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Sources of Library Information Needs for Climate Change Adaptation among Rural Farmers in South Eastern Nigeria

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Abstract

There is a dearth of research on the library information needs of farmers for climate change adaptation to improve agricultural products among the rural farmers. Thus, this study explored the sources of library information needs for climate change adaptation among rural farmers. Descriptive survey research was adopted for the study using a sample of 510 registered rural farmers in South Eastern Nigeria. A well validated and trial tested instrument was used to collect the data. The internal consistency reliability index of the instrument was 0.97 using Cronbach alpha method. Data collected were analysed using mean as a descriptive statistic to answer the research questions. It was found that climate change adaptation library information is seriously needed for improved Agricultural output of rural farmers. It was also found that radio, television, town criers, cooperative societies, religious leaders, libraries, posters, newspapers, extension agents etc. are the major sources of climate change adaptation library information. It was thus, recommended among others that Governments and rural authorities should provide access roads in rural communities to help library information agents access rural farmers with climate change library information.

Keywords: Climate change adaption, Library information, Rural farmers, South Eastern Nigeria

Introduction

Rural farmers according to Egbe (2014) account for the greater part of the population of any developing country such as Nigeria and South East in particular and are dominated by low economic income earners and are most vulnerable to poverty, hunger, diseases and low standard

of living. They live in communities characterized by bushy and forest environment, use of foot path, poor health care condition, poor library information access and facilities, ramshackle houses, extensive land uses and low population density, traditional medicines practices and belief, poverty and inequality, strict adherence to traditional religion and value system, informal education, traditional farming etc. Mondal (2016) also noted that rural farmers are distinguished by settlement, which is smaller in area than the urban communities, the density of population is low, the people have intimate relationships and face-to-face contacts with each other, and the familiarity level is high. In terms of world view, the rural people are in close contact with nature as most of their daily activities revolve around the natural environment. This is the reason why rural farmers are more influenced by nature. Rural farmers constitute the bulk of the poor in Nigeria who face the prospects of tragic crop failures, reduced agricultural productivity, increased poverty and hunger, malnutrition and diseases. All these negative prospects facing rural farmers are the dangerous threats climate change pose to rural farming in developing countries. As a result, rural farmers require relevant climate change adaptation library information to cope with the threat of climate change. Climate change adaptation library information has the capability of helping rural farmers develop the requisite skills for adaptation and improvement of agricultural output.

In order to fully improve agricultural output in the face of alarming climate change threatening agricultural productivity in rural communities, certain areas of climate change adaptation library information needs of rural farmers should be provided. These areas according to Sha (2012) include early warning prediction, agricultural library information i.e. agricultural best practices, modern farming system i.e. crop rotation, shifting cultivation etc., implications of application of chemical fertilizer to global warming, use of safe manures, implication of land clearance through bush burning, use of pesticides, implications of deforestation to global warming,

use of improved seedling, climate change adaptations, plant diseases, drought etc. rural farmers require library information on climate change adaptation to be able to react appropriately to climate variability. These areas of climate change library information include causes of climate change, climate change adaptation and implication of climate change to agricultural productivity.

Accordingly, Sha (2015) opined that global warming and climate change refer to an increase in average global temperatures. It is the gradual increase of tropospheric temperature as a result of excessive emission and concentration of greenhouse gases such as CO₂CH₄ NO₂ CFC₂ etc. Natural events and human activities are believed to be contributing to an increase in average global temperatures. This is caused primarily by increase in greenhouse gas such as Carbon dioxide (CO₂). A warming planet thus leads to a change in climate which can affect weather in various ways like shift in rainfall pattern, drought, etc. Its effects on agriculture are indeed frightening, and the effects on the human population are even scarier. World bank/United Nations report on Millennium Development Goal (MDG) (2006), opined that the potential effects of climate change on major crop yield such as maize, rice, cassava etc. will lead to increase in world food crisis and further expose rural farmers who are the most vulnerable people to the risk of extreme poverty and hunger. The above submission calls for adaptation measures to be taken by the farmers.

In the words of Saul (2015), adaptation measures have to do with limiting and controlling climate change excesses. Adaptation measures to climate change have to do with living with climate change. Therefore, efforts should be made at improving library information on environmental climate risk implications communicated in good time, unambiguous and in relevant terms through credible sources. This becomes vital for mobilizing rural farmers to take pragmatic steps that will enhance their knowledge capacity in mitigation and willingness to adapt to climate change. The plight of the rural farmers as pointed above is partly blamed on the failure of rural

farmers to adapt to threat of climate change owing to lack of timely, relevant and adequate climate change adaptation library information. Rural farmers' ability to adapt to climate change can be improved for good agricultural output through effective agricultural library information. Agricultural library information according to Atsever et al. (2008) interacts with and influences agricultural productivity in a variety of ways. It can help inform decisions regarding land, labour, livestock, capital and management. Agricultural productivity can arguably be improved by relevant, reliable and useful climate change adaptation library information and knowledge.

Library information according to Hornby (2010) is a fact or details about something. Jha (2012) stated that there are various types of library information required to enable decision making for climate change adaptation library information provision to rural farmers for improved agricultural output. They include reliable and scientific meteorological and hydrological library information as well as agro-ecological and socio-economic library information. Effective and relevant communicated climate change adaptation library information to rural farmers is translated to climate change knowledge when they are well utilized. Climate knowledge is the appropriate use of climate library information for reducing economic and environmental risks and strengthening resilience against climate change. Climate change adaptation is integral part of agricultural library information required by rural farmers to cope with the threat of climate change. Agricultural library information according to Atsever et al (2008) interacts with and influences agricultural productivity in a variety of ways. Agricultural productivity can arguably be improved by provision of relevant, reliable and useful climate change adaptation library information and knowledge.

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.

Purpose of the study

1. Find out the climate change adaptation library information needs of rural farmers in South Eastern Nigeria.
2. Find out the sources for meeting the climate change adaptation library information provision for rural farmers

Research Questions

1. What are the climate change adaptation library information needs of rural farmers in South East, Nigeria?
2. What are the sources for meeting the climate change adaptation library information to rural farmers?

Materials and methods

Design of the Study

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. 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) have adopted this design in similar studies.

Area of the Study

This 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.

Sample and Sampling Technique

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 hob of Agricultural production in South Eastern Nigeria. For instance, Enugu and Ebonyi State is the largest producer of rice, cassava, pepper etc. 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.

Instrument for Data Collection

Questionnaire was used for collection of data for the study. The instrument is Climate Change Library Information Provision developed by the researchers for improved Agricultural output of rural farmers. The researchers used four-point scales of 4-1 in a descending order of magnitude for instance: Cluster A used Highly Needed (HN) = 4point, Seriously Needed (SN) = 3point, Less Needed (LN) =2point, and Not Needed (NN) =1pont etc.

Validation of the Instrument

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 (2) from Department of Library and Library information Science and one (1) from Department of Education

Foundation, all from 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.

Reliability of the Instrument

To ascertain the internal consistency of the instrument, the instrument was pre-tested on twenty (20) rural farmers selected from Odolu Igala Mela 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 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.

Method of Data Analysis

The data collected for the study were analyzed using descriptive statistics. The researchers used mean to analyse the data in order to answer the research questions.

Results

Research Question One: What is the climate change adaptation library information for rural farmers in south east Nigeria?

Table 1

Mean and standard deviation of the ratings of the respondents on the climate change adaptation library information for rural farmers in south east Nigeria

Item Statement	Mean	Std. Deviation	Rating	Decision
1. Rural farmers need early warning library information on climate change threat	3.60	.61	1 st	HN
2. Early warning prediction is essential to rural farmers for proper farming planning to avert the adverse effect of flood, drought, fire outbreak etc.	3.32	.72	5 th	SN
3. Rural farmers require proper library information on improved seedling, usage etc.	3.32	.75	5 th	SN
4. Climate statistics and update library information can help rural farmers adopt measures for climate change adaptation	3.06	1.00	8 th	SN
5. Library information on the appropriate farming system can enhance mitigation of global warming.	2.98	.95	9 th	SN
6. Acquisition of relevant Agricultural library information can enhance flood and erosion control	3.24	.82	6 th	SN
7. Rural farmers require proper library information on the appropriate farming system	3.38	.79	3 rd	SN
8. Farmers need adequate agricultural library information on the best agricultural practices that can help mitigate the adverse effect of climate change	3.43	.74	2 nd	SN
9. Adequate library information to rural farmers on the suitable application of manure will enhance improved Agricultural output	3.34	.80	4 th	SN
10. Provision of relevant library information on the use of pesticides can help rural farmers control spread of plant pests, crop damage and diseases arising from weather variations	3.13	.90	7 th	SN
Grand Mean	3.28	.38		SN

N=510

Table 1 shows the mean and standard deviation of the ratings of the respondents on the climate change adaptation library information provision for rural farmers in south east Nigeria. It shows that the mean ratings of the respondents to items 1 to 10 according to their ranking order are 3.60, 3.43, 3.38, 3.34, 3.32, 3.32, 3.24, 3.13, 3.06 and 2.98. The mean rating to item 1 is within the mean range of 3.50 to 4.00 mean that the respondents agreed that climate change adaptation library information provision is highly needed for rural farmers with respect to item 1 while their mean ratings to items 2 to 10 are within the mean range of 2.50 to 3.49 implying that the respondents

agreed that climate change adaptation library information are seriously needed for rural farmers. Thus, the clusters mean of 3.28 and standard deviation of 0.38 indicates that climate change adaptation library information provision is seriously needed for the rural farmers. For instance, greater number of the rural farmers agreed that the area they require climate change adaptation library information provision include early warning prediction, agricultural best practices, appropriate farming system, application of manure, proper farming planning, improved seedling, flood control etc. However, the standard deviation of 1.00 for item 4 shows that the variation in the ratings of the respondents to the item was higher than the variations in the ratings to the other items.

Research Question Two: What are the sources for meeting the climate change adaptation library information for rural farmers?

Table 2

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

Item Statement	Mean	Std. Deviation	Rating	Decision
1. Radio is an important source that can be used to provide climate change adaptation library information to both literate and illiterate rural farmers	3.55	.75	1 st	VA
2. Extension agents like Librarians can provide climate change adaptation library information to rural farmers	3.06	.86	3 rd	FA
3. Television programmes is another source of provision of climate change adaptation library information	3.07	1.05	2 nd	FA
4. Religious leaders can provide climate change adaptation library information to rural farmers	2.88	1.14	5 th	FA
5. Visual resources like fliers, posters, charts and slides are vital sources that can be used to provide climate change adaptation library information	2.63	1.08	7 th	FA
6. Print media such as newspapers, journals etc are essential sources of climate change library information	2.81	1.05	6 th	FA
7. Libraries and library information centres are important sources of climate change library information	2.81	1.04	6 th	FA
8. Town criers are source of providing climate change adaptation library information to rural farmers	3.01	1.09	4 th	FA
9. Rural farmers can use internet as a viable source of climate change adaptation library information	2.37	1.14	8 th	A
10. Cooperative societies and nongovernmental organizations also can provide climate change adaptation library information to rural farmers.	3.07	.97	2 nd	FA
Grand Mean	2.93	.48		FA

N=510

Table 2 shows the mean ratings of the respondents to items 1 to 10 which boarder on the sources for meeting the climate change adaptation library information for rural farmers. It shows that the mean ratings of the respondents to items 1 to 10 according to ranking order are 3.55, 3.07, 3.07, 3.06, 3.01, 2.88, 2.81, 2.63, 2.81, 2.81 2.37, 3.01 and 2.37. Item 1 had mean rating within 3.50 to 4.00. Respondent's response indicating "Very Appropriate" (VA) is an evident that radio is the major source of climate change adaptation library information provision to rural farmers. Items 2, 3, 4, 5, 6, 7, 8 and 10 had mean ratings within 2.50 to 3.49 while item 9 had mean rating within the mean range of 1.50 to 2.49 with the overall cluster mean of 2.93 and standard deviation of 0.48 This also implies that library information agents, television, religious leaders, posters, fliers, newspapers, libraries, town criers, cooperative societies etc. as sources for providing the climate change adaptation library information for rural farmers are fairly appropriate (FA). The standard deviations to items 9 of 1.14 with mean score of 2.37 reveal that internet is not a major source through which rural farmers receive climate change library information.

Discussion

The findings of the study revealed that climate change adaptation library information is seriously needed for improved Agricultural output of rural farmers. Responses of respondent show that library information on the right type of farming system, industrial practices, agricultural practices etc. can help rural farmers improve agricultural productivity. Their responses further show that over the years, the traditional and predominant method of agricultural practices such as clearing farmland through bush burning, use of chemical fertilizer, animal rearing and deforestation are some of the areas of climate change adaptation library information required by rural farmers to improve their agricultural productivity. In addition, the use of firewood as cooking

energy source has recently gained prominence, because of the high cost and non-availability of other cleaner sources such as natural gas. These areas constitute the climate change adaptation library information for rural farmers. In other words, the respondents agreed that climate change adaptation library information is highly needed for rural farmers to improve their agricultural output. According to Medugu (2009), these activities which seldom increase the concentration of Green House Gases (GHGs) in the atmosphere trapping heat and causing global warming leading to climate change are vital areas of climate change adaptation library information to rural farmers.

The above discussion revealed that both the industrialized nations and rural farmers in the developing countries of which Nigeria and South East are among contribute greatly to global warming. These becomes issue of concern due to the danger arising from several activities within our local communities including traditional farming practices that lead to emission of carbon dioxide into the atmosphere. Therefore, most of these activities and practices constitute viable areas rural farmers need climate change adaptation library information provision.

The findings on the sources of meeting the climate change adaptation library information for rural farmers from the point of view of respondents' responses to the questionnaire showed that radio, television, town criers, cooperative societies, religious leaders, libraries, posters, newspapers, extension agents etc. are the major sources of climate change adaptation library information. In support of these findings, Dike (2003) stated that Audio-visual resources such as audio materials example radio, tape etc., visual materials example, maps, charts, graphs etc., and Audio-visual resources which include television, films etc. are vital sources of climate change adaptation library information to rural farmers.

Echoing this fact, radio programmes have stood out as the most prominent source of climate change adaptation library information provision. During radio programmes, experts share

opinions and knowledge on climate change adaptation. The most beneficial aspect of these radio programmes is that most of them are aired in local dialects of rural farmers. Some of the farmers during the focus group discussion opined that the radio programmes are most suitable in that, the programmes are carried out at the time most appropriate to them i.e. after farm work. In other views, other farmers pointed out that they normally receive library information on climate change adaptation through extension agents, friends and religious leaders. Reacting to internet as a source of library information, rural farmers decried the poor internet network and facilities as a major inhibition to climate change adaptation library information a provision. Though they claimed that they can use their cellular phone to access the internet with the help of their children yet, the internet is not as popular as other sources of climate change adaptation library information provision.

Conclusion and Recommendations

Based on the findings of the study, it was concluded that climate change adaptation library information is seriously needed for improved Agricultural output of rural farmers. Thus, in order to facilitate the climate change adaptation library information provision for improved Agricultural output of rural farmers, this study makes the following recommendations:

1. Governments and rural authorities should provide access roads in rural communities to help library information agents access rural farmers with climate change library information. Again, it will equally enable rural farmers the opportunity to attend workshops, seminars, climate change meetings, orientations etc.
2. 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.

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