# UTILIZATION OF CLIMATE CHANGE INFORMATION SOURCES AMONG FARMERS IN NIGERIA

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**ABSTRACT**:
The study reviewed the existing literature on sources of climate change information and their use by Nigerian farmers. It was also found that there was a high level of awareness of climate change information in the state, with the main sources of climate change information including radio, television and extension services. Farmers also use climate change information to make decisions about what and when to plant, as well as to plant improved crop varieties, among other things. There are also challenges such as decreasing annual rainfall, deforestation, insect pest attacks and high temperatures, to name a few. A recommendation was made for a more intensive climate change awareness campaign, as well as an increased budget allocation to the agricultural sector for greater mitigation and adaptation capacity for farmers.
**Keywords**: Use, awareness, farmers, information, climate change, Nigeria

## INTRODUCTION

Climate change is no longer relevant. What will be in the news for a long time is the level of awareness, access and capacity building of vulnerable populations for adaptation and/or mitigation of the effects of climate change around the world, particularly in developing countries like Nigeria. Over the years, world leaders have held international summits to find solutions to this global threat. According to Stevens et al. (2017), the most recent agreement reached by the United Nations Conference of the Parties at the World Climate Change Conference (COP21) in December 2015 was hailed by many as a watershed moment. According to them, the agreement is still strewn with pitfalls. As a result, some world leaders are questioning their full commitment to the principles of the agreement. As our interest is in the availability, awareness, access and, of course, use of climate change information, we will avoid as much technical detail as possible in this work and stick to the basic knowledge of climate change. profane.

Banmeke et al. (2017) pointed out that the Intergovernmental Panel on Climate Change (IPCC, 2001) defines climate change as statistically significant variation caused by human and non-human activities that last for decades or longer. Deforestation, oil spills and gas flaring are examples of human causes, while volcanic eruptions and ocean currents are examples of non-human causes. This definition shows that it is caused both by human activities and by uncontrollable natural circumstances. It poses a significant threat to the highly industrialized and less industrialized worlds. It has also been reported that third world or developing countries are more vulnerable to the effects of climate change, despite the fact that developed countries emit the most carbon and other high-level industrial wastes. The West African sub-region would also be more vulnerable. Individually, farmers, fishermen, other rural dwellers and city dwellers are the most vulnerable groups. This high level of risk in Africa and in particular sub-Saharan Africa is obviously the result of the high rate of illiteracy, poverty, ignorance and corruption perpetrated by successive corrupt governments which have not had the political will to put into education, economic and agricultural policies/interventions that they had developed at different times in history as part of the national development plans of their different countries. According to Abdulhamid (2015), some of these policies in the agricultural sector aimed at achieving food security and self-sufficiency since 1970 included Agricultural Development Project (ADP), Agricultural Colonization and National Accelerated Food Production Program (NAFPP) , Operation Feed the Nation (OFN), Crédit Agricole.
Guaranteed Diet (ACGS), Directorate of Food and Rural Infrastructure (DFRI), the others are the National Special Program for Food Security (NSPFS), the National Food Reserve Agency of Nigeria (NFRA) and the agricultural transformation (ATA). Despite all these laudable programs, Nigeria has not been able to achieve food security and self-sufficiency, perhaps due to various forms of climatic changes plaguing it, ranging from desertification; Lake Chad recession –Wakili, (2018) reported that the Lake Chard basin has dried up to 10 percent of its original size; oil pollution in the Niger Delta; floods – across the country; gully erosion to the southeast and excessive heat. According to an AFP report on August 24, 2010, the Nigerian Meteorological Agency had predicted light rainfall, but it fell in torrents. That doesn't mean the agency wasn't confident in its prediction, but that climate change had an impact on it. According to Rabiu (2014), "information is knowledge communicated or received regarding a specific fact or circumstance, knowledge gained through study, communication and research". The adage "information is power" will be relevant in the life of man for a very long time. If information is

needed to make an informed decision that will help us avoid or at least mitigate the disasters caused by climate change, citizens, especially the most vulnerable, have the right to have it.

Vulnerable people can enhance their ability to adapt or mitigate the effects of this threat to humanity through correct and timely information; otherwise, the risk of human extinction should not be ruled out. The Nigerian government is working hard to diversify the country's economy, with agriculture as the main focus. Some of the consequences of climate change that affect food production include sudden weather changes, lack of rainfall, land degradation, desertification and flooding, and excess heat. The Federal Ministry for the Environment has created a Climate Department. Change with the mandate to drive the federal government's vision to mitigate and adapt to the impacts of climate change. Their mandate includes providing leadership in promoting the appropriate culture of adaptation, as well as supporting research, education and awareness. Our governments are great at making laws, but they don't have the culture to voluntarily put those policies into action. It is impossible to overstate the importance of being aware of the knowledge available. Adapting to the threats of climate change by switching to modern, climate-smart agricultural practices is becoming more difficult due to a lack of knowledge (Ibrahim, 2017).

Beyioku (2016) reported that one of the solutions offered by a 2-day South-South Regional Climate Change Capacity Building Workshop was to raise awareness of climate change issues which is currently at an all-time low, especially among vulnerable groups such as women, children, even at the grassroots level, especially rural people, as well as the revival of the tree planting program by sensitizing individuals to plant trees. This indicates that awareness of climate change issues in Nigeria is low, implying that our government has not done enough to address the issue. Climate change issues should now be known to everyone, forcing people to use the details. It is only when the right climate change information is available and people know about it and also have access to it (because it is one thing to know the information and another to access it) that they can be used, which of course entails making the right decisions about what to plant when as well as what else to do each time can be achieved and the effect of climate change on our agricultural production efforts and animal would have been reduced or avoided.

**Awareness of the term climate change**

According to Akpan et al. (2012) a report in The Guardian, Monday 9 March 2009, p. 31 established that Nigerians' understanding of climate change issues, including the negative effect of rapidly changing climate on life, is low. However, in their study, Abdulkareem et al. (2012) observed that teachers' awareness of climate change was high with a high rate of 84% but on the contrary, students' awareness rate was very low with only 31% indicating their awareness of the phenomenon. It is worrying that teachers have such a high level of awareness while their students have recorded a very low level of awareness. This is an indication that it is not yet included in our school's curriculum. These children if they are aware of this phenomenon can help spread the information. Idoma and Mamman (2016) in their study found that 92% of their respondents were familiar with the terms climate change and variability. According to them, the high rate of their awareness is an indication that climate variability is very evident coupled with the fact that 49.2% of the farmers have more than forty years of agricultural experience. Additionally, Adeleke and Omoboyeye (2016) reported 100% awareness of climate change among fish farmers surveyed. This high percentage could be the result of the high literacy rate in their study area or among its respondents.

**Information on climate change**

The saying that information is power is indisputable. Information is needed to make a fair or informed decision. In the face of the threats posed by climate change to the world, especially in Nigeria, there is a need for adequate and timely information to be disseminated to the public. This information will help people, especially the most vulnerable, to build their capacity to adapt and/or mitigate the effects of climate change. Idoma and Mamman (2016) in their study found that early warning signals, rainfall forecasting, drought forecasting, adaptation technology, food aid, temperature change, health services Human and Veterinary Services had average scores above two, placing them above depending on climate needed. modify the information. Similarly, Idoma and Mamman (2016) reported the need for climate information and knowledge sharing among scientists, policy makers and community institutions to improve practical adaptation at the local level.

**Causes of climate change**

Climate change or global warming is said to be caused by both human and natural factors. According to the Intergovernmental Panel on Climate Change (IPCC) in Onu and Ikehi (2017), the causes of climate change can be linked mainly to factors such as the industrial revolution, for example the activities of automobiles and d Other industries have resulted in the emission of several gases. such as carbon dioxide in the atmosphere which, over time, affects the composition of greenhouse gases, leading to climate change; The burning of fossil fuels by oil producing companies and refineries which emit greenhouse gases into the atmosphere; Land use changes such as deforestation and desertification that drive climate change, and agricultural activities such as bush burning, fertilizer application, fermentation, among others, all of which are anthropological influencers of climate change. At present, the world is going through a situation of global warming caused by anthropogenic factors (human activities) and if it continues unabated for decades or centuries with significant ecological

impacts, the earth will reach climate change ( warm or warm climate) (Odjugo, 2011).

**Effects of climate change**

Ibrahim (2017) reported that the village of Godai in Kaduna State in northwestern Nigeria is already experiencing reduced rainfall, with farmers lamenting poorer harvests of rice, maize and vegetables. Long-term forecasts predict even drier conditions in the north, with a potential drop in yields from rain-fed agriculture of up to 50 percent, he said. Low yield is one of the effects of climate change on farmers. This is due to erratic/unpredictable rainfall, intense heat, advancing desert, flooding, narrowing of rivers and lakes, land degradation, landslides, erosions, among others. Dadzie et al. (2012) in their conclusions agreed with this when they reported that the production experience of the food crop farmers interviewed revealed that floods, pest and disease outbreaks, drought and erratic rainfall are the current incidence of events they encountered with seasonal changes due to climate variability and change. Sagoe (2006) also agrees with this in his report on the study of climate change and root crop production in Ghana. Factors such as unreliable, erratic and unpredictable rainfall are some of the effects of climate change. Idoma and Mamman (2016) reported the main adverse effects of climate change in the area they studied, namely flooding of agricultural land, crop failure, crop failure, poor performance and high mortality rate of livestock, wilting and rotting of agricultural products, failure of fish harvest and unusual changes. crop and animal pests/diseases. They reported that all of the above variables had mean scores greater than two. Thus, these are severe effects of climate change on the socio-economic activities of Agatu Local Government Area in Benue State.

**Sources of information on climate change**

Owusu-Ansah, (Anunobi, and Udem, (2014) defined information as factual data, ideas, and other knowledge emanating from any society that is identified as valuable, sometimes gathered on a regular basis, organized in some way, transmitted to others, and used in a meaningful way. From the above definition, it can be deduced that information is meaningless if it is not collected, processed, disseminated and used. As the dissemination of information on climate change is very essential, the source of the information. There is a target audience for all information and there is a good source to transmit this information to this same audience. This n Only then can the information be said to have been properly and properly disseminated. Various sources of information dissemination abound, namely; mass media - print and non-print media. Newspapers, magazines, radio, Today, the advent of Information and Communication Technology (ICT) (the Internet and the World Wide Web) has provided another powerful means of disseminating information. He uses various platforms such as blogs, social networks – Facebook, WhatsApp, Imo, Linkden, etc. as well as libraries, extension workers (for certain technical areas), posters and leaflets, community channels (town criers), etc. on. Annor-Frempong and Nana Acquah (2012) in their study reported that a majority (85.3%) of their respondents used the media (television and radio) to obtain information on climate change, and that they are considered as the most effective source. Akpan et al. (2012) conducted a study on the influence of Nigerian media on public understanding of climate change and found that interpersonal communication, internet and television still had an advantage over newspapers as sources of climate change information climate for respondents. . Interpersonal communication ranked as the top source of climate change information for respondents. Only 19 (4.75%) out of 400 respondents indicated that they had ever read an article in a newspaper on climate change. Respondents who had read newspapers did not recall reading articles about climate change. Idoma and Mamman (2016) in their study revealed four main channels for communicating climate information in their order of acceptance by respondents. Community channels (extension workers, neighbours/friends) have a very high significant rate, mass media (radio and television) came second while print media (newspapers, pamphlets) ranked third and media electronic (internet, SMS) ranked fourth.

**Use of climate change information**

When information is received, it only becomes relevant when it is used. Climate information is intended to avoid (adapt or mitigate) the effects of climate change. In their study, Idoma and Mamman (2016) found that the decision on when to plant crops came first as very important, the decision on when to harvest fish from ponds ranked second (important), the flood mitigation planning was ranked third (moderately important) while general day-to-day activities were ranked fourth (not important).

**Difficulties in accessing and using climate change information**

Idoma and Mamman (2016) reported limited access to radio, television and internet as well as poor translation of climate change technologies with a very high percentage (94%) as barriers to communicating climate information to Agatu. Other obstacles are the technicality of the message (85%), lack of trust in the source of information (82%) and cultural barriers (80%). Their findings were corroborated by Schubert, (2014) and Speranza, Kiteme, Ambenje, Wiesman & Makali (2010) who reported that communicating climate information to support adaptation action in Africa is hampered by several contextual factors , namely related and technological barriers. Meanwhile, most of the challenges faced by farmers, as emerged from discussions and interviews, include reduction in annual rainfall, excessive heat (high temperature), depression of groundwater, gaps between forecast and actual rainfall, soil erosion, reforestation activities, land tenure and the incidence of pests attacking our

agricultural products are some of the pressing issues requiring climate change information in the state. Also, other agricultural challenges besides climate change are lack of budget allocation to cater to the population of shift farmers, lack of credit facilities and weak market are the major challenges. Sometimes, too, food production is expected to be lower than normal due to shorter growing seasons. The Daily Sun newspaper on Tuesday, August 7, 2020 quoted some farmers lamenting that they "started rice farming early last year but could not harvest due to floods and were unable to didn't have any money, so they couldn't insure their farms".

## CONCLUSION

For the past few years, world leaders have been pondering what or how to deal with the greatest threat of the moment, erratic climate change otherwise known as climate change. This change negatively affects the overall survival of the human race and other living organisms on the surface of the earth, because the life of all living organisms depends on water, humidity, air and soil for survive. Air pollution caused by the emission of gases from factories, vehicles, the domestic use of firewood, etc. significantly affects the ozone layer and the earth's crust, thereby leading to reduced precipitation, humidity and an increase in the concentration of carbon dioxide on the earth, which in turn leads to poor agricultural products. However, the mechanisms put in place by the government at all levels, international organizations and state NGOs to sensitize and encourage farmers to use the information provided have yielded good results, as the levels of awareness, farmers' access to and use of climate change information is high, so the state has no reason not to be at the forefront of this government's economic diversification with agriculture as its goal, thus improving the socio-economic activities of its population who are literally farmers.

## RECOMMENDATIONS

Based on this study, the following recommendations were made:

1. Due to the threat posed by climate change to humanity in the area of food scarcity, there is an urgent need to provide the public with adequate and timely information on climate change, as this will enable people to build their capacities adaptation. or mitigation of the effects of the phenomenon
2. Governments at all levels should increase their budgetary allocation to agriculture and provide accessible credit facilities to farmers to enable them to insure their farms to minimize the burden of losses resulting from the effects of climate change.
3. The government and non-governmental organizations should do more to train more personnel and send them to every nook and cranny of the state to create greater awareness about current events regarding climate change; this will help people to be more proactive in managing the results of this phenomenon.

## REFERENCES


Abdulhamid, A. (2015). Climate, Droughts and Food Security in Kano Region–*Nigeria. Science Africana Journal*, 11(1).8-15.Available online www.technoscienceafricana.com

Abdulkareem, A.Y, Yusuf, M.O, Oyeniran, S. (2012). A Survey of the Perception of Teachers and Students on Climate Change: Implication for Curriculum Development. In Climate Change and Sustainable Development in Africa, Edited by Oloyede I. O. *Proceedings of the Second University of Cape Coast and University of Ilorin Joint International Conference. Ilorin*: The Library and Publications Committee, University of Ilorin. Pp.13-30.

Adeleke, M.L, Omoboyeje, V.O. (2016). Effects of Climate Change on Aquaculture Production and Management in Akure Metropolis, Ondo State, Nigeria. *Nigerian Journal of Fisheries and Aquaculture* 4 (1), 50-58. Available online@http://www.unimaid.edu.ng

Akpan, C.S, Anorue, L.I, Ukonu, M.O. (2012). An Analysis of the Influence of the Nigerian Mass Media on Public Understanding of Climate Change. J*ournal of Alternative Perspectives in the Social Sciences*, 4(4), 688- 710.

Annor-Frempong F, Nana-Acquah H.D. (2012). Level of Awareness, Impact and Coping Strategies to Deal with Effect of Climate Change on Agricultural Development: Perception of Agricultural Extension Agents in Ghana. In Climate Change and Sustainable Development in Africa, Edited by Oloyede, I. O. Proceedings of the Second University of Cape Coast and the University of Ilorin Joint International Conference. Ilorin: The Library and Publications Committee, University of Ilorin. Pp. 413 – 429.

Banmeke, T.O.A, Fakoya E.O and Ayanda, I.F. (2012). Agricultural Researchers' Awareness of the Causes and Effects of Climate Change in Edo State, Nigeria. Published by Canadian Center of Science and Education 233 in Journal of Agricultural Science, 4 (1) available online @ www.ccsenet.orgjournal/index.php/jas/article/view/10209/9399. 233- 238

Beyioku, J. (2016). Climate change in Nigeria: A brief review of causes, effects and solution. Available online @ htts://fmic.ng/climate-changenigeria-brief-review-causes effects-solutions.

Dadzie,S.K.N, Okorley,E.L, Bosompem, M. and Okwei, T. (2012). Effects of Climate Change

Outcomes on Food Production and Implication for Food Security: A Ghanaian Case Study. In Climate Change and Sustainable Development in Africa, Edited by Oloyede, I. O. Proceedings of the Second University of Cape Coast and the University of Ilorin Joint International Conference. Ilorin: The Library and Publications Committee, University of Ilorin. Pp. 375 – 389.

Daily Sun (2018). Government Should Assist Farmers to Source Funds Early. 7th August, Vol. 25, No. 3987, p.24.

Ibrahim, M. (2017). Climate Change? What Climate Change? Nigerian Farmers not being reached on Awareness. Part of a special project that explores the impact of climate change on the food security and livelihoods of small-scale farmers in Kenya, Nigeria, Senegal and Zimbabwe GODAI/NIGERIA, 5 July. Available online @ http://www. CLIMATE%20%20CHANGE%20INFO/IR IN%20_%20Climate%20ch ange%20%20What%20climate%20change %20awareness.html

Idoma, K. and Mamman, M. (2016). Access and Utilization of Climate Change Information and Support Services among Vulnerable Communities in Agatu L.G.A., Benue State, Nigeria. Federal University Gusau, *International Journal of Science for Global Sustainability*, 2 (2), 46-63

Odjugo, P.A.O. (2011). Climate Change and Global Warming: The Nigerian Perspective. *Journal of Sustainable Development and Environmental Protection*, 1 (1 6), available online @www.ierdafrica.org.ng/resources/climate change and global warm.

Onu, F.M.,and Ikehi, M.E. (2017). Mitigation and Adaptation Strategies to the Effects of Climate Change on the Environment and Agriculture in Nigeria. Available online @ www.unn.edu.ng/publications/files/12305 mitigation and adaptation.

Rabiu, A.M. (2014). Librarian's Perception of Evidence Based Library and Information Practice (EBLIP) and Information Society as Vital Tool for National Development. *Journal of Applied Information Science and Technology*, 9 (1):63-72.

Sagoe, R. (2006). Climate change and root crop production in Ghana. A report prepared for environmental protection agency (EPA), ACCRA-GHANA.

Stevens, L, Arthur W. and Yonk R.M. (2017). Analyzing the Role of Poor and D1eveloping Nations in Global Climate Agreements. *British Journal of Environment &Climate Change*, 7(3): 135-147.

Wakili, I. (2018). Buhari seeks Global Assistance on Climate Change. Daily Trust Newspaper, Wednesday May 9, p.7.