
THE ROLE OF EXTENSION WORKERS IN CREATING ENVIRONMENTAL AWARENESS AMONG FARMERS ON SUSTAINABLE CROP FARMING IN OGOJA LOCAL GOVERNMENT AREA OF CROSS RIVER STATE, NIGERIA

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ABSTRACT: *The study investigated the role of extension workers in creating environmental awareness among farmers on sustainable crop farming in Ogoja Local Government Area of Cross River State, Nigeria. Two null hypotheses were formulated to direct the study. Literature was reviewed based on the variables of the study. The survey research design was adopted for the study. The population of the study comprised of all adult male and female in the study area. A sample size of seven hundred and ninety one (791) was drawn from the population of seven thousand nine hundred and ten (7,910) using the stratified and simple random sampling techniques. A four point modified Likert scale questionnaire titled “The Role of Extension Workers in Creating Environmental Awareness among Farmers on Sustainable Crop Farming” (TREWCEAFSCF) was used for data collection. The instrument was validated by two test experts in the department of test and measurement University of Calabar. The instrument was personally administered by the researchers with the help of two trained research assistants in the area of the study. The data obtained were analyzed using regression statistics and one-way analysis of variance (ANOVA). The result of the analysis revealed that the role of extension workers in creating environmental awareness among farmers significantly influence sustainable crop farming. Based on the result of the findings, the study recommended among others that extension workers should not relent their effort in environmental awareness creation among farmers on sustainable crop farming and that the government should encourage the use of extension workers in information dissemination on sustainable crop farming.*

KEYWORDS: Extension workers, Extension services, Environmental awareness creation, Crop farming, sustainable crop farming

INTRODUCTION

Ogoja Local Government Area is one of the 18th Local Government Areas in Cross River State, Nigeria. It is located in the northern axis of cross river state and it is one of the oldest provincial headquarters created during the colonial regime. The people of Ogoja are predominantly farmers with major emphasis on crops such as rice, sugarcane, maize, beans, potatoes, yam, cassava, melon, cocoyam, water yam, plantain, banana, groundnuts, peanuts and ground beans.

Crop farming is very beneficial to man as it provides different classes of food such as protein and carbohydrate for man’s consumption and helps to improve his economic status through sales made from the farm produce. In the past five decades much emphasis has been laid on increase in food production in Cross River State and Nigeria in general. This situation has encourage policies that recommend or emphasize the use of external inputs as a way of

increasing food production. This has led to the growth in global consumption of pesticides, inorganic fertilizers, herbicides and mechanized farming. The external inputs through has contributed enormously to increase food production in the area but it has however substituted the natural processes and resources rendering them less powerful. This ugly development has contributed to the constant degradation of the human environment. The hazardous consequences of such abuses are now staring right on our faces and have constituted a threat to human existence in the biosphere (Ukpong, Ntia, Obot & Usang, 2010).

The government and other concerned bodies is making concerted, effort to put an end to this ugly trend by introducing technologies and practices that will improve food production and also preserve the environment. Ironically some crop farmers have refused to consider the threat which their activities have on the environment. It is evident that one of the most difficult tasks for environmental workers is to convince the rural masses to accept environmental propaganda and put the suggested possibilities into practices. It is therefore hope that through extension workers information could be disseminated to crop farmers in the area of the study on how to carry out farming activities that would result in increase food production without degrading the environment. It is in light of the above that this study seeks to investigate the extent to which extension workers could be used in creating environmental awareness among farmers on sustainable crop farming in Ogoja local government area of Cross River State, Nigeria.

The concept extension services and extension worker

The concept extension services refers to an informal out-of-school educational process for the training of concerned members of the society or the society in general to improve life practices with the aim of helping people to enable them help themselves (Ukpong, Ntia, Obot & Usang, 2010). It also denote a way of disseminating useful information to people with the ultimate goal of helping the recipients appropriate what they learn to existential situations. For extension service to succeed, it must start where people are and with what they need before considering what they ought to be. Extension services must first start with the aim of achieving a desired situation.

An extension worker or agent is one who develops and delivers educational programmes to assist people in areas such as economic and community development, leadership, agriculture, environment, health and family issues. Ukpong et al (2010) stressed that the central task of the environmental extension agent is to help people to learn about and to use the relevant accumulating knowledge related to agriculture, health family life etc.

The concept environmental awareness creation

Anthony and Essien (2018) defines environmental awareness creation as a process of sensitizing the community or the populace on something. It denotes knowledge created through the interaction of an agent on the environment and about the environment. Simply put, environmental awareness creation entails knowing what is going own in the environment. It also implies helping people to acquire knowledge about the state of the environment.

The concept crop

According to the Encyclopedia Britannica a crop can be define as a plant or plant product that can be grown and harvested extensively for profit or sustenance. Crops can be grouped under six categories, Food crops for human consumption, feed crops for livestock consumption, fibre

crops for cordage and textiles, oil crops for consumption or industrial uses, ornamental crops for landscape gardening and industrial and secondary crops, for personal and industrial uses. <http://www.cropsreview.com...2019>.

The concept crop farmers

A farmer is a person who raise field crops, orchards, vineyards, poultry or other live stock. He is one who promotes or improves the growth of plants or corps. Crop farmers are people who work on the land to produce high quality and high yielding fruits, nuts, cotton, grains vegetables, Sod, sugarcane, yam, cocoyam, cassava, potatoes, oranges, oil palm, rubber, banana, soybean, bean, tomatoes, pineapple, rice and other food crops (Ulayi, 2018). Crop farmers could also be refer to people who carry out business or enterprise in which an agri-entrepreneur ventures in a commercial production of crops. Most of these farmers engages in corporate farming for the large-scale production of selected crops for profit while poor marginal farmers see crop farming as a means of livelihood and sustenance for the basic needs of the family.

The concept of sustainable crop farming

By sustainable crop farming we refers to a development whereby farmers adopt difficult techniques and farming inputs to improve their output and ensuring food security without degrading the soil or the environment. It is the process of meeting the society's food and textile needs in the present without compromising the ability of the future generations to meet their own needs. For sustainable crop farming to take place three factors should be considered viz; a healthy environment; economic profitability and social and economic equity (Anthony, 2002).

Extension workers and environmental awareness creation on sustainable crop farming

The role of extension agents or workers in creating environmental awareness among crop farmers cannot be over emphasized. Ukpong et al (2010) are of the opinion that with the help of environmental extension workers some of the health hazards caused by agricultural practices due to ignorance can be minimized. According to them, it is the responsibility of the extension workers or agents to plan, organize and execute environmental education aimed at educating the peasant farmers on issue such as self-health care, care for animal, diagnosis of disease symptoms and what to do, proper application of chemicals and waste management to minimize atmospheric water and land pollutions.

There is no doubt that crop farmers can contract infections and parasitic diseases directly or indirectly during the course of farming. Examples of such diseases are: Tick-borne encephalitis, tetanus, bovine tuberculosis, tick-borne hemorrhagic fever etc. More so, the use of agro-chemicals such as DDT organic phosphorous compound, nitrate and chlorinated phenols to combat some agricultural problems could led to land water and air pollution thus creating another health hazard. It is impracticable and unreasonable to order the stoppage of most agricultural practices that are inimical to humans and the environment because it will result to decrease in food production. The duty of the extension worker therefore is to assist crop farmers with useful information that will help them apply such agro-chemicals in a sustainable manner (Ulayi, 2018).

Pretty (2015) maintain that regenerative and resource conservation technologies and practices can bring both environmental and economic benefits to farmers, communities and nations. He said that this approach is exemplified in Africa Asia and Latin America where there is serious concern for increase food production by farmers. In areas where regenerative technologies are adopted agricultural yields improve. It therefore behooves on extension agents to disseminate information concerning this approach to farmers since they are aware that their credibility is at stake if they don't pass useful information to their clients. To carry out this task successfully extension workers train farmers on the use of resources conserving technologies such as integrated pest management soil and water conservation nutrient recycling, multiple cropping waste recycling etc.

Agriculture is seen as the engine room of growth in many developing economies particularly in sub-African region. To ensure that there is food security in any nation the agricultural productivity of such nation must be on increase. Increase food production requires the use of modern farming technologies in farming support for rural and adult learning and to assist farmers in developing their farm technical and managerial skills. These could be achieved with the assistance of extension workers. Through extension programmes information obtained by farmers will help them increase their productivity level, reduce poverty and minimize food security.

Clinton and David (2006) are of the opinion that extension agents play a vital role in the lives of the rural populace. They further stressed that traditional cropping based on local knowledge system help to ensure food security. They however decried that food security is yet to be achieved in some rural areas due to lack of extension services. According to them the role of extension workers is to transfer valuable knowledge that is necessary of coping with risks and uncertainties in a changing world.

According to the organization for international cooperation in high education OICHE (2003) the role of extension workers has been modified to help control farming activities that encourage sustainable development. They enumerated the characteristics of extension workers as follows: That the knowledge of extension workers is localized in nature; traditional in context; unique to specific environmental and cultural condition; operate in informal settings; orally transmitted and rarely documented; holistic in nature and is part and parcel of the rural people.

Ukpong, et al (2010) are in support of afro-forestry as a sustainable approach to land use. It aim at creating productive farming systems able to supply an increasing and sustainable output of basic needs and increase the per capital income of farmers. They criticize the traditional farming methods practice in the rural areas such as shifting cultivation, bush fallow system, inter cropping and crop rotation. According to them these traditional method are not sufficiently productive to support the rapidly growing population of Nigeria. To encourage agro-forestry practice among the rural farmers, funds and incentives should be made available to them. It is therefore the responsibilities of extension workers to ensure that these incentives which may take the form of loan, credits and grants get down to the right persons and groups. It is also the responsibility of extension workers to educate the peasant farmers on how to use such support to reduce the initial capital outlay and minimize risk and failure. Extension agents

can also assist in facilitating the supply of materials, training of farmers follow-up and periodic visits to monitor in agro forestry development particularly in the rural area.

It should be noted however that even with the provision of incentives and other forms of assistance to farmers agro forestry/forestry extension may still suffer from inadequate trained staff, insufficient demonstration plots, lack of consistent effort, lack of infrastructures, difficulties in obtaining good seeds for mass distribution to farmers and community acceptance. These issues must be properly addressed if effective extension services and the development of agriculture is to be ensure. The role of extension agents as a friend, counselor and teachers is to encourage farmers to recognize and obtain clearer insight to their problems, take interest in them and try to overcome them.

Adeyeye (2007) sees extension workers as people who continuously strive to bring about changes in the behavior of farmers and their families. The role of extension agent therefore is to assist farmers with information that will enable them discard the old method of farming and adopt the new techniques. Extension workers therefore encourage farmers to adopt modern farming method that will help to improve their productivity such as; improved seed/seeding, herbicides, insecticides and fertilizers.

Oladeji (2011) contented that the use of different methods to disseminate information to farmers due to lack of or limited number of extension agents to carry out the task will affect farmers level of perception of such information in the rural areas. He therefore suggested the use of advertisement to promote awareness among farmers. According to him agricultural advertisement through the news paper are vanguard for awareness creation to boost agricultural enterprise and dissemination of agricultural information to a larger farming population. Using this channel for dissemination of information give a first-hand information to farmers especially those who buy farm produce in large quantity for industrial use.

Creation of agricultural farm centers is another area where farmers obtain useful information and awareness that enable them to improve their farming methods thereby increasing their outputs. Creation of agricultural farm centers for town meeting where information can be processed and made available to farmers at need would be of importance to boost farmers knowledge. The facilitator of information could be slides or films to disseminate information to a larger audience. The dearth of agricultural information flow and awareness among local farmers is principally responsible for reduce farming outputs and storage of farm produce thereby resulting to food insecurity. Sustainable crop farming could be achieved with the help of effective and efficient awareness strategies marked by the various extension agencies (Oladeji, 2011).

In a study carried out by Ifedha and Julius (2015) to investigate the role of agricultural extension workers in promoting sustainable crop farming in Esan central and Esan west local government areas of Edo State. Descriptive research design was adopted. A sample of of 285 female farmers were drawn for the study using convenience sampling technique. The independent t-test was use to analyse the data at .05 level of significance and 283 degree of freedom. The result of the analysis revealed that agricultural extension workers play a significant role in promoting sustainable crop farming among the people in the area of the study.

Omotayo (2015) examined the relevance of agricultural extension services on crop farming in Kogi West, Kogi State, Nigeria. Data were obtained with the use of structured interview administered on 112 farmers who were sample for the study. Descriptive statistics as well as the independent t-test statistics were employed for the analysis. The result of the analysis revealed that agricultural extension service has significant positive impact on crop farming.

There is no doubt that extension workers are useful tools for crop farmers. It should be noted that for them to succeed their services must be: for all elements of the rural community, builds self sufficiently on the recipients, based on the existing need of the community: based on people interest and needs; uses democratic processes in information dissemination; win the confidence and support of community leaders; and where several reinforcing and complementary activities are aimed at reaching an objectives. The extension workers must also be resourceful creative and innovative, have good common sense, be willing to invest his life for the betterment of the rural people, have confidence in his knowledge and skills and be willing to learn the ways of the farmers and associate with them as equals.

Statement of the problem

Over the years much emphasis has been laid on increase food production by crop farmers to ensure food security. To this end the government including international agencies came up with programmes that may contribute to increase food production. Both the government and international agencies such as World Bank from time to time provide grant, loans and other incentives to farmers to improve food sufficiency among the rural farmers. Government policies has encourage the use of new/modern technologies in agriculture and the use of external inputs. This policies though has contributed to increase food production among the crop farmers thus ensuring food security, but most farmers are still ignorant of these policies. Moreso, farmers who apply agrochemical, such as nitrate fertilizers, herbicides and pesticides to their crops does so without considering the adverse consequences of this development to the environment and their health.

The government and other concerned bodies have not relented effort in creating awareness among crop farmers in the study area but it seems that the effort made so far by these concerned bodies have failed to provide the expected outcome. It is therefore based on the above that this study investigate the role of extension workers in creating environmental awareness among farmers on sustainable crop farming in Ogoja local government area of Cross River State, Nigeria.

Purpose of the study

The purpose of this study is to investigate the extent to which extension workers assist in creating environmental awareness among farmers on sustainable crop farming in Ogoja Local Government Area of Cross River State Nigeria. The study specifically seeks to;

1. Examine the extent to which environmental awareness creation through the extension workers influence sustainable crop farming in Ogoja Local Government Area of Cross River State, Nigeria.
2. To ascertain the extent to which application of various techniques by extension workers in information dissemination influence sustainable crop farming in Ogoja Local Government Area of Cross River State, Nigeria.

Hypotheses

The following hypotheses were formulated to guide the study

1. Environmental awareness creation through extension workers does not significantly influence sustainable crop farming in Ogoja Local Government Area of Cross River State, Nigeria.
2. Application of various techniques by extension workers in information dissemination do not significantly influence sustainable crop farming in Ogoja Local Government Area of Cross River State, Nigeria.

METHODOLOGY

The survey research design was adopted in this study. This design was most preferred because the study drew a representative sample from a large population in order to describe the existing phenomena in the population. Ogoja Local government Area located in he Northern Senatorial district of Cross River State was used for the study. A sample of 791 farmers from Ogoja local government area was drawn from the population of 7,910 farmers using stratified and simple random sampling techniques. The populations of the study consist of adult male and female from the ages of 18 years and above. The questionnaire titled “The Role of Extension Workers in Creating Environmental Awareness Among Farmers on Sustainable Crop Farming” (REWCEAAFSCF) was used for data collection. The instrument was validated by expert in test and measurement, Faculty of Education University of Calabar, Nigeria. Split half reliability method was adopted to ascertain the reliability estimate of the instrument. The questionnaire was administered by the researchers with the help of two trained research assistants. The data obtained was analyzed using simple regression statistics and one way analysis of variance (ANOVA).

RESULTS

Hypothesis one

Environmental awareness creation through extension workers in information dissemination does not significantly influence sustainable crop farming in Ogoja Local Government Area of Cross River State, Nigeria. The independent variable in this hypothesis is environmental awareness creation through extension workers, while the dependent variable is sustainable crop farming. Simple regression analysis was employed to test the hypothesis. The result of the analysis is presented in Table 1.

Table 1

Simple regression result of the prediction of extension workers and sustainable crop farming (N=791)

R	R square	Adjusted R square	Std. error of the estimate		
742(a)	.551	.550	2.09089		
	Sum of sq	Df	Mean square	F	Sig
Regression	4224.953	1	4224.53	966.404*	.000(a)
Residual	3449.373	789	4.372		
Total	764.326	790			

a Dependent variable: sustainable crop farming

b Predictors: (constant) environmental awareness creation through extension workers

The result of the analysis as presented in table 1 above shows that the prediction of extension workers on sustainable crop farming produced an adjusted R² of .550. This indicates that the extension workers accounted for 55% of the determinants of sustainable crop farming in the study area. The findings is a critical indication that environmental awareness creation through extension workers is relatively high in the area of the study. The f-value of the analysis of variance (ANOVA) obtained from the regression table was f=966.404 and the sig value of .000 (or P<.05) at the degree of freedom (df) 1 and 789. The implication of this result is that extension workers are significant prediction of sustainable crop farming

Hypothesis two

Application of various techniques by extension workers in information dissemination do not significantly influence sustainable crop farming in Ogoja Local Government Area of Cross River State, Nigeria. The independent variable in this hypothesis is application of various technique by extension workers, while the dependent variable is sustainable crop farming. Simple regression analysis was employed to test the hypothesis. The result of the analysis is presented in Table 2

Table 2

Simple regression result of the prediction of application of various techniques by extension workers and sustainable crop farming (N=791)

R	R square	Adjusted R square	Std. error of the estimate		
.590	.348	.347	2.51780		
	Sum of sq	Df	Mean square	F	Sig
Regression	2672.586	1	2672.586	421.587*	.000(a)
Residual	5001740	789	6.339		
Total	7674.326	790			

a Dependent variable: sustainable crop farming

b Predictors: (constant) application of various techniques

The result of the analysis as presented in Table 2 shows that the prediction of applicable of various techniques by extension workers on sustainable crop farming produced an adjusted R² of .347. This indicates that the various techniques applied by extension workers accounted for 34.7% of the determinants of sustainable crop farming in the study area. The findings is a critical indication that application of difference techniques by extension workers is relatively high in the area of the study. The f-value of the analysis of variance (ANOVA) obtained from the regression table was f=421.586 and the sig value of .000 (or P<.05) at the degree of freedom (df) 1 and 789 as seen in Table 2. The implication of this result is that application of various techniques by the extension workers is a significant prediction of sustainable crop farming

DISCUSSION OF FINDINGS

The result of the first hypothesis revealed that environmental awareness creation through the extension workers significantly influence sustainable crop farming in the study area. The finding is in line with the view of Ukpong, Ntia, Obot and Usang (2010) who contented that it is the responsibility of the extension worker or agent to plan, organize and execute environmental education aimed at educating the peasant farmers on issue such as self-health care, care for animal, proper application of agro-chemicals to minimize all kinds of pollutions.

Pretty (2015) on the other hand advocated the use of regenerative and resources technologies and practices that will bring both environmental and economic benefit to farmers communities and nations. He maintained that in areas where regenerative technologies is adopted agricultural yields improve. He concludes that extension workers should train farmers on the use of resources conserving technologies such as integrated pest management soil and water conservation nutrient recycling, multiple cropping and waste recycling.

The result of the second hypothesis revealed that application of various techniques by extension workers in information dissemination influenced sustainable crop farming in the study area. This findings is supported by Oladeji (2011) who maintained that the use of various methods to disseminate information due to limited number of extension will improve the perception of workers in the rural areas. He thus suggested the use of advertisement through the news paper and other media to disseminate agricultural information to the larger farming population. He further advocated the creation of agricultural farm centers in disseminating information to farmers on sustainable crop farming. He opined that the dearth of agricultural information flow is principally responsible for reduce farming outputs and storage of farm produce thereby resulting to food insecurity.

CONCLUSION

The role of extension workers in creating environmental awareness among farmers on sustainable crop farming cannot be overemphasized. It is however difficult to embark on such services but when extension services is effectively and efficiently carried out among the rural farmers in the area, it will help them to improve their knowledge on the use of modern technologies in agriculture; embark on agro forestry, change the perception of farmers; assist them with useful information that will help them discard the old method of farming, increase their economic status and adopt the use of external output and agro-chemicals in a sustainable manner. That will help to improve their out puts and also sustain the environment.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Extension workers should (as a matter of necessity) do everything possible to create environmental awareness among farmers on sustainable crop farming.
2. Extension workers should adopt various techniques in information dissemination that will help farmers to increase their farm produce thus resulting in food security.
3. The government should as a matter of urgency employ the service of extension workers to disseminate useful information to farmers on sustainable crop farming.

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