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Extent of Provision of Library information for Climate Change Adaptation among Rural Farmers in Nigeria

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Abstract

South East Nigeria is a Nigerian region primarily populated by rural farmers. According to the literature, there is a scarcity of research on provision of library information for climate change adaptation among farmers in order to improve agricultural products among rural farmers. As a result, this study looked into the sources of library knowledge needed by rural farmers to adapt to climate change. The study used descriptive survey research with a sample of 510 registered rural farmers in South Eastern Nigeria. The data was collected using a well-validated and trial-tested tool. Using the Cronbach alpha approach, the instrument's internal consistency reliability index was 0.97. To address the study questions, the data was analyzed using the mean as a descriptive statistic. The findings of the study showed that there is inadequate climate change adaptation library information provided to rural farmers, even when the library information is provided, they are provided late. Based on that, it was recommended among others that there should be timely dissemination of climate change adaptation library information for improved Agricultural output of rural farmers to booster their ability to adapt to climate change dynamism.

Keywords: Climate change adaption, Provision of library information, Rural farmers, South Eastern Nigeria

Introduction

According to Jha (2012), different sorts of library information are needed to enable decision-making for climate change adaptation library information providing to rural farmers for increased agricultural output. They contain scientific and trustworthy meteorological and hydrological data, as well as agro-ecological and socio-economic data. When climate change

adaptation library information is effectively and relevantly delivered to rural farmers, it is turned into climate change knowledge. Climate knowledge is the proper application of climate data for decreasing economic and environmental risks and increasing climate change resilience. Climate change adaptation is an important aspect of the agricultural library information that rural farmers need in order to deal with the threat of climate change. According to Atsever et al (2008), agricultural library information interacts with and influences agricultural productivity in a variety of ways. The provision of relevant, credible, and helpful climate change adaptation library information and knowledge can arguably boost agricultural production.

According to Shah (2012), the obstacles of providing climate change adaptation library information to rural farmers are increasing, and researchers are recognizing the necessity of early warning and sensitization of climate change adaptation knowledge. Library information supply is a method of transmitting events for better awareness and to add new meaning to events, lives, or experiences that may have significant ramifications for farmers, farm produce, and the application of extension services for enhanced agricultural output. Extension services, research, education programs, and other relevant climate change/Agricultural agencies will all have to create agricultural library information. Adequate provision and access to library information in areas of new agricultural technologies, early warning, drought, pests, diseases, improved seedlings, fertilizer, credit, and other areas is the least expensive input to combat the threat of adverse climatic change for improved rural agricultural productivity.

Against this background, Sani et al. (2014) stated that the best recipe for facilitating climate change adaptation of rural farmers may be to give them good education, technical skills, and infrastructures that will enable them to have easy access to proper library information on climate change adaptation. Provision of agricultural library information on climate change adaptation is

very vital to rural farmers as a measure to help them cope effectively with the excesses of climate change and improve adaptation for improved agricultural output of rural farmers in South Eastern Nigeria.

South Eastern States in Nigeria are largely dominated by rural dwellers that are predominantly farmers and are notable for producing rice, cassava, pepper, maize, cocoyam etc. in consistent and commercial quantity. However, the observed effect of climate change has caused a significant shift in rainfall pattern which has affected farming season in the South Eastern part of the country and the overall agricultural output. An observed response of rural farmers has suggested that they lack the adequate knowledge of climate change adaptation library information. As a result of the knowledge gap, the people have resorted to myths and logic in attempt to provide an explanation to the crisis of climate change rocking their agricultural farm. For instance, in Nsukka zone and other rural communities, farmers have attributed their ordeal to activities of witchcraft, anger of the gods, and conspiracy by commercial water tanker distributors. This scenario suggests that rural farmers in this area are not adequately informed about the reality of climate change. The fact that majority of rural farmers are subsistent farmers, losses of agricultural farmland and loss of crops to climate change makes them more vulnerable to various degrees of effects of climate change i.e. sicknesses, disease, poverty and hunger, malnutrition, high mortality rate etc. These have significant effect on the overall agricultural output of rural farmers. Hence, climate change adaptation library information provision is required by the farmers to ensure a sustained improved agricultural output.

Purpose of the Study

1. Examine the extent of provision of climate change adaptation library information for meeting the climate change adaptation library information to rural farmers

2. Determine the extent the provision of climate change adaptation library information has contributed to meeting the climate change adaptation library information provision for improvement of Agricultural output.

Research Questions

1. What is the extent of provision of climate change adaptation library information to rural farmers?
2. To what extent has the provision of climate change adaptation library information contributed to improvement of Agricultural output?

Materials and methods

Design of the Study

Descriptive Research Design was used in this study. According to Nworgu (2015), descriptive research design is employed in studies that aim to collect data and describe situations, traits, and features of a specific population in a systematic manner. This design has been used in comparable research by Eze et al. (2020), Ezema et al. (2021), Ezeaku et al. (2021), Okeke et al. (2020), Okeke, Okeke and Ugwuanyi (2020), Ugwuanyi et al. (2020), Okenyi et al. (2021).

Area of the Study

This research was conducted in the south-eastern part of Nigeria. Abia, Anambra, Ebonyi, Enugu, and Imo are the five states that make up South Eastern Nigeria. Nigeria is bordered on the south by Akwa Ibom and Rivers States, on the east by Cross Rivers, on the north by Benue, on the north west by Kogi, and on the west by Delta State.

Sample and Sampling Technique

For the study, a total of 510 registered rural farmers were chosen as a sample size. The sample size was determined using Taro Yamane's limited population statistical formula (1969). Two states were specifically picked since they are the agricultural heartland of South Eastern Nigeria. For example, in South Eastern Nigeria, the states of Enugu and Ebonyi produce the most rice, cassava, pepper, and other crops. Three hundred and twenty-seven (327) rural farmers from Enugu were picked, whereas one hundred and eighty-three (183) rural farmers from Ebonyi State were chosen.

Instrument for Data Collection

The data for the study was collected via a questionnaire. The instrument is the Climate Change Library Information Provision, which was designed by researchers to help rural farmers enhance their agricultural productivity. For example, Cluster A employed four-point scales ranging from 4 to 1 in descending order of magnitude: Highly Needed (HN) = 4 points, Seriously Needed (SN) = 3 points, Less Needed (LN) = 2 points, and Not Needed (NN) = 1 point, and so on.

Validation of the Instrument

The instrument was face validated by three (3) experts from the Faculty of Education, two (2) from the Department of Library and Library information Science, and one (1) from the Department of Education Foundation, all from the University of Nigeria, Nsukka, to ensure its face validity for data collection. For validation, a copy of the 70-item questionnaire and seven items for the focus group discussion were supplied. They evaluated the items for the study for relevance, clarity, and appropriateness. They offered helpful suggestions and criticisms, which were incorporated into the instruments' final draft.

Reliability of the Instrument

To ensure the instrument's internal consistency, it was pre-tested on twenty (20) rural farmers from the Odolu Igala Mela local government area of Kogi state, who were not part of the study's population. The purpose of the trial-and-error method is to determine the instrument's internal consistency for the study. The Cronbach alpha method was used to determine the instrument's dependability. Overall, the instrument had a correlation of 0.94.

Method of Data Collection

The researchers personally distributed copies of the questionnaire to literate rural farmers, notably teachers and civil workers in rural villages. To ensure optimum return of the questionnaire, the researchers used trained research assistants in the sampled local government areas of Igbo-Etiti, Nsukka, Uzo-Uwani, Isi-Uzo, Udenu, Nkanu East, Nkanu West, Orji River, Abakaliki, Ishielu, and Ikwo. Each of the selected local governments provided research assistants, who were specifically instructed by the researcher on how to administer the questionnaire for optimal success. The researcher and his helpers gathered the questionnaire after it was completed so that it could be properly analyzed.

Method of Data Analysis

The descriptive statistics were used to analyze the data acquired for the investigation. To answer the research questions, the researchers employed mean to analyze the data.

Results

Research Question One: What is the extent of provision of climate change adaptation library information for rural farmers?

Table 1

Mean and standard deviation of the ratings of the respondents on extent of provision of climate change adaptation library information for rural farmers

Item Statement	Mean	Std. Deviation	Rating	Decision
1. There is enough climate change adaptation library information provision to rural farmers	2.89	1.03	7 th	HE
2. Rural farmers are well equipped with climate change adaptation library information provision	2.67	1.07	8 th	HE
3. There is a complete neglect of certain areas of agricultural knowledge provided to rural farmers	3.10	.81	1 st	HE
4. There is inadequate climate change adaptation library information services provided to rural communities	3.07	.93	2 nd	HE
5. Library information materials on climate change adaptation provided for rural farmers are costly to access	2.99	.90	5 th	HE
6. Climate change library information and adaptation knowledge provided to rural farmers are fragmented and duplicated	2.96	.99	6 th	HE
7. Rural farmers are given enough library information on climate change adaptation	2.78	1.04	9 th	HE
8. Rural farmers receive climate change adaptation library information late	3.05	.97	3 rd	HE
9. Climate change adaptation library information provision in local dialect are comprehensive and understood	3.02	.97	4 th	HE
10. Rural farmers are well organized, motivated and pre informed by the climate change library information agent before any workshop, seminar or briefing on climate change adaptation	2.64	1.07	10 th	HE
Grand Mean	2.92	.46		HE

N = 510

Table 1 reveals that the mean ratings of the respondents to items 1 to 10 which borders on the extent of provision of climate change adaptation library information provision for rural farmers, are within the mean range of 2.50 to 3.49. This shows that there is a high extent (HE) of provision of climate change adaptation library information for rural farmers. However, the standard deviations of 1.03, 1.07, 1.04 and 1.07 to items 1, 2, 7 and 10 indicate that there is a higher variation in the ratings of the respondents among the items. Responses to items 3, 4, 8 and 5 with mean scores of 3.10, 3.07, 3.05 and 2.99 showed that some areas of agricultural practices are neglected and inadequate in library information provision, costly to access and are sometimes provided late.

Research Question Two: To what extent has the provision of climate change adaptation library information contributed to improvement of Agricultural output?

Table 2

Mean and standard deviation of the ratings of the respondents on the extent the provision of climate change adaptation library information has contributed to improvement of Agricultural output

Item Statement	Mean	Std. Deviation	Rating	Decision
1. Provision of climate change adaptation library information has reduced human activities leading to global warming	3.34	.88	1 st	HE
2. Library information provision on agricultural best practices improved Agricultural output.	3.20	.80	3 rd	HE
3. Workshops and seminars have created enough public awareness on climate change adaptation.	3.30	.83	2 nd	HE
4. Public awareness campaign on the adverse impact of carbon dioxide emission into the atmosphere has reduced the activities of highly industrialized nations.	3.05	1.00	7 th	HE
5. Provision of climate change library information have reduced the negative contribution to global warming arising from the use of chemical fertilizers	3.30	.83	2 nd	HE
6. Provision of climate change adaptation library information has attracted government and NGO s to increase funding of rural farmers	3.15	.87	6 th	HE
7. Early warning prediction and weather forecast has improved climate change adaptation	3.16	.93	5 th	HE
8. Agricultural library information provision has introduced rural farmers to use of improved seedlings	3.18	.86	4 th	HE
9. Provision of climate change adaptation library information has corrected rural farmer's wrong perception of climate changes.	3.00	1.01	8 th	HE
10. Provision of climate change adaptation library information on the use of paste control has reduced the spread of plant diseases and crop damage	3.16	.96	5 th	HE
Grand Mean	3.33	.48		HE

N=510

Table 2 indicates the mean and standard deviation of the ratings of the respondents on the extent the provision of climate change adaptation library information has contributed to improvement of Agricultural output. It shows that the mean ratings to items 1 to 10 according ranking are 3.34, 3.20, 3.30, 3.05, 3.30, 3.15, 3.16, 3.18, 3.00, and 3.16 with cluster mean of 3.33 and standard deviation of 0.48. The analysis showed that these means are within the mean range of 2.50 to 3.49 implying that the provision of climate change adaptation library information to a high extent has contributed to improvement of Agricultural output. The standard deviations of 1.00 and 1.01 for items 4 and 9 respectively showed that there is a higher variation in the ratings of the respondents to the items than the other items.

Discussion

Finding from the responses of the respondents on the extent of climate change adaptation library information provision to rural farmers show that there is inadequate climate change adaptation library information provided to rural farmers, even when the library information is provided, they are provided late, the library information provided in local language are understood better than foreign language. Again, the findings also reveal that there is a neglect of some areas of agricultural practices relevant to climate change adaptation.

In relation to the above, Taiy et al. (2015) opined that provision of climate library information for climate change adaptation to has been an ongoing process. Accordingly, people are continually modifying their agricultural practices to suit their specific needs owing to the available knowledge and resources. In agreement with this view, Adomi (2003) stated that Governments and stakeholders play a critical role in improving farmers' capacities to adapt to climate change and climate variability by providing climate library information and providing an enabling environment through policy and institutional framework to ensure that the most current library information is relayed to rural farmers in time to enable them respond adequately to climate challenge.

In reaction to the above assertions, the government, Non-Governmental Organizations (NGOs) and other agencies have tried in providing climate change adaptation library information to rural farmers through organizing workshops, orientations, seminars etc. It is established that providing timely climate change adaptation library information is more effective in enhancing the adaptability of rural farmers to climate variability. This will enable rural farmers utilize the library information appropriately. Some of the library information is needed at the preparation stage i.e. pre-planting stage; some are needed during planting season while some are needed after planting

season i.e. post-planting stage. In this respect, if any climate change adaptation library information is delivered outside the time it ought to be delivered; such library information becomes irrelevant to rural farmers. For instance, rural farmers need library information about improved seedling as early as in the preparatory stage i.e. pre- planting stage. However, if such climate library information based on a certain climate change forecast is provided to rural farmers at the post-planting stage i.e. after planting stage, such climate library information would have become irrelevant. But in a situation where such climate change adaptation library information is provided in good time before planting, rural farmers will take a better decision to plant such improved seedling which can survive climate variability. As such, agricultural output of rural farmers will be much more improved irrespective of climate change. More so, some of the agricultural practices that have been noted as contributing to global warming such as bush burning, deforestation, use of chemical fertilizer etc. is as a result of ignorance of the rural farmers. Therefore, relevant climate change adaptation library information on the best type of agricultural practices such as use of organic manure, afforestation, manual clearance of farmland, crop rotation etc. will help reduce global warming.

Responses from the respondents show that provision of climate change adaptation library information has contributed immensely to improvement of Agricultural output. For instance, they pointed out that the climate change library information has helped farmers and industrialized nations to adopt agricultural best practices and reduce activities that increase global warming. Findings also revealed that rural farmers have been able to acquire skills and knowledge for climate change adaptation. Similarly, through to introduction of improved seedling, agricultural productivity in rural areas have greatly improved etc. More so, the wrong perception, use of myths,

superstition etc. by many rural farmers to explain climate change effects as observed in their farms has been corrected through climate change library information provision.

In agreement with these responses, Suarez (2016) maintained that forecasts carry many potential benefits for reducing vulnerability, depression and massive crop and financial loss. This is particularly relevant in the realm of community-based climate disaster risk management. Akin to the above fact, Climate Change Agricultural Food Security (CCAFS) (2016), stated that with institutional support and policies, advisories and climate library information has offered great potential in enabling rural farmers make informed decisions, better manage climate risk, take advantage of favorable climate conditions, and adapt to change. According to the World Meteorological Organization (2011) climate library information and prediction services has helped rural farmers in better practices of planning, policy and decision making, management of climate change variability and adaptation.

Conclusion and Recommendations

It was concluded that there is inadequate climate change adaptation library information provided to rural farmers, even when the library information is provided, they are provided late. Based on that, it was recommended that;

1. Timely dissemination of climate change adaptation library information for improved Agricultural output of rural farmers to booster their ability to adapt to climate change dynamism. Early warning prediction will help rural farmers adopt appropriate method of farming to cope with climate change and also make some necessary decisions regarding climate change adaptation.
2. Community orientation and training of local extension officers, religious and community leaders to help communicate climate change adaptation library information to their

adherents/subjects. Local extension officers are very vital because they are very conversant to rural farmers, familiar with the culture, psychology, norms and traditions of the people, knows the terrain, acquainted with the climate etc.

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