at Mauna Loa reached 420.99 ppm (419.13 ppm in 2021) and at Cape Grim 413.37 ppm (411.25 ppm in May 2021). Global fossil CO2 emissions in 2021 returned to the pre-pandemic levels of 2019 after falling by 5.4% in 2020 due to widespread lockdowns. Preliminary data shows that global CO2 emissions in 2022 (January to May) are 1.2% above the levels recorded during the same period in 2019, driven by increases in the United States, India, and most European countries. Despite a strong fluctuation in global emissions over the past two and a half years, fossil CO2 emissions fell significantly in 23 countries (many European

countries, Japan, Mexico, and the USA) during the pre-pandemic decade of 2010–2019. A quarter of GHG emissions from land-use change are associated with the trade of food between countries, of which more than three-quarters are due to land clearing for agriculture, including grazing.

Deforestation

Deforestation is the loss of tree cover, usually as a result of forests being cleared for other land uses such as farming or ranching. Some limit the definition of deforestation to the permanent conversion of forests to another habitat. Others add to this definition by including the conversion of natural forests to artificial forests such as plantations. Trees may be cut down to clear lands for building houses, industries, and factories, for growing crops, for grazing cattle, sheep, horses, etc. Deforestation could lead to soil erosion, flooding, and desertification. There is increasing evidence that climate change is affecting forests and forest ecosystems in Africa, as well as the livelihoods of the forest-dependent communities and the national economic activities that rely on vegetation services.

Hunting of Animals or Wildlife (Loss of Biodiversity)

Biodiversity is the variability among living organisms, including the genetic and structural differences between individuals and within and between individuals and within and between species. The world's biodiversity has a total of 1,263,500 species of plants and animals. It provides us with all the necessities of life and sustains and nourishes us. Biodiversity plays a direct role in climate regulation. Climate always changes resulting in evolutionary changes in the species. Millennium Ecosystem Assessment (MEA) predicts climate change to be the principal threat to biological diversity. The average global temperature has increased by 0.6°C since the mid-1800s and is predicted to rise by 1.4 - 5.8°C by the year 2100. The global mean sea level has risen by 10 to 20cm (8) and may further rise to 88 cm. The thickness of Arctic ice has decreased by about 40%. Many areas are facing the problem of water shortage. Climate change has resulted in the extinction of animals like the golden toad and the Monteverde harlequin frog. More frequent heat waves of longer duration and greater intensity are projected globally. Extreme climatic events (heat waves, storms, and hurricanes) and tropical vectorborne diseases (malaria) are predicted to increase which leads to loss of biodiversity. One million of the eight million species on the planet are at risk of extinction. Forests and oceans are polluted and destroyed (IPCC, 2018).

Industrial emissions:

Industrial activities and equipment produce greenhouse gases that are emitted into the atmosphere instead. Mbah (2024) and Olatunde-Aiyedun, Micheal Olatunde, and Ogunode (2025) noted that burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun’s heat and raising temperatures. The main greenhouse gases that are causing climate change include carbon dioxide and methane. These come from using gasoline for driving a car or coal for heating a building, for example. Clearing land and cutting down forests can also release carbon dioxide. Agriculture, oil and gas operations are major sources of methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main sectors causing greenhouse gases (UN).

Climate change is a complex and pressing issue that has far-reaching consequences for our planet. The causes of climate change have been a topic of intense debate and research in the scientific community. One identified cause is the increase in greenhouse gases in the Earth's atmosphere, primarily due to human activities such as burning fossil fuels and deforestation. These gases trap heat from the sun, leading to an increase in global temperatures, known as the greenhouse effect. Additionally, changes in land use and agriculture practices have also played a role in altering the Earth's climate. Other factors such as volcanic activity, solar radiation, and natural cycles also contribute to climate change. Understanding and addressing the causes of climate change is crucial in mitigating its effects and protecting our planet for future generations.

3.0 Method

This study sought to understand and examine impact of climate change on educational management in Nigeria by focusing on previously published scientific literature. The Elsevier, CEON, and Goggle Scholar databases were used to search for articles that matched the keywords "climate change" education." The articles included in this study were original articles; open access; discussed related research questions; published from 2004 to 2023; and came from Scopus Q1-Q4 reputable journals, Science and Technology Index (SINTA) accredited journals (S1-S6), and the Web of Science with core collection. The various research results obtained were then analyzed with regard to the application of the educational management. All the data were descriptively analyzed and are presented in the form of short narratives. (Adapted from Adnyana, Mahendra, & Raza, 2023; Ogunode, 2025)

4.0 Result and Discussion on Impact of Climate Change on Education in Nigeria

The impact of climate change on educational management in Nigeria is a pressing issue that needs to be addressed. Climate change has caused various challenges in the education sector, affecting both the quality and accessibility of education in the country.

Destruction of School infrastructure facilities

Climate change in Nigeria has affected the educational system by leading to destruction of school infrastructure facilities. School infrastructural facilities according to Ogunode and Agwor (2021) refer to social capital within the school environment. They include school buildings/complexes such as classrooms, tables, exam hall, chairs, auditoria, desks, staff offices, seminar/conference/board rooms, laboratories, workshops, studios, farms, gymnasia, central libraries, specialized/professional libraries, faculty libraries, departmental libraries, etc., Institute/centers' specialized facilities e.g. ICT infrastructure, special laboratories, conference facilities, etc., and Boards e.g. interactive, magnetic, screen and chalk, etc., ICT that is computer laboratories and services, network connectivity, multi-media system, public address system, slide, and video projectors, and Ergonomics furnishing in laboratories, libraries, and lecture rooms/ theaters, moot courts, and studios, etc. Favretto, Dougill, Stringer, Afionis, & Quinn, (2018) noted that one of the consequences of climate change on education in Nigeria is the increase in natural disasters such as floods, droughts, and extreme weather events. These disasters often damage school buildings and disrupt the learning process, leading to educational disparities and hindering academic progress. That the impact of floods on education in Nigeria has been a growing concern in recent years. With repeated instances of flooding in various parts of the country, the education sector has been greatly affected. Floods have been known to damage classrooms and school facilities, causing disruptions in the education system. This has led to a considerable decrease in the quality of education and has also hindered the access to education for many students….noted that the changing climate has also affected the availability of natural resources used for education, such as water and electricity. This has caused schools in remote areas to face difficulties in providing a conducive learning environment for students (Danso-Abbeam, Ojo, Baiyegunhi, & Ogundeji, 2021; Ayanlade, Radeny, & Akin-Onigbinde, 2017).

Displacement of learners and teachers

Climate change that has resulted to heavy rainfall and flood have led to displacement of parents, teachers and students. Climate change has also resulted in the displacement of communities, which has a direct impact on the education of children. Displaced families often struggle to find new schools for their children, causing disruptions in their education and hindering their academic success (Adams, Zubair, & Olatunde-Aiyedun, 2022). Moreover, floods also result in the displacement of students and teachers, forcing them to temporarily relocate to safer areas. This causes disruptions in the academic calendar and can lead to extended school closures, further hindering the progress of education in Nigeria. Students

who are displaced may also face challenges in continuing their education, as they may not have access to their textbooks and other learning materials (Onyeneke, Amadi, & Njoku, 2022).

Poor Health condition

Climate change has also affected the health of students and teachers in schools, as it increases the risk of diseases such as malaria, which can lead to absenteeism and affect their academic performance…. Climate change has also affected the health of students and teachers, resulting in increased absenteeism and reduced productivity. As temperatures rise and air quality decreases, students and teachers are more prone to heat-related illnesses and respiratory diseases, leading to a decline in academic performance (Chime,. 2021;Agom-Ucha, & Nwodeh, 2020).

Discruption of school calendar

One of the most significant effects of climate change on education in Nigeria is the disruption of school activities and infrastructure. Extreme weather events such as flooding and droughts have led to the closure of schools and damage to school buildings, making it difficult for students to access quality education (Ifeanacho, & Okudu, 2020). The effects of floods on education in Nigeria is the destruction of physical infrastructure, such as schools, classrooms, and textbooks. This not only affects the learning environment but also leads to the loss of valuable educational resources and academic calendar discruption. Students are forced to attend classes in damaged or makeshift facilities, which can have a negative impact on their learning and academic performance (Adams,, Zubair, & Olatunde-Aiyedun, 2022; Abegunde, Sibanda, & Obi, 2019).

Inequalities in education

Climate change has deepened existing inequalities in education in Nigeria. Poorer and more marginalized communities, who are often the most vulnerable to the effects of climate change, are at a disadvantage in accessing education. This further perpetuates the cycle of poverty and hinders social and economic development (Bryioku,2024; Raimi, Vivien, & Oluwatoyin, 2021; Daka, 2023).

Out of school children

The impact of climate change on education in Nigeria is not limited to these factors, but it also has long-term effects on the economy and social development of the country. The changing climate has also put pressure on the agriculture sector in Nigeria, which is a major source of livelihood for many families (Olajire, Matthew, Omotara, & Aderanti, 2019). This often results in children having to drop out of school to help their families with farming and other activities, further hindering their education (Mbah 2014; Lwasa, 2015).

Psychological effects on students and teachers

The physical damage and displacement caused by floods, there are also significant psychological effects on students and teachers. The traumatic experience of a flood can have long-lasting effects on the mental health of individuals, affecting their ability to focus and learn. This can result in a decline in academic performance and a decrease in the overall quality of education in the affected areas (Safeguarding Coastal Cities from Climate Change, 2023).

4.1 Finding

The paper revealed that destruction of school infrastructure facilities, displacement of learners and teachers, poor health condition, discruption of school calendar, inequalities in education, out of school children and psychological effects on students and teachers are the impact of climate change on educational management in Nigeria.

4.2 Conclusion and Recommendations

In conclusion, the effects of climate change on educational management in Nigeria are far-reaching and have a significant impact on the education sector. The paper concluded that destruction of school infrastructure facilities, displacement of learners and teachers, poor health condition, discruption of school calendar, inequalities in education, out of school children and psychological effects on students and teachers are the impact of climate change on education in Nigeria.

Therefore, it is essential to address this issue and implement sustainable solutions to mitigate its impact on education. Some of the migration actions available for school administrators and managers according to Olatunde-Aiyedun, et al (2025) include the following recommendations:

a) Schools should offer Environmental Education programs, as well as inculcate environmental education as a general studies (GST) to promote the right attitude towards sustainable use of environmental resources and acquire environmental literacy on climate adaptation and mitigation measures. Governments should take the necessary steps to make it a part of the curriculum.
b) School teachers should be provided with the necessary advanced level of educational and hands on training from scientists from local research bodies on climate change
c) Governments have a critical role in combating global warming from the legislative and policy perspective, but to ensure the targets set for 2050 have a realistic chance of being achieved, we need change at a societal level. The IS and technology industry has a critical role to play in the monitoring of progress toward net zero, but also a pivotal role in the development of innovative solutions to better manage emissions and offer people alternatives to current carbon-based practices.
d) Climate change should not only be a course in general students where it will be compulsory for all students to offer and pass before graduating successfully from a university, but students should inculcate the right attitude of becoming ambassadors for sustainable living by responsibly making use of technologies in a way that helps reduce carbon emissions.
e) Higher education institutions and schools can provide knowledge and resources to learners and create awareness, inspiring the next generation to navigate the complexities of climate change.
f) Education and training can encourage learners to think about technological and behavioral changes to reduce and mitigate environmental impact within their local sphere of influence and macro level.
g) Stakeholders to accelerate carbon-neutral business practices and build environmental resiliency. Several universities are forming coalitions committed to climate action, such as the University or school Climate Change Coalition, to leverage scientific knowledge and expertise for climate change solutions.

References

1. ADAMS, S.O., ZUBAIR, M.A. & OLATUNDE-AIYEDUN, T.G. (2022). ROLE OF SOME SOCIAL INFRASTRUCTURES INDICATORS ON ECONOMIC GROWTH OF NIGERIA: A CAUSALITY ANALYSIS APPROACH. *ECONOMIC GROWTH AND ENVIRONMENT SUSTAINABILITY* (EGNES), 1(2), 41-46. HTTPS://DOI.ORG/10.26480/EGNES.02.2022.41.48
2. ABEGUNDE, V.O.; SIBANDA, M.; OBI, A. (2019).THE DYNAMICS OF CLIMATE CHANGE ADAPTATION IN SUB-SAHARAN AFRICA: A REVIEW OF CLIMATE-SMART AGRICULTURE AMONG SMALL-SCALE FARMERS. CLIMATE **2019**, 7, 132.
3. AGOM-UCHA, C. & NWODEH, P. (2020). COMBATING CLIMATE CHANGE FORSUSTAINABLE FOOD SECURITY IN NIGERIA INTERSECTING SCIENCE WITH THE LAW. UNIZIK LAW JOURNAL. UNIZIK.EDU.NG

4. AYANLADE, A.; RADENY, M.; AKIN-ONIGBINDE, A.I. (2017) CLIMATE VARIABILITY/CHANGE AND ATTITUDE TO ADAPTATION TECHNOLOGIES: A PILOT STUDY AMONG SELECTED RURAL FARMERS' COMMUNITIES IN NIGERIA. GEOJOURNAL **2017**, 83, 319–331. [CROSSREF]
5. CLIMATE CHANGE IN THE WEST BALKANS. ENVSEC, ZOÏ ENVIRONMENT NETWORK.
6. BRYIOKU, J (2024). CLIMATE CHANGE IN NIGERIA: A BRIEF REVIEW OF CAUSES, EFFECTS AND SOLUTION
7. HTTPS://FMINO.GOV.NG/CLIMATE-CHANGE-NIGERIA-BRIEF-REVIEW-CAUSES-EFFECTS-SOLUTION/ -
8. CHIME,. V. (2021). HOW NIGERIA CAN FIGHT CLIMATE CHANGE THROUGH NATURE-BASED SOLUTIONS. HTTPS://WWW.THECABLE.NG/INSIGHT-HOW-NIGERIA-CAN-FIGHT-CLIMATE-CHANGE-THROUGH-NATURE-BASED-SOLUTIONS/
9. DANSO-ABBEAM, G.; OJO, T.O.; BAIYEGUNHI, L.J.S.; OGUNDEJI, A.A. (2021). CLIMATE CHANGE ADAPTATION STRATEGIES BY SMALLHOLDER FARMERS IN NIGERIA: DOES NON-FARM EMPLOYMENT PLAY ANY ROLE? HELIYON **2021**, 7, E07162.
10. DAKA, E. (2023), ADOPTING CLEAN TECHNOLOGIES TO CLIMATE CHANGE ADAPTATION STRATEGIES IN AFRICA: A SYSTEMATIC LITERATURE REVIEW. ENVIRON. MANAG. **2023**, 71, 87–98.
11. EZE, O. I. & ANTHONY, O. (2011). THE CHALLENGES OF INSECURITY IN NIGERIA: A THEMATIC EXPOSITION: *INTERDISCIPLINARY JOURNAL OF CONTEMPORARY BUSINESS*, 3(8), 17-26.
12. FAVRETTO, N.; DOUGILL, A.J.; STRINGER, L.C.; AFIONIS, S.; QUINN, C.H. (2018). LINKS BETWEEN CLIMATE CHANGE MITIGATION, ADAPTATION AND DEVELOPMENT IN LAND POLICY AND ECOSYSTEM RESTORATION PROJECTS: LESSONS FROM SOUTH AFRICA. SUSTAINABILITY **2018**, 10, 779.
13. GOTENG, K,. A,. EMMANUEL C, H & ALIKEJU,, E, H (2012) THE IMPACT OF CLIMATE CHANGE IN NIGERIA: IMPLICATIONS FOR SCHOOLING. *MEDITERRANEAN JOURNAL OF SOCIAL SCIENCES VOL 3 (16),137-145*
14. IFEANACHO, M. O., & OKUDU, H. O. (2020). CLIMATE CHANGE AND NUTRITION SECURITY IN NIGERIA. JOURNAL OF APPLIED SCIENCES AND ENVIRONMENTAL MANAGEMENT, 24(11), 1853-1860. AJOL.INFO
15. INIKPI, O,. H (UNDATED) CHALLENGES OF CLIMATE CHANGE AND THEIR EFFECT ON SECONDARY SCHOOL RESOURCES MANAGEMENT IN NIGERIA.
16. IPCC. (2001), IMPACT, ADAPTATION AND VULNERABILITY. CONTRIBUTION OF WORKING GROUP II OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE TO THE THIRD ASSESSMENT REPORT OF IPCC. LONDON: CAMBRIDGE UNIVERSITY PRESS.
17. LWASA, S.L. (2015). A SYSTEMATIC REVIEW OF RESEARCH ON CLIMATE CHANGE ADAPTATION POLICY AND PRACTICE IN AFRICA AND SOUTH ASIA DELTAS.
18. REG. ENVIRON. CHANG. **2015**, 15, 815–824.
19. MBAH B,.A.(2014) CHALLENGES OF CLIMATE CHANGE ON PROVISION OF AND ACCESSIBILITY TO QUALITY EDUCATION IN NIGERIA. *PUBLISHED BY EUROPEAN CENTRE FOR RESEARCH TRAINING AND DEVELOPMENT UK*, 2,(4), PP. 26-32.

20. OGUNODE, N. J. & AGWOR O., J. (2021). PERCEPTION OF SECONDARY SCHOOL TEACHERS ON THE CAUSES OF INADEQUATE INFRASTRUCTURAL FACILITIES IN PUBLIC SECONDARY SCHOOLS IN GWAGWALADA AREA COUNCIL OF F.C.T, ABUJA, NIGERIA. *ELECTRONIC RESEARCH JOURNAL OF BEHAVIOURAL SCIENCES*, 4 (2021),1-9
21. OGUNODE, N,. J., SOLOMON, A,. T & IDONIGIE, A (2024). THE IMPACT OF ECONOMIC HARDSHIP ON EDUCATION IN NIGERIA. *AMERICAN JOURNAL OF MANAGEMENT PRACTICE*, 1(6), 61-69
22. OLAJIRE, M.A.; MATTHEW, O.J.; OMOTARA, O.A. & ADERANTI, A. (2019). ASSESSMENT OF INDIGENOUS CLIMATE CHANGE ADAPTATION STRATEGIES AND ITS IMPACTS ON FOOD CROP YIELDS IN OSUN STATE, SOUTHWESTERN NIGERIA. AGRIC. RES. **2019**, 9, 222–231. [CROSSREF]
23. ONYENEKE, R.U.; AMADI, M.U. & NJOKU, C.L. (2022) CLIMATE CHANGE ADAPTATION STRATEGIES BY RICE PROCESSORS IN EBONYI STATE, NIGERIA. EKOLOGIA **2022**, 41, 283–290.
24. SAFEGUARDING COASTAL CITIES FROM CLIMATE CHANGE, 15 MARS 2023
25. RAIMI, M. O., VIVIEN, O. T., & OLUWATOYIN, O. A. (2021). CREATING THE HEALTHIEST NATION: CLIMATE CHANGE AND ENVIRONMENTAL HEALTH IMPACTS IN NIGERIA: A NARRATIVE REVIEW. MORUFU OLALEKAN RAIMI, TONYE VIVIEN ODUBO & ADEDOYIN OLUWATOYIN OMIDIJI (2021) CREATING THE HEALTHIEST NATION: CLIMATE CHANGE AND ENVIRONMENTAL HEALTH IMPACTS IN NIGERIA: A NARRATIVE REVIEW. SCHOLINK SUSTAINABILITY IN ENVIRONMENT. ISSN. ACADEMIA.EDU
26. WORLDVISION (2023). WHY IS EDUCATION IMPORTANT AND HOW DOES IT AFFECT ONE'S FUTURE?. HTTPS://WWW.WORLDVISION.CA/STORIES/EDUCATION/WHY-IS-EDUCATION-IMPORTANT
27. WORLD-BANK (2024) THE WORLD-BANK IN NIGERIA. HTTPS://WWW.WORLDBANK.ORG/EN/COUNTRY/NIGERIA/OVERVIEW
28. VERMA, A, DOHAREY, R,.K & VERMA. K (2023). EDUCATIon: Meaning, Definitions and Types.