APPRAISING THE EFFECTIVENESS OF EXTENSION EDUCATION STRATEGIES ON FOOD SECURITY AMONG RURAL COMMUNITIES IN RIVERS STATE, NIGERIA

AMACHREE, TELEMA
Department of Adult Education and Community Development
Rivers State University, Port Harcourt.
E-Mail: telemaamachree@gmail.com
GSM: 08037907874

NWEKE, DORATHY
Department of Adult Education and Community Development
Rivers State University, Port Harcourt.
E-Mail: dorathychikaodi24@gmail.com
GSM: 08051947993

OLORI, CHRISTIAN
Department of Continuing Education and Development Studies
University of Nigeria Nsukka
E-Mail: Christian.olori@unn.edu.ng
GSM: 08034223511

Abstract

The study aims to appraise the effectiveness of extension education strategies on food security among rural communities in Rivers State. Two research questions were raised to guide the study. A descriptive survey research design was adopted with a population of 2,370 members in 26 registered cooperative societies across the three senatorial zones. The sample size of 474 was drawn from the population using a multi stage sampling procedure. The data collecting instrument was the researchers' face-validated questionnaire, 'Extension education strategies and food security' (ESFOS), with an overall reliability index of 0.87. Data were analysed using mean and standard deviation. Findings, among others, show that rural communities' adoption of new technologies and community participation in extension activities was low. Based on the findings, it was recommended that credit facilities be provided for rural communities to purchase new farm machinery.

Keywords: appraising, effectiveness, extension education, food security, rural communities
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Introduction

Food scarcity in Nigeria, especially within rural communities, represents a complex challenge influenced by environmental, economic, and social factors. Studies indicate that approximately 49.4% of rural households experience food insecurity (Adepoju & Adejare, 2013). In Rivers State, food scarcity is further exacerbated by industrial pollution, environmental degradation, and socio-economic disparities. These complex factors necessitate the integration of mechanisms to enhance food availability, leading to the development of extension education. Extension education plays a critical role in rural development and human empowerment. It contributes to balanced social and economic progress in rural areas by equipping individuals with practical knowledge that can be applied to improve their livelihoods (Krishra, 2012). In particular, agricultural extension serves as a system that enables farmers to adopt improved farming methods and techniques, increase

production efficiency and income, and enhance their overall standard of living as well as the social and educational conditions of rural communities (Rauma & Väisänen, 2003; Nwuzor, 2009). It aims at improving the efficiency of farmers, not only in meeting their subsistence needs, but production of surpluses for the market. The meeting of the subsistence needs of the rural populace calls for increased attention on extension education. By offering farmers educational and material services, using effective extension methods, it stimulates them to make positive changes in their farm operations as well as utilise more efficient strategies. These strategies involve an art or science of developing and employing the economic political psychological and other pioneers of a nation to accomplish the set objectives (Ojike, 2003). Thus, while people are influenced by changes in behaviour in proportion to the degree of their contact with several different methods, Yahaya, (2013) explains that extension education requires the application of many strategies and tools of teaching. Some of these strategies are group contact method and mass contact method.

The group contact method refers to the extension worker's ability to analyze a given situation, which is essential for achieving predetermined goals. This method considers the tendency of individuals to respond to group pressures and opinions, as well as their willingness to listen to the perspectives of others before making decisions regarding changes in farming operations (Yahaya, 2013). Stressing on its importance, Benor et al (2014) explain that the method is better used for specific information about practice, which assist individual through desire to conviction and action. Thus, explaining its pivotal place and use by extension workers. The cooperative action of the group is believed to improve a task in agriculture, and progress becomes faster owing to their involvement in the implementation of perceived beneficial programme. With the acquisition of digital literacy skills, the group is seen adopting new innovation, appropriate teaching method such as seminar, agricultural workshops required to stimulate the desire for change and provide an opportunity for the farmers to build self-confidence (Obibuaku, 2003).

In addition to the group method, the mass contact method occupies a pivotal place in the promotion of food security. The method entails reaching a wide audience at a very fast rate. They are important in stimulating farmers' interest in new ideas and practices (Kyange, 2011). It stimulates farmers' interest in new ideas and practices. While the use of this method is constrained by some factors, such as a language barrier, as farmers have no forum to give direct feedback or have the opportunity to be involved in the teaching process, Krishna (2012) stated that the method reaches people of all cultural levels who understand the language of transmission. This is possible, as Adams (2012) aptly observed, as various methods are found in this mass media, with classification in newspapers, radio, television, publications, and the like. The newspaper serves as a valuable channel for transmitting educational information to rural areas where it is accessible and read by the population. Interestingly, many researchers attest that no one method is effective under all situations (Yahaya, 2013; Isiaka, 2006; and Adams, 2012). Thus, the combination of various methods is often recommended as extension education involves solving particular problems, which is adapted to suit the culture of the people (Adams, 2012). The application of various methods is believed to make learning effective, as extension work takes place mostly outside the formal system of education. Motivated by the learners, participation in learning activities such as food security, is promoted.

Food security in its most basic form is defined as access to the food needed for a healthy life at all times by all people (FAO and WHO cited in Eide, 2015). In other words, food security means that everyone can access enough food for an active and healthy life at any time

(Reutlinger, 2005). Its central elements are food availability and the ability to acquire it (Adeoti, 2009). On the contrary, food insecurity is a lack of access to enough food, which can be chronic or temporary. Chronic food insecurity arises from a lack of resources to produce or acquire food, resulting in a persistently inadequate diet (Adeoti, 2009). Most individuals live in rural communities, with about two-thirds engaged in crop and livestock production for their own use or for sale. Therefore, food and nutrition security are closely tied to agricultural productivity. Widespread malnutrition is common in rural communities in Rivers State. This is due to chronic food shortages, unbalanced nutrition, erratic food supply, poor quality foods, high food costs, and even a total lack of food. These challenges persist despite various approaches to address them. This situation necessitates the use of extension education strategies to determine their effectiveness in promoting food security in Rivers State. Therefore, this study investigates the primary research question: How do extension education strategies contribute to the promotion of food security in Rivers State, where food insecurity is evident due to crude oil exploration and exploitation?

Purpose of the Study

The study aims to examine the contribution of extension education strategies to the promotion of food security in Rivers State. Specifically, the study sought to ascertain the extent of the contribution of:

1. group contact strategy of extension education in promoting food security in Rivers State.
2. mass contact strategy of extension education in promoting food security in Rivers State.

Research Questions

The following questions guided the study

1. To what extent does contact strategy of extension education contribute to the promotion of food security in Rivers State?
2. To what extent does mass contact strategy of extension education contribute to the promotion of food security in Rivers State?

Methodology

The descriptive survey research design was adopted for this study. The population of the study was 2,370 registered farmers in 26 cooperative societies in Rivers State. The sample size for the study was 474 members drawn from 17 societies across the three senatorial zones in the state using the multi-stage sampling procedure. The purposive sampling technique was employed to select 29 farmers from each of the six registered cooperative societies in Rivers East senatorial district, 28 farmers from each of the six societies in Rivers West, and 27 farmers from each of the five societies in Rivers South East district. The instrument for data collection was a researcher's structured questionnaire. Titled 'Extension Education and Food Security' (DLSEEFS). The instrument consisted of two sections: A and B. Section A elicited information on the demographic characteristics of the respondents, while Section B was in clusters of two. Cluster "A" elicited information on the extent of application of the group contact strategy of extension education to promote food security, while "B" elicited information on the extent of application of the mass contact strategy of extension education to

promote food security. The response options were based on a four-point rating scale of Very High Extent (VHE) = 4 points, High Extent (HE) = 3 points, Low Extent (LE) = 2 points, and Very Low Extent (VLE) = 1 point. The instrument was face-validated by three experts. Two of the experts were from the Department of Continuing Education and Development Studies, while the third expert was from the Measurement and Evaluation Unit in the Department of Science Education, both of the University of Nigeria, Nsukka. An overall reliability coefficient value of 0.75 was obtained using the Cronbach's alpha Statistical tool. Data were analysed using mean and standard deviation.

Result

Research Question 1: To what extent does contact strategy of extension education contribute to the promotion of food security in Rivers State?

Table 1: Mean and Standard Deviation of Respondents on the extent to which group contact strategy of extension education contribute to promoting of food security

S/N	Items	x	SD	Remark
	Motivating the individual farmer to respond to pressure of food production	3.12	.99	High
	Teaching the farmers on better ways to improve yields	2.71	.87	High
	Responding to opinions of the cooperative society to promote farming activities	2.80	.90	High
	Encouraging the farmers on the use of new technique to enhance yields	3.20	.84	High
	Encouraging farmers to embark on field trips to bigger farmers where they can learn more about commercial farming	3.59	.50	High
	Solving the problem of the farmers as regards to low yields which leads to food insecurity	2.82	.1.24	High
	Overall Mean	2.89	.76	High

Table 1 shows the mean and standard deviation of respondents on the extent of application of group contact strategy of extension education contribute in promoting food security in Rivers State. The result shows that all the items were regarded as high by the respondents in the use of group contact method in promoting food security. These items include; motivating the individual farmer to respond to pressure of food production (x= 3.12 and SD =.99),teaching the farmers on better ways to improve yields (x= 2.71 and SD =.87) responding to opinions of the cooperative society to promote farming activities, encouraging the farmer on the use of new technique to enhance yields(,encouraging farmers to embark on field trips to bigger farmers where they learn more about commercial farming and SD=.50), solving the problem of the farmers as regards to low yields which leads to food insecurity and SD = 1.24). The overall mean score of the respondents is (2.89 and SD=.76).This implies that the extent to which group contact strategy of education contribute to the promotion of food security in Rivers State was high.

Research Question 2: To what extent does mass contact strategy of extension education contribute to the promotion of food security in Rivers State?

Table 2: Mean and Standard Deviation of Respondents on the extent to which mass contact strategy of extension education contribute to promoting food security

S/N	Items	x	SD	Remark
	Reaching many farmers at a very fast rate on relevant Government information for farmers	2.67	1.18	High
	Providing information on various farming methods for Improved yields	2.88	1.17	High
	Stimulating farmer's interest on new practices to boost crop yield	2.76	1.20	High
	Creating room for farmers to showcase their farm produce	2.88	.86	High
	Providing farmers with information on how to use improved varieties of seed crop production	2.52	.94	High
	Promoting ways of applying organic manure and fertilizer to Improve crop production	3.01	.98	High
	Overall Mean	2.76	1.05	High

Table 2 shows the mean and standard deviation of respondents on the extent to which mass contact strategy of extension education contribute to promoting food security in Rivers State. The result shows that all the items were regarded as high by the respondents in the use of mass contact method in promoting food security. These items include; reaching many farmers at a very fast rate on relevant government information for farmers SD=1.18),providing information on various farming methods for improved yields stimulating farmers' interest on new practices to boost crop yield creating room for farmers to showcase their farm produce(x=2.88; SD=,86), farmers with information on how to use improved varieties of seed(x=2.53mSD=.94)Promoting ways of applying organic manure and fertilizer to improve crop production （元＝3.01 and SD =.98). The overall mean score of the respondents is (x=2.76 and SD=1.05). This implies that the extent to which mass contact strategy of extension education contribute to promoting food security in Rivers State was high.

Discussion of Results

Findings of the study show that the extent to which the group contact strategy of extension education contributes to promoting food security was high in Rivers State. This is because the mean responses of the respondents in all the items were regarded as high. This finding is in line with Benor, Harrison, and Baxter (2014), who stated that Group contact methods are better used for specific information about practice, which assists individuals through desire to conviction and action. Group teaching methods are more frequently used in extension work than individual teaching techniques. By utilizing group technique, an extension worker can reach more people than possible. Yahaya (2003) pointed out that the group method proves important when time and staff are limited. Yahaya maintains that group methods are especially effective in persuading extension's clientele to try a new idea or practice. Recognising the relevance of this extension education strategy to food security, which may be new to scholars, the study advocates its integration to enhance food security in Rivers State.

Findings also revealed that the mass contact strategy of extension education makes a significant contribution to promoting food security in Rivers State. This is because the mean responses of the respondents in all the items were regarded as high. This finding is in line with Kyange (2011), who stated that Mass contact methods are useful in reaching a wide audience at a very fast rate. They play a crucial role in stimulating farmers' interest in new

ideas and practices. Adams (2012) stated that the various methods that come under mass media classification include newspapers, radio, television, publications, and the like. Newspapers provide a valuable channel for transmitting educational information, particularly in areas where they are available and read by rural people. On the other hand, Krishna (2012) stated that the mass contact method reaches people of all cultural levels who understand the language of transmission. A radio programme aims to disseminate information that is beneficial to a large number of urban and rural dwellers. However, while research on the efficacy of this strategy in promoting food security is scarce, the present study adds to existing literature in advocating its integration as an extension education strategy for the promotion of food security.

Conclusion

The rise in food insecurity in Rivers State, particularly in rural communities, has prompted the application of extension education strategies, despite the efforts of extension workers to enhance their knowledge of food production. With the application of some of these strategies, the group contact and mass contact strategies were found to significantly contribute to promoting food security by fostering an interest in innovative farming approaches that yield greater results.

Recommendations

Based on the findings, discussions, and conclusion, the following recommendations were made:

1. Policy makers should ensure the integration of extension education strategies into the curriculum to provide avenue for dissemination of knowledge to boost crop production for farmers.
2. Practitioners of extension education should be exposed to professional development training on the use of these strategies to aid in delivery their lessons to the farmers in a more holistic manner for effective output.

References

Adams, M. E. (2012). *Agricultural extension in developing countries*, United Kingdom: Longman.

Adeoti, M. (2009). Obstacles facing extension agents in the development and delivery of *Agric. Educ.* **39** (1): 48-54.

Adepoju, A., & Adejare, K.A. (2013). Food Insecurity Status of Rural Households During the Post Planting Season in Nigeria. *Journal of Agriculture and Sustainability, 4*.

Axinn, G. (2008). *Guide on alternative extension approaches*. Rome. FAO,

Ball, S. & Bass, F. (2000). Rapid appraisal of agricultural knowledge system (RAAKS) Unpublished Project, Agricultural University Wageningen

Benor, D; Harrison, J. O. & Baxter, M. (2014). *Agricultural extension: the training and visit system.* Washington. D.C: The World Bank.

Davies, T. (2009). *Strategic extension campaign: A case study of FAP'S experiences. Food & Agricultural Organization,* United Nations.

Eide,O.(2015).*Psychology of learning and development.* India: SHIPRA Publication.

Evans, D. R. (2009). *Games and simulations in literacy training.* Tehran, Iran: International Institute for Adult Literacy Methods.

Federal Ministry of Education, FME, (2009). *Formulating extension policy in improving agricultural extension,* A reference Manual.

Food and Agricultural Organization -FAO (2012). *Guidelines on communication for rural development. A Brief for Development Planners and Project Formulators.* Rome. FAO.

Idachaba, F. (2004). Need to strengthen supervision in Agricultural Extension service in Nigeria. *J. Pure and Appl. Sci.*, **5** (1):1-7.

Ikoku, H.O. (2010). *Element of rural broadcasting*. Lagos: Gabi Concept Ltd.

Isiaka, B. T. (2006). *Potentials and Effectiveness of Video Self Learning Method in Agricultural Information Dissemination 3 South-West Nigeria.* Ph.D. Thesis unpublished. University of Agriculture, Abeokuta

Ivowi, F. (2008). *Communication for development. A medium for innovation in natural resource management.* Ottawa: International Development Research Centre and Rome: FAO.

Khan, A.M. (2008). *Restructuring of the agricultural department in NWFP*. *Report*. NWFP, Peshawar.pp.8-14.

Khan, J.A.M. (2003). *Identification and rank order development of self-perceived Dissert,* Univ. of Faisalabad, Pakistan.

Krishna, C. C. (2012). *Cooperative extension work. Ithaca*, New York: Constock Publishing Associates.

Kyange, I. (2011) Communication and advocacy strategy in extension. In S.F Adedoyin (ed).*Agricultural Extension in Nigeria Publication of Agricultural Extension Society of Nigeria*. 21-23.

Lairds, D. H. (2012). *Training methods for skills acquisition.* Washington. D. C. American Society for Training and Development.

Laogun, E.A. (2005). Extension teaching/learning process and extension methods. In S.F. Adedoyin (ed) *Agricultural Extension in Nigeria. Publication of Agricultural Extension Society of Nigeria*, 201-207.

Muhammad, S. (2004). *An effective communication model for the acceptance of new agricultural technology by farmers in Punjab, Pakistan*. Ph.D Dissertation. Readings: University of Readings.

Nworgu, B.G. (2015). *Research method and statistics.* Enugu: African First Publishers, Enugu Nigeria.

Nwosu, P.O. & Megwa, E. (2003). Communication & rural development in Swaziland. *Africa Media Review*.**7** (1): 1-17

Nwuzor, G.M. (2009). *Fundamentals of general agriculture.* Lagos. Duboff Publishers.

Obibuaku, L.O (2003). *Agricultural extension as a strategy for Agricultural Transformation.* Nsukka: University of Nigeria Press.

Ogunwale, M. (2006). *Rural sociology. An introduction and analysis of rural Nigeria,* Ibadan: Jumak publishers.

Ojike, D. (2003). *A guide to public relations practice in agricultural research.* Ibadan: Banktab Publishers.

Oladosu, G. (2005). *Basic issues in adult education*. Lagos: Raytel Communication Ltd.

Rama B.R. & S.T. Joan. (2006). Extension agents' use of information sources. *Journal on Educational Extension,* **34** (1).

Rauma, B. & Vaisanen, F. (2003). *Agricultural extension.* New York: Longman Scientific and Technical.

Reutlinger, D. (2005). *Building communication-theory,* Illonois: Wareland Press Inc.

Rogers, A. (2008). *Adults learning for development*, London: Longman.

Song, H. K. and Kang, J.T. (2014). *Individual and group extension methods*. Rome: FAO.

Ulijekoon H. & Newton, J. (2000). *Information Source to strengthening agricultural extension*. Rome: FAO.

Uwakah, C.T. (2014). Programmes and opportunities in agricultural Extension Education. A paper presented to students of Agriculture Extension Department UNN.

Warra, F. (2009). *Development communication: Information, Agriculture and Nutrition in the third world*. New York & London: Longman.

Development communication. Lessons from change and social Yahaya, M.K. (2013). Engineering projects.