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## PROBLEMS ASSOCIATED WITH EFFECTIVE PROVISION OF INFORMATION ON AGRICULTURAL INSURANCE TO RURAL FARMERS FOR CLIMATE CHANGE ADAPTATION.

Abaobi David Agbo Dr

*Department of Library and Information Science, University of Nigeria - Nsukka, david.agbo@unn.edu.gn*

Victor N. Nwachukwu Prof

*Department of Library and Information Science, University of Nigeria - Nsukka,*

*victor.nwachukwu@unn.edu.ng*

Ishmael, Ummnakwe Agbo Mr

*Department of Insurance, Enugu State University of Science and Technology, Enugu State,*

*Ishmael1982@gmail.com*

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# **PROBLEMS ASSOCIATED WITH EFFECTIVE PROVISION OF INFORMATION ON AGRICULTURAL INSURANCE TO RURAL FARMERS FOR CLIMATE CHANGE ADAPTATION.**

## **Introduction**

Rural farmers constitute the bulk of the poor in Nigeria and Nsukka in particular who face the prospects of tragic crop failures, reduced agricultural productivity, increased poverty and hunger, malnutrition and diseases. However, the contribution of agricultural production in Nsukka zone to sustainable national economic development has been put under sword by the menace of climate change which is the major component of our evolving environment (Saul, 2015). This has been worsened due to a perceived lack of proper environmental information to rural farmers in Nsukka zone. Climate change is one of the most serious environmental threats facing mankind worldwide. It affects agriculture in Nsukka Zone in several ways, including its direct impact on food production and security. Moreover, information on environmental climate risk implications communicated in good time, unambiguous and in relevant terms through credible sources is very vital for mobilizing Nsukka rural farmers to take pragmatic steps that will enhance their knowledge capacity in mitigation and willingness to adapt to climate change. Existing and emergent technologies, ranging from renewable energy and nuclear power to carbon capture, storage and trade, would be needed to make the reductions in emissions essential if the world especially Nigeria and Nsukka zone in particular is to avoid the danger associated with climate change (Musa, 2013). Adaptation measures to climate change on the other hand have to do with living with climate change, for example agroforestry, conservation agriculture, inter-cropping, biodiversity and collection of rainwater for agricultural use referred to as rainwater harvesting which culminate in some efforts at improving local or indigenous practices of water harvesting and soil water conservation.

More so, Enete (2010) submits that the evolution of farming systems based upon increasing climate change, specialization or integrated intensification has required extra knowledge on the part of rural farmers. The need for better information and enhanced human capital has also increased, as production systems have become more integrated with regional, national and international market systems. Agricultural information is a major tool for the development of small-scale farmers and it contributes to the livelihood of people in both rural and urban areas (Abdullah, 2015). Rural farmers face widening information gaps and therefore, it becomes difficult

for them to compete in the global market. Many farmers in developed countries now have a much better understanding of the nature of the demand that they are responding to in terms of its implications for varieties, timing, and packaging and permitted practices that can help climate change adaptation (Inter governmental Panel on Climate Change (IPCC), (2014). We should not ignore the information provision on climate change adaptation and agricultural insurance when modeling or predicting the effects of climate change. It is however observed that irrespective of efforts to encourage rural farmers adopt farming practices that will enhance climate change adaptation, most of the rural farmers are still reluctant at adopting these measures. This is attributed to the fear of loss and lack of assurance of how to regain their loss if the unexpected happen. This again suggest that rural farmers lack adequate information on agricultural insurance. Therefore, this study is concerned with not only on climate change adaptation to changing temperatures in the long run, but also on impact of agricultural insurance information on rural farmers for improved adaptation to the increasing incidence and intensity of weather extremes.

### **Literature Review**

**Adaptation:** Rural farmers in rural communities which is dependent on rain-fed agriculture together with low level of socio-economic advancement is vulnerable to climate change. Thus, a better understanding of farmers' concerns, their perception and provision of information on climate change is crucial to design effective insurance policies for supporting successful climate change adaptation (Kumar and Sidana, 2018). Adaptation is the adjustment in natural or human systems in response to actual or expected climate hazards or their effects (Ige et al., 2021). Adaptation is the process of changing one's behavior to suit new situation. Adaptation is usually a long-term livelihood activity and is a continuous process where results are sustained; it uses resources efficiently and sustainably and involves planning and combining of new and old strategies and knowledge, and is focused on finding alternatives (IPCC, 2014). Adaptation includes all activities that help people and ecosystems reduce their vulnerability to the impact of climate change and that minimize the costs of natural disasters. Because of the speed at which change is happening due to increases global temperature, it is urgent that the vulnerability of developing countries is reduced, while their capacity to adapt is increased and while national adaptation plans are implemented (Agbo, 2019).

Again, it is imperative to develop the people's adaptive capacity through the provision of the right type of agricultural insurance information i.e., Agricultural index insurance, financial

offer Insurance, weather index insurance, Insurance premium subsidies etc. (Kramer, 2019). Knowledge of agricultural insurance is an important measure that can buffer rural farmers against climate shocks and changes. Measures that incorporate information to reduce climate risk or protect against the negative impacts of climate change such as Agricultural index insurance which has development benefits under future climate change. Therefore, there is need to strengthen the extension system that can put forward an insurance plan for adaptive strategies to mitigate the climate change effects among rural farmers (International Food Policy Research Institute (IFPRI), 2016). Agricultural index insurance is designed to manage climate change risk and enhance adaptation. Agricultural index insurance bases payouts on an easy-to-measure index of factors, such as rainfall or average yields, that predict individual losses. This puts rural farmers in a better position to prepare and react to climate change effectively. The result is low-cost protection for farmers who face a predictable, recurring risk like drought or flood (Njiforti, 2022).

Furthermore, adaptation options for ecosystems such as control of deforestation, improved range land management, expansion of protection areas, and sustainable management of forests. Rural farmers can easily adopt any adaptation measure with insurance package such as Financial Inclusion Offers. It is believed that a well-designed financial products and services such as insurance, savings, credit, and mobile money can play a vital role in increasing rural farmers' resilience to climate change. They help rural farmers to prepare for risk, to respond to emergencies when they occur, and to access funds to invest in risk-reducing technologies that are recommended for climate change mitigation (Swartz et al., 2010). For instance, Weather index insurance is a promising adaptation instrument in this regard. It requires that losses and payouts to rural farmers are determined using measured variables such as rainfall, drought, flooding etc. Participating farmers can purchase insurance at relatively low cost that can help them recover from flood and other disasters and lower various forms of risk (Rhodes, et al., 2019).

Again, Insurance premium subsidies can also be used as an instrument to promote risk reduction to enhance climate change adaptation. It was observed that conditioning premium subsidies on farmers not burning their fields after the rice harvest or using bush burning as a method of land clearance was effective in reducing such practice. Improved residue management was in this case seen as a more sustainable strategy to reduce exposure to weather risks and improved adaptation (McNeeley et al., 2014).

Similarly, adaptation to climate threats is a local process that is rooted in socialization and learning. Therefore, it is not possible to implement an adaptation policy without considering the social and cultural context in which local knowledge is developed. According to International Federation of Library Associations and Institutions (IFLA), (2008), the significance of traditional or Indigenous knowledge and agricultural insurance in the management of climate variability requires identifying different ways of understanding the concept of indigenous knowledge and agricultural insurance. The first approach considers this knowledge as an inheritance from the past. The second approach describes it as a representation of an alternative way of thinking, typical of African cultures, and the third definition considers indigenous knowledge as a means to express what people know and to create new knowledge from the intersection of their capacities and development challenges such as climate change (Allyn, 2022).

So, effective adaptation policies should promote instruments that help rural farmers cope and recover from weather extremes *ex post*, and also help them in reducing their exposure to risk and increasing their investments *ex ante*, so that the policies deliver value even during good years without a shock (Ekere, 2021). Finally, adaptive capacity of rural farmers can be boosted to adjust to the climate change including variability and extremes to moderate or reduce potential damage, take advantage of opportunities or to cope with the consequences of climate change (Bisong, 2014). Therefore, the adaptive capacity of any society or system in the environment invariably describes its knowledge of the events, ability to modify or reduce its characteristics or behaviour in order to cope better with the changes in environmental conditions.

### **Problems facing Information Provision of Agricultural Insurance to Rural Farmers**

In support of the above, Bernard et al (2013) adduced that information provision is an important factor in improving the plight of agricultural production in the wake of environmental dynamism. But this positive contribution of agricultural information has come under threat of various challenges facing climate experts and information agents in providing information services in rural areas. Studies describe the problems facing by information provision in rural areas to include: poor infrastructure, impassable roads, limited access to telecommunication networks and poor electrification. These barriers to effective information service provision limit individuals from contacting appropriate information sources in search for needed climate change information. The flow of information is limited by a number of factors which include the low literacy level, the limited numbers of radio and television sets, the lack of financial resources, human capacity, and

the lack of legal frameworks at national and international levels to support the information service provision to rural areas.

**Illiteracy:** Illiteracy is one of the commonest characteristics of rural community and rural farmers. To understand the word rural farmers in relation to illiteracy, it becomes important to understand the “word rural”. The word rural refers to a place where majority of the dwellers and environment are tailored towards agricultural orientation, communication is mainly based on local dialect, houses and farm houses, barns, sheds, informal system of education is typified against formal education (Egbe, 2014). Rural is a non- developed area where all the activities are based on the cultural norms and practices. Rural is also defined as a low population density containing scattered dwellings, hamlets, villages and small communities. It is characterized by bushy and forest environment, use of foot path, poor health care condition, poor information access and facilities, poor peasant farmers, illiterates and politically uninformed (Moseley, 2003). The general lack of awareness of climate change adaptation and agricultural insurance among rural farmers can be attributed to their high level of illiteracy. This contributes to the low level of adoption of agricultural production technology (Mgbenka and Mbah, 2016).

**Lack of education,** information and training is frequently a key limiting factor in provision of climate change adaptation and agricultural insurance information to rural farmers. This is more evident on the fact that most of the extension agents are not natives of rural targets and as such requires interpreters to be able communicate effectively (Deressa et al., 2010). The poor state of education in most developing countries has also had its toll on the poor people’s access to climate change adaptation awareness and information on agricultural insurance. However, it is believed that educated farmers are more likely to understand and easily apply new agricultural technologies for adaptation and also develop the capacity to enroll in agricultural insurance, as compared to illiterate farmers (Fagariba et al., 2018).

**Poor rural infrastructure:** Rural infrastructure plays a significant role in the provision of information, insurance awareness, development and sustainability of rural environments to help rural farmers adapt effectively to climate change adaptation. Knowing fully that the rural areas are the hub of food production and the rural farmers are in the center for the production of raw material needed in the country and also the most vulnerable to climate change (Food Agricultural Organization (FAO), 2018). over and over again, there has been a common report which seems to point to similar challenges that hinder the effective utilization of infrastructures like Information

Communication Network (ICT) example, mobile phone network as an information tool for rural farmers to enable them cope with climate change threats (Trendov, 2019). It is evident that the climate is changing and at the same time exerting effect on the rural communities in Nsukka and the rural farmers' agricultural activities. The severe adverse effect of climate change in Nsukka zone has been largely attributed to over dependence on rain fed agriculture and poor rural agricultural infrastructure that can aid adequate climate change information necessary for human capacity and adaptation. It was adduced that poor quality of information services, poor information center management, low bandwidth, outdated and irrelevant materials and lack of ICT facilities/audio visual resources have limited the accessibility of climate change information to rural farmers in the rural communities (GSMA, 2018). Globally, mobile cellular subscriptions have been growing over recent years and have constituted a veritable tool in provision of information to rural farmers in rural areas. Between 2013 and 2018 there were 1 billion new mobile subscribers of which 67% of world population is now subscribed to mobile services (GSM) (Olorunfemi, 2020). Irrespective of the giant stride in the growth and coverage of the internet access to information via mobile network, one challenge that has remained constant in the experience of all mobile network subscriber mainly in the rural areas is that network coverage remains limited.

In another development, **provision of electronic information** is limited by both institutional and individual problems. This include lack or unreliable physical infrastructure for electronic information sharing, lack of appropriate technologies for providing electronic information, management and maintenance. It has been observed that most institutions seem to have an adequate number of computers to facilitate climate agricultural information but the high cost of maintenance services in addition to its non-availability in remote and rural areas greatly affect the effective utilization of ICTs, especially with regard to those institutions that depend on information supplied from remote field stations (Musa, 2013). Furthermore, almost all farmers agree that the technologies required for information provision to rural farmers are scarce and when they are provided, are costly to adopt and even if the technologies were inexpensive, rural farmers have limited financial resources to acquire them (Ahmed, 2003). Other challenges of dissemination and utilization of information are lack of equipped public libraries and staff, lack of rural information and resource centers, and inadequate extension workers.

**Lack of access to climate change information:** Information is an essential ingredient in effective provision of information on agricultural insurance to rural farmers for climate change

adaptation but Nigerian farmers seldom feel the impact of agricultural innovations either because they have no access to such vital information or because it is poorly communicated. Often, agricultural information provision is not integrated with other development programmes to address the numerous related problems that face farmers such as climate change adaptation (Mgbenka and Mba, 2016). This and more has led to some limiting factors and apparent constraints to agricultural information provision. Again, the ineffectiveness of rural farmers can also be attributed to the treatment of information delivery as a matter of course by governments of most developing countries. The non-provision of information on agricultural insurance to rural farmers for climate change adaptation is a factor that has greatly limited agricultural development in developing countries. It has been observed that the agricultural information provided is exclusively focused on policy makers, researchers, and those who manage policy decisions with less attention paid to the information needs of the targeted beneficiaries of the policy decisions (Enete, 2014).

It was further revealed that another striking constraints militating against provision of information on agricultural insurance to rural farmers for climate change adaptation using strategy such as weather forecasting included inadequate access to climate information (Fagariba et al., 2018). This suggests that inadequacy of climatic information on agricultural insurance available to rural farmers in terms of accuracy and consistency of metrological information greatly constrained them from choosing weather forecasting as an adaptation strategy to enhance their agricultural output. More so, the high cost of accessing weather prediction information as well as the incompatibility of such weather information inhibits the farmers resolve in adopting weather prediction as a reliable means of coping with the climate change. Therefore, proper orientation and provision of climate change information to these rural farmers will trigger a shift in their disposition and attitude towards climate change and thus prepare them to respond positively to climate change and its attendant consequences. Finally, Ige (2021) is of the opinion that poor agricultural extension services the major constraints militating against provision of information on agricultural insurance to rural farmers for climate change adaptation. For instance, the choice of planting cover crops as a coping strategy to combat climate change or adoption of other adaptation strategies will largely depend on the availability and access to climate change information and agricultural insurance to rural farmers. This implied that inadequate provision of information as a result of poor extension services limits the level of awareness on agricultural insurance to rural farmers for climate change adaptation.



**Lack of adequate extension agents:** Agriculture extension agents play an essential role in provision of information on agricultural insurance to rural farmers for climate change adaptation. Among these extension agents include public librarians, agricultural extension agents, non-governmental organizations (NGOs), trained local authorities, adult education agents, agricultural insurance agents etc. They help in training and disseminating new and improve agricultural practices to farmers (Fagariba et al., 2018). On the other hand, poor access to agriculture extension officers and insurance negatively affects farmers' prompt response to climate adaptation when confronted with challenges demanding immediate response. The farmer to agriculture extension officer ratio in rural communities is often poor making it difficult for extension officers to visit and provide information on agricultural insurance to rural farmers for climate change adaptation farmers regularly (Annune, 2014). Notwithstanding the provision of agricultural information, the agricultural sector has faced so many challenges in carrying out its activities effectively due to shortage of trained extension officers. Moreover, the ratio of extension staff to rural farmers is very poor thereby making the information provision on agricultural insurance for climate change adaptation role difficult. Another major constraint to agricultural information provision is the inadequacy of existing extension programmes and lack of professional proficiency of some extension agents. Some of the programmes designed to communicate climate change adaptation to rural farmers are conceived without well thought out plans and are prepared in a hurry without the active participation of rural farmers whose attitudes to climate change adaptation is to be affected (Mgbenka et al., 2013). Most of Such information programmes are void of insurance plan for rural farmers and can neither sustain the farmers' interest nor effect the desired attitudinal change to climate change adaptation (Rhodes et al., 2019).

Again, many people in extension are not equipped with necessary skills and professional knowledge for information provision on agricultural insurance for climate change adaptation to rural farmers. Most extension agents are not experts in information communication to rural dwellers rather their training is more on technical proficiency rather than on persuasive skills that can influence climate change adaptation to rural farmers (McNeeley et al., 2014). As such, extension agent trained in this way is unlikely to make an impact on a conservative rural farmer who is not ready to put his farm inputs to risk by trying to adapt to a new farming system without any insurance plan to rely on in case of any damage or loss. Other constraints include status differences between extension agents and their clients, agents' inadequate knowledge of how

communication works, lack of interagency cooperation both in programme planning and implementation, and the extension's general lack of interest in traditional approach to rural communities. In addition, other problems inhibiting provision of climate change adaptation and insurance information to rural farmers include lack of proper linkage between public libraries and extension workers, lack of motivation to public librarians/extension workers, high cost of information materials, Lack of rural libraries/information centers, language barriers etc. (Annune, 2014).

**Lack of Rural Libraries and Research Institutes:** In another development, all the agricultural research institutes in Nigeria are owned and managed by the federal government. The State and Local governments which are closer to the rural farmers have no research institutes. This according to Enete, and Amusa (2010), means that all decisions on the funding, direction and implementation of research activities are taken from National headquarters. The consequence of this is not only over-centralization of agricultural administration, but also that those involved are hardly in touch with the reality on ground. As a result, a much greater range of new agricultural technologies are available for production systems and crops of interest to developed cities than for rural farmers' production systems in developing countries. This has the capacity to pose serious challenge for agricultural adaptation to climate change.

### **Purpose of the study**

The study aims to find out the effect of information and adult literacy to rural farmers on green agriculture for food security and sustainable development.

### **Methods**

This study adopted descriptive research design. Descriptive research design according to Nworgu (2015) is used in studies that aim at collecting data and describing situations, characteristics, features of a given population in a systematic way. Agbo (2019) and Ekere (2021) etc. have adopted this design in similar studies. The study was carried out in South Eastern Nigeria. South Eastern Nigeria is made up of five States i.e., Abia, Anambra, Ebonyi, Enugu and Imo States. South East, Nigeria shares borders with Akwa Ibom and Rivers State to the South, Cross Rivers to the East, Benue to the North East, Kogi to the North West and Delta State to the West.

The population of the study comprises of all the registered rural farmers in South East Nigeria. South Eastern Nigeria is made up of five States i.e., Abia, Anambra, Ebonyi, Enugu and Imo States. Similarly, the sample size of five hundred and ten (510) registered rural farmers was

selected for the study. The sample size was selected through Taro Yamane (1969) statistical formula for finite population. Two States were chosen purposefully because the states are the hub of Agricultural production in South Eastern Nigeria. For instance, Enugu and Ebonyi State is the largest producer of food in South Eastern Nigeria. Three hundred and twenty-seven (327) rural farmers were chosen from Enugu while one hundred and eighty-three (183) rural farmers were chosen from Ebonyi State.

Questionnaire and Focus Group Discussion (FGD) was used for collection of data for the study. The researchers used four-point scales of 4-1 in a descending order of magnitude for instance: The Cluster Used Strongly Agreed (SA) = 4, Agreed (A) = 3, Disagreed (D) = 2, and Strongly Disagreed (SD) = 1. However, to ensure the face validity of the instrument for data collection, the instrument was subjected to face validation by three (3) experts from the Faculty of Education, two (1) from Department of Library and Library Information Science, University of Nigeria, Nsukka, one (1) from Department of Insurance and Risk Management, faculty of Management Sciences, Enugu State University of Science and Technology, Enugu State, Nigeria and (1) from Department of Education Foundation, University of Nigeria, Nsukka. A copy of the seventy (70) item questionnaire and seven items for the focus group discussion were submitted for validation. They critically examined the relevance, clarity and appropriateness of the items for the study. They made useful corrections and criticisms which were integrated into the final draft of the instruments.

Again, to ascertain the internal consistency of the instrument, the instrument was pre-tested on twenty (20) rural farmers selected from Okpo in Olamaboro local government Area of Kogi state which is outside the population of the study. The reason for the trial-test arrangement is to find out the internal consistency of the instrument for the study. The reliability of the instrument was determined using the Cronbach alpha method. The instrument showed an overall correlation of 0.94.

**Method of Data Collection:** The copies of the questionnaire were administered personally by the researchers to literate rural farmers mostly teachers and civil servants within the rural communities. The researcher also used tape recorder to record the discussion during the Focus Group Discussion (FGD) with non-literate farmers. The researchers also used trained research assistants in the sampled local government area i.e., Igbo-Etiti, Nsukka, Uzo-Uwani, Isi-Uzo, Udenu, Nkanu East, Nkanu West, Orji River, Abakaliki, Ishielu and Ikwo to ensure maximum

return of the questionnaire. The research assistants were drawn from each of the selected local government and were trained personally by the researcher on how to administer the questionnaire for maximum success. After completion, the researcher and his assistants collected the questionnaire for proper analysis and the data collected for the study were analyzed using descriptive statistics. The researchers used mean to analyze the data in order to answer the research questions.

## Results

**Research Question one: 1.** What are the problems associated with climate change adaptation information provision to the rural farmers in south east Nigeria?

2. What are the likely measures that can help solve the identified problems?

**Table 1:** Mean and standard deviation of the ratings of the respondents on the problems associated with climate change adaptation information provision to the rural farmers in East Nigeria

Item Statement	Mean	Std. Deviation	Decision
1. Poor access road is a major problem hampering the effective dissemination of agricultural insurance information to rural areas	3.59	.69	SA
2. Language barriers inhibits information dissemination to rural communities	3.29	.81	A
3. Weather index insurance can motivate rural farmers adjust to climate change	3.50	.71	SA
4. Lack of coordination among climate change information agents affect adequate dissemination of agricultural insurance information to rural farmers	3.38	.76	A
5. Financial offer insurance will help boost the rural farmers resolve to adopt new measures that will help them adapt to climate change	3.24	.88	A
6. Poor attitude and adherence to climate change warnings by rural farmers affects the extent of adaptation to climate change	3.19	.76	A
7. Lack of Agricultural index insurance affect rural farmers ability to adapt to climate change and manage climate risk effectively	3.29	.81	A
8. Poor funding is one of the major difficulties facing climate change information agents in dissemination of agricultural insurance information	3.25	.89	A
9. Corruption and mismanagement of fund also affects proper information dissemination to rural farmers	3.28	.82	A
10. Lack of skills for information dissemination by information agents affects the quality of agricultural insurance information disseminated to rural farmers	3.27	.97	A
Cluster Mean	3.27	.48	A

Table 1 reveals that the mean ratings of the respondents to items 1 to 10 which boarder on the problems associated with agricultural insurance information provision to the rural farmers in south east Nigeria, are more than 2.50 criterion mean for decision rule. This implies that the respondents agreed to the statements of the items as the problems associated with satisfaction of the agricultural insurance information to the rural farmers in south east Nigeria. The standard deviations of 0.88,

0.89 and 0.97 to items 5, 8 and 10 imply that the variations in the ratings of the respondents to items 5, 8 and 10 are more than those of the other items.

**Research Question two:** What are the measures that can enhance the provision of agricultural insurance information to the rural farmers for improved climate change adaptation?

**Table 2:** Mean and standard deviation of the ratings of the respondents on the measures that can enhance the provision of agricultural insurance information to the rural farmers for improved climate change adaptation.

Item Statement	Mean	Std. Deviation	Decision
1. Provision of access roads in rural communities can help information agents access rural farmers with agricultural insurance information	3.52	.65	SA
2. Timely dissemination of agricultural insurance information to rural farmers will booster their ability to adapt to climate change dynamism	3.30	.76	A
3. Weather index insurance can motivate rural farmers adjust to climate change	3.29	.68	A
4. Use of interpreters and local dialects will help to improve language communication of agricultural insurance information to rural farmers	3.33	.76	A
5. Financial offer insurance will help boost the rural farmers resolve to adopt new measures that will help them adapt to climate change	3.17	.89	A
6. Government grants to NGOs, Agricultural cooperatives and budgetary allocation to climate extension services will enhance dissemination of agricultural insurance information to rural framers	3.32	.79	A
7. Agricultural index insurance will help rural farmers adapt to climate change and manage climate risk effectively.	3.11	.86	A
8. Reorientation and education will help reduce some cultural and religious bias that inhibits effective agricultural insurance information dissemination	3.04	.94	A
9. Honesty, discipline in handling fund provided for agricultural insurance information will facilitate the information dissemination	3.27	.84	A
10. Clarity of agricultural insurance information will enhance its usefulness to rural farmers in improving climate change adaptation	3.34	.84	A
Cluster Mean	3.08	.47	A

Table 2 shows the mean and standard deviation of the ratings of the respondents to items 1 to 10 which boarder on the measures that can enhance the provision of information on agricultural insurance to rural farmers for climate change adaptation. The analysis shows that the mean ratings to the items are more than 2.50 criterion mean which means that the respondents agreed to the statements of items 1 to 10 as the measures that can enhance the provision of information on agricultural insurance to rural farmers for climate change adaptation. Standard deviations of 0.89, 0.86, 0.94, 0.84 and 0.84 for items 5, 7, 8, 9 and 10 indicate that the variations in the ratings of the respondents to those items are more than those for the other items.

## Conclusion

Provision of information on agricultural insurance to rural farmers is very vital for climate change adaptation. It has been observed that farmers require information on agricultural insurance to make informed decision and enhance climate change adaptation. Notwithstanding, several challenges are found to constitute threats to provision of information on agricultural insurance to rural farmers for climate change adaptation. These challenges include fund, lack of infrastructures, language barriers, poor rural road network, lack of trained extension agents etc. It is therefore observed that if these challenges are not addressed, the potentials of information provision on agricultural insurance to rural farmers for climate change adaptation cannot be effectively utilized hence making it difficult for farmers to cope with climate change threats.

### **Recommendation**

Considering the importance of the points raised in the above discussions, it becomes necessary to suggest that the following recommendations be considered to ensure an effective provision of agricultural insurance information to rural farmers for climate change adaptation. They include recruitment of more public librarians and extension workers to provide information to rural farmers and establishment of rural libraries in rural communities. Again, local government authorities should liaise with public librarians in establishment of local community information service centers and rural libraries in rural communities, recruitment of more public librarians and extension workers and also adequately motivate them to provide current and relevant agricultural insurance information to rural farmers.

It is also recommended that establishment of linkage between public libraries and extension workers, identifying the most effective information sources for use, establishment of agricultural advisory board comprising of librarians, farmers, insurance agents and other extension workers is vital.

Again, up-to-date information should be provided using appropriate languages and formats and delivered through proper communication channels. These channels include Information Communication Technology (ICT) i.e., radio, television and mobile phone.

Finally, there should be more government and public sector involvement through subsidies and other forms of government support to rural farmers, extension agents etc. There should also be a defined National Agricultural Insurance Scheme that reflects both national awareness of rural farmers' vulnerability to climate change and an ambition to empower farmers to better withstand climate-related shocks.

## Reference

- Agbo, A. D. (2019). Climate change information needs of rural farmers in Enugu State for improved agricultural output. unpublished Ph.D thesis. department of library and information science university of Nigeria, Nsukka, Nigeria
- Ahmed, A. (2003). Technology Management in the Sudan: Strategic and Policy Challenges. *Journal of Management Decision*, 41(3).
- Allyn, D. L. (2022). Agricultural Insurance and Climate Change Adaptation in Rwanda: Evidence from the Eastern Province, 2021 report. Rwanda.
- Annune1, A.E., Ezeani, C.N., Okafor, V.N. (2014). Information sources Disseminate and utilization patterns of the Artisanal Fishery sector in Benue State, Nigeria: *Advances in Research Science domain International* 2 (12).
- Bernard, R., Mtega, W.P. (2013). The state of rural information and communication services in Ianzania: A mets-Analysis. *International journal of information and communication Tech. research* 3(2). Retrieved from <http://www.esjournals.org> on 25/10/2016.
- Bisong, F.E., Cyprian, A. E, Yaro, M.A. (2014) Rural people Perception to Climate variability/change in cross River State-Nigeria. *Journal of Sustainable Development* vol. 7(2). Canadian Center of Science and Education.
- Deressa, T.T. and Hassan, T. (2010). Economic Impact of Climate Change on Crop Production in Ethiopia: Evidence from Cross-section Measures. *Journal of African Economies*, Volume 18 (4)
- Egbe, E. J. (2014). Rural and community development in Nigeria: an assessment. *Arabian journal of Business and management Review (Nigeria Chapter)* 2 (2); 17-30.
- Ekere, R.O. (2021). Adult Education Strategies for Conflict Resolution and peaceful Coexistence between Fulani Herdsmen and Rural Farmers in Enugu State. Unpublished thesis in Department of Adult Education and Extral-Mural Studies, University of Nigeria, Nsukka.
- Enete A. Anselm and Amusa A. Taofeeg (2010). Challenges of Agricultural Adaptation to Climate Change in Nigeria: A synthesis from the literature the *Journal of field actions*. 4
- Enete, I.C. (2014). Impacts of Climate change on Agricultural production in Enugu State, Nigeria: *Journal of Earth Science & Climate change*.

- Fagbariga, C. I., Song, S. and Baoro, S. K. G. S (2018). Climate Change Adaptation Strategies and Constraints in Northern Ghana: Evidence of Farmers in Sissala West District. School of Environment and Natural Resource Engineering, Wuhan University of Technology, China
- Food and Agricultural Organization (FAO), (2018). *The State of Food Security and Nutrition in the World: Building Resilience for Peace and Food Security*. Rome: FAO. Available at: <http://www.fao.org/news/story/>
- GSMA. (2018). *Enabling Rural Coverage: Regulatory and policy recommendations to foster mobile broadband coverage in developing countries*. London: GSMA Intelligence.
- Ige, G.O., Akinagbe, O.M., Odefadehan, O.O., Ogunbusuyi, O.P. (2021). Constraints to Farmers' Choice of Climate Change Adaptation Strategies in Ondo State of Nigeria. In: Oguge, N., Ayal, D., Adeleke, L., da Silva, I. (eds) *African Handbook of Climate Change Adaptation*. Springer, Cham. <https://doi.org/>
- International Federation of Library Associations and Institutions (IFLA) (2008). IFLA statement on indigenous traditional knowledge. Available: <http://www.ifla.org/publications/ifla-statement-on-indigenous-traditional-knowledge>
- Intergovernmental Panel Climate Change (2014) the fifth published assessment report (AR5) in 2014. Available at [ipcc.ch](http://ipcc.ch). Retrieved on 12/10/2016.
- International Food Policy Research Institute (IFPRI), (2016). Extension and Rural Development Studies. European Centre for Research Training and Development. *International Journal of Agricultural* 3 (2). UK. Available at [www.eajournals.org](http://www.eajournals.org)
- Kramer. B. (2019). Can Fourth in a series of blog posts examining the role of risk in agriculture under climate change, in connection with the [UN Climate Change Conference \(COP25\)](#) in Madrid Dec. 2-13. weather index insurance help farmers adapt to climate change?
- Kumar S, Sidana BK (2018) Farmers' perceptions and adaptation strategies to climate change in Punjab agriculture. *Indian J Agric Sci*.
- McNeeley, S. M., et al. 2014. "The cultural theory of risk for climate change adaptation." *Weather, Climate, and Society*
- Mgbenka , R. N. and Agwu, A. E. and E. N. Ajani. 2013. Communication platforms existing among research, extension and farmers in Eastern Nigeria. *Journal of Agricultural & Food Information*, vol.14, pp.242-258.
- Mgbenka, R. N. and Mbah, E. N. (2016). A review of smallholder farming in Nigeria: Need for transformation. *International Journal of Agricultural Extension and Rural Development*



*Studies*. European Centre for Research Training and Development UK. 3 (2). Available at [www.eajournals.org](http://www.eajournals.org)

Moseley, M. J. (2003). *Rural development: principles and practice*. London: sage pub. P. 126.

Musa, N. I. & El-Siddig, K. (2013). *Challenges of using information and communication technologies to disseminate agricultural information to farmers in Sudan*: Egerton University, Kenya. Agricultural Research Corporation.

Njiforti, P. P. (2022). *Adapting to Climate Risk with Mutual Weather-Index Crop Insurance in Nigeria*. *GIARC Research Center*. Ahmadu Bello University, Zaria, Nigeria.

Nworgu, B G 2015 *Educational research: basic issues and methodology*. Nsukka: University Trust Publishers Nsukka, Nigeria.

Rhodes, E. R., et al. 2019. "Climate change impact chain factors in ECOWAS." *Journal of Agriculture and Environment for International Development*.

Samuel Oluwaseyi Olorunfemi, S. O. (2020). *Rural Road Infrastructural Challenges: An Impediment to Agricultural Development in Idanre Local Government Area of Ondo State, Nigeria*. *Ghana Journal of Geography* 12 (2).

Saul, E. (2015). *Impact of Climate change on Agriculture and food security in Nigeria: Challenges and adaptation*. *Global Advanced Research Journal of Medicinal Plant (GARJMP)* 3 (1). Retrieved from <http://garj.org/garjmp/index.htm> on 20/5/2022.

Swartz, P., et al. 2010. "Takaful: An Islamic insurance instrument." *Journal of Development and Agricultural Economics*.

Trendov, N. M., Varas, S. and Zeng, M. (2019). *Digital technologies in agriculture and rural areas: Briefing paper*. Food and Agriculture Organization of the United Nations. Rome.

