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Analysis of Rural Farmers cassava Production programme for food security in Benue and Kogi State, Nigeria

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ABSTRACT

Evaluating rural farmer's Cassava Production Programme for food security. Survey research design was adopted for this study. Three objectives, threes research questions and one hypotheses were formulated for this study. The population of the study was 12, 0122 made up of 119998 registered farmers and 124 facilitators from Benue and Kogi states. The sample population for the study was 392 (262 from Benue and 130 from Kogi states). Stratified proportional sampling technique in the ratio of 2:1 (Benue and Kogi) was used to arrive at 262 respondents from Benue state and 130 respondents from Kogi state making a total of 392. A questionnaire titled: Cassava Production Programme Evaluation Questionnaire (CPPEQ) was developed to guide the study and used for data collection. The questionnaire was administered by the researcher with the help of four research assistants. 392 copies of the questionnaire were administered and all the questionnaires were retrieved and analyzed. Mean was used to answer the research questions 1, 2 and 3, while t-test was used to test the hypothesis at 0.05 level of significant. The major findings of the study revealed that provision of improved varieties, training of farmers on the agronomic practices of cassava, distribution of inputs to the farmers are some of the relevant objectives of the Cassava Production Programme. Also some challenges faced by cassava producers are shortage of cassava stems and unavailability of mobile telephones to some farmers among others. From the findings of the study, the researcher concluded that shortage of cassava stems may hinder the success of the programme. It was therefore recommended among others that the laid down objectives of the Cassava Production Programme as stated by the Federal Government in collaboration with IFAD should be strictly adhered to by the stakeholders.

Keyword: Rural Farmers, Cassava Production Programme and Food Security

Introduction

The word "rural" connotes a place with agricultural orientation; the houses are farm houses, barns, sheds and other structures of similar purposes. In the opinion of Olisa in Haruna (2012), population is the main characteristic that differentiates rural from urban areas, especially in the developing countries. In this regard, an area with a population of 20,000 people and below is classified as a rural area. Farmers associated with the above characteristics are rural farmers. Similarly, Food Agricultural Organization (2015), views rural farmers as those that contribute to improving resource efficiency, strengthening resilience and securing social equity of agriculture and food systems in order to ensure food security. Rural farmers can also be referred to as farmers living in the rural areas, most of them have low level of education, their major occupation is subsistence farming and they are generally characterized by poverty, poor health condition and ignorance (Nicholas-Eze, 2017). Majority of these rural farmers are directly or indirectly involved in cassava production and multiplication as a means of survival. Cassava production programme refers to the activities and instructions, including human and materials involved in boosting Cassava increase and dissemination to rural farmers (Aniagolu, 2014).

The Federal government introduced the Cassava production Programme in 2001 in order to boost cassava production in Nigeria; this was done in conjunction with the Federal Government and International Fund for

Agricultural Development (IFAD). The Cassava Production Programme aim at promoting cassava utilization as a commodity-based approach against food insecurity and to assist alleviates poverty among rural farmers (Adeniji, 2000). Falana, (2012) asserts that various agricultural development programmes and policies have been developed and executed by successive administrations in Nigeria from early 60s to date with little or no impact on the farmers which are the beneficiaries. Therefore, the success depends largely on the government and the rural farmers involved in the cassava production programme.

Cassava (*Manihot esculenta*) has its origin in Latin America where it has been grown by the indigenous Indian population for at least 4000 years (Akinpelu *et al* 2011).After the discovery of Cassava by the Americans, European traders took the crop to Africa as a potentially useful food crop; later it was also taken to Asia to be grown as a food crop and for the extraction of starch. Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO in Wombo and Ngbongha, 2021,). This definition is based on availability, access and utilization, underlined by stability (Brussow, Fabe & Grote, 2017). These four components have to be accomplished to maintain or achieve food security. Moreover, food security can be looked at on different levels such as global, national and household food security. Rural farmers need a better standard of living by ensuring adequate availability of food for them and for sale. The essence of Cassava Production Programme by the Federal Government of Nigeria is alleviating poverty and increasing income generation among farmers. But since the introduction of the programme in 2001 till date, majority of the farmers still make use of the old varieties of cassava that does not produce much and had late maturity stage as observed by the researcher. More so, the cost of gari and cassava flour has greatly increased Farmers attributed this to shortage of cassava production. It could be due to unsuccessful cassava production programme that had lead farmers to continue planting the local varieties that does not give good yield, late maturity and inadequate nutrient content compared to improved variety introduced by the government which is highly productive, early maturity and more nutritious. It on this note the researcher is poise to evaluate Rural Farmers cassava Production programme for food security in Benue and Kogi State, Nigeria.

Objectives

The main objective is to evaluate Rural Farmers Cassava Production Programme for food security in Benue State, Nigeria. The specific objectives are to:

1. ascertain the extent of the objectives of the Cassava Production Programme to rural farmers in Benue and Kogi State, Nigeria.
2. ascertain how Cassava Production Programme affects rural farmers in Benue and Kogi State, Nigeria.
3. identify challenges faced by the rural farmers in adopting the Cassava Production Programme in Benue and Kogi State, Nigeria.

Research Questions

The following research questions guide the study

1. To what extent are the objectives of cassava production proramme relevant to the rural farmers Benue and Kogi State, Nigeria?
2. What is the effect of the Cassava Production Programme on rural farmers in Benue and Kogi State, Nigeria?
3. What are the challenges faced by rural farmers in trying to adopt the Cassava Production Programme in Benue and Kogi State, Nigeria?

Research hypothesis

The study has the following null hypothesis:

1. There is no significant difference in the mean responses of farmers and extension agents in Benue and Kogi States on the extent of the relevance of the objectives of the Cassava Production Programme among rural farmers in Benue and Kogi State, Nigeria.

Methodology

Survey research design was adopted for this study. The study was conducted in Benue State. Three objectives, three research questions and one hypothesis guided the study. The population of the study was 80,010 registered farmers and 67 facilitators from Benue state and 40,011 registered farmers and 34 facilitators from Kogi state which consist of extension workers, traditional rulers, leaders of religious groups and co-operative societies, leaders of Non-Governmental and Community Based Organizations among others. The sample population for the study was 392

(262 from Benue and 130 from Kogi states), using the Taro Yamen's formula, Stratified proportional sampling technique was used to arrive at 262 respondents from Benue state and 130 respondents from Kogi state making a total of 392. An average of 65 respondents were used in each of the four local government areas in Benue state while an average of 32 respondents were used in each of the four local government areas in Kogi state. The instrument used for data collection was a questionnaire title: Cassava Production Programme Evaluation Questionnaire (CPPEQ) was developed to guide the study and used for data collection. The items had 4 – point rating scale of Highly relevant / Highly adequate / Strongly agree / Very high extend, Relevant / Adequate / Agree / High extent, Not relevant / Inadequate / Disagree / Low extent, Highly not relevant / Highly inadequate / Strongly disagree / Very low extent and with values of 4, 3, 2 and 1 respectively. The instruments was face validated by seven experts, two from the Department of Agricultural Education, two from the Department of Science Education, two from the Department of Agricultural Economics and Extension and one from the Department of Educational Foundations and General Studies, all from the Federal University of Agriculture, Makurdi, Benue State. The opinion of the experts led to the final instruments which were used for the study. The reliability of the instruments was determined through a trial testing using 20 rural farmers involved in cassava production programme out of the study area. The data obtained from the trial testing were subjected to reliability analysis using Cronbach Alpha method which yielded a reliability coefficient of .092 indicating that the instrument is reliable for the study. The researcher employed four research assistant in the administration of the questionnaire to the respondents. 392 copies of the questionnaire was administered and all the questionnaires were collected and analyzed using mean and standard deviation to answer the research questions while t-test was used to test the hypothesis at 0.05 level of significant. The mean response of 2.50 was used as decision making. Item with a mean of 2.50 and above was considered relevant, effective, agreed, or adequate, while any item with a mean score of less than 2.50 was considered as not relevant, not effective, disagreed or inadequate.

Results

The results are presented in line with the research questions that guided the study.

Research Question 1: To what extent is the relevance of objectives of cassava production proramme relevant to the rural farmers Benue and Kogi State?

Table 1: Mean and Standard Deviation on Extent to Which the Objectives of Cassava Production Programme Are Relevant to the Rural Farmers (n = 392: 291 farmers and 101 facilitators)

S/N	Items	$\bar{X}1$	SD_1	$\bar{X}2$	SD_2	$\bar{X}g$	SDg	Remark
1	Provision of sufficient food among rural farmers	3.87	.54	3.66	.47	3.82	.53	Highly relevant
2	Provision of improved variety of Cassava stems and distribution of same to farmers	3.59	.54	3.88	.32	3.67	.51	Highly relevant
3	Training farmers on the agronomic practices of the cassava.	3.60	.62	3.55	.50	3.59	.59	Highly relevant
4	Distribution of inputs to the farmers	3.29	.90	3.66	.47	3.39	83	Averagely relevant
5	Carrying out supervisory visits to the multiplication farms.	3.60	.49	3.33	.47	3.53	.45	Highly relevant

N= number of respondents $\bar{X}1$= mean of farmers, $\bar{X}2$= mean of facilitators, SD = standard deviation, $\bar{X}g$= grand mean of respondents SDg = grand Standard deviation

Data in Table 1 showed that 4 out of the 5 items had their mean values ranged from 3.53 to 3.82, indicating that their mean values were within the real limit of 3.50 and 4.00. This showed that the respondents agreed that the 4 objectives of cassava Production programme were highly relevant to the rural farmers in Benue and Kogi States. The data also showed that 1 out of the 5 items had its mean value as 3.39, indicating that the mean value was within the real limit of 2.50 and 3.49. This showed that the respondents agreed that the 4th objective of cassava Production programme was averagely relevant to the rural farmers in Benue and Kogi States. The standard deviation ranged from .45 to .83 which was an indication that the respondents were not too far from the mean and from one another in their responses on the extent to which the objectives of cassava Production programme were relevant to the rural farmers in Benue and Kogi States.

Hypothesis 1:
Responses of farmers and facilitators on the relevance of the objectives of the Cassava Production Programme among rural farmers

Table 2: t-test Analysis on the Relevance of the Objectives Of the Cassava Production Programme Among Rural Farmers

Status	N	Mean	Std. Deviation	Std. Error Mean	Df	t-cal	Sig.	Remarks
Farmers	291	3.87	.55	.03	390	3.32	.001	S, R
Facilitators	101	3.67	.47	.05				

N = Number of respondents, STD = Standard deviation, DF = degree of freedom, t-cal = t-calculated, Sig. = P-value, significant at P≥0.05, NS = Not significant, NR = Not rejected.

Table 2 shows a p-value of .001 which is less than the alpha value of 0.05. This indicates that there was a statistical significant difference in the mean ratings of farmers and facilitators on the relevance of the objectives of the cassava production programme among rural farmers in Benue and Kogi States. Therefore, the hypothesis of no significant difference for the two groups of respondents on the relevance of the objectives of the Cassava Production Programme among rural farmers in Benue and Kogi States was rejected.

Research Question 2: What is the effect of the Cassava Production Programme on rural Farmers in Benue State?

Table 3: Mean and Standard Deviation on Effects of the Cassava Production Programme on rural Farmers in Benue State (n = 392: 291 farmers and 101 facilitators)

S/N	Items	$\bar{X}1$	SD_1	$\bar{X}2$	SD_2	$\bar{X}g$	SDg	Remark
1	Improved the socio-economic status of the farmers	3.38	.85	3.66	.47	3.45	.78	Agreed
2	Provision of improved varieties to boost cassava production	3.43	.85	3.23	.41	3.38	.77	Agreed
3	Training of farmers on better agronomic practices of the cassava	3.50	.66	3.22	.41	3.43	.62	Agreed
4	Reduction of wastages because of new technologies to process cassava into different products	3.26	.85	3.21	.41	3.25	.76	Agreed
5	Maximum use of land because cassava can produce better than other crops even when the land is exhausted	3.45	.79	3.00	.66	3.33	.79	Agreed
6	Maximization of profit because improved varieties mature earlier and can be planted more than once in a year	3.19	.70	3.33	.47	3.23	.65	Agreed
7	Earning of foreign exchange because cassava can be processed into many products and exported to other countries	3.42	.49	3.55	.49	3.45	.50	Agreed
8	Reduced rural-urban migration because many rural youths now engage in cassava production.	3.01	.97	3.33	.47	3.09	.88	Agreed
9	Provision of basic infrastructures by government to boost cassava production	3.11	.87	3.22	.41	3.14	.78	Agreed

N= number of respondents $\bar{X}1$= mean of farmers, $\bar{X}2$= mean of facilitators, SD = standard deviation, $\bar{X}g$= grand mean of respondents SDg = grand Standard deviation

Data in Table indicated that all the 9 items had their mean values ranged from 3.09 to 3.45 which were above the cutoff point of 2.50. This showed that the respondents agreed that all the 9 items were the impact of the Cassava production Programme on rural farmers in Benue and Kogi States. The standard deviation ranged from .50 to .88 which was an indication that the respondents were not too far from the mean and from one another in their responses on impact of the Cassava Production Programme on rural farmers in Benue and Kogi States.

Research Question three: What are the challenges faced by rural farmers in trying to adopt the Cassava Production Programme in Benue State, Nigeria?

Table 4: Mean and Standard Deviation on Challenges Faced by Rural Farmers in Adopting the Cassava Multiplication Programme Practices (n = 392: 291 farmers and 101 facilitators)

S/N	Items	$\bar{X}1$	SD_1	$\bar{X}2$	SD_2	$\bar{X}g$	SDg	Remark
1	Shortage of cassava stems supply.	3.02	.97	3.00	.66	3.02	.90	Agreed
2	Lack of mobile telephones in some farmers.	2.90	.87	3.66	.47	3.10	.85	Agreed
3	Lack of network coverage in some communities.	2.67	.79	3.66	.47	2.92	.85	Agreed
4	Constant breakdown of vehicles during the distribution of materials.	2.68	.93	2.88	.74	2.73	.89	Agreed
5	Bad road networks in some communities hamper effective supervision of multiplication farms.	2.74	.96	3.44	.50	2.92	.92	Agreed
6	Nonchalant attitude of the farmers.	3.08	.85	3.21	.41	3.12	.76	Agreed
7	Illiteracy of peasant farmers.	3.04	.96	3.22	.41	3.09	.86	Agreed
8	Inadequate number of extension agents.	3.55	.73	3.21	.41	3.47	.68	Agreed
9	Lack of incentives to both farmers and facilitators.	3.38	.87	3.21	.41	3.34	.78	Agreed
10	Inadequate capital needed for the training of personnel and running of extension services.	3.36	.87	3.33	.47	3.35	.79	Agreed

N= number of respondents $\bar{X}1$= mean of farmers, $\bar{X}2$= mean of facilitators, SD = standard deviation, $\bar{X}g$= grand mean of respondents SDg = grand Standard deviation

Data in Table 3 revealed that all the 10 items had their mean values ranged from 2.73 to 3.47 which were above the cutoff point of 2.50. This showed that all the 9 items were the challenges faced by rural farmers adopting the Cassava Production Programme in Benue and Kogi States. The standard deviation ranged from .68 to .92 which was an indication that the respondents were not too far from the mean and from one another in their responses on the challenges faced by rural farmers adopting the Cassava Production Programme in Benue and Kogi States

Discussions of Results

The result on Table one revealed that 4 out of the 5 items had their mean values ranged from 3.53 to 3.82, indicating that their mean values were within the real limit of 3.50 and 4.00. This showed that the respondents agreed that the 4 objectives of cassava multiplication programme were highly relevant to the rural farmers in Benue and Kogi States. The data also showed that 1 out of the 5 items had its mean value as 3.39, indicating that the mean value was within the real limit of 2.50 and 3.49. The finding is in line with Kampala and Asia (2002) who said that the objectives of production and distribution of improved planting material of cassava are to establish and improve cassava production and to develop effective and sustainable systems of delivery of improved varieties to farmers. Also cassava production in the country has been increasing among villages (Aniagolu, 2012). This is to say that the adoption of the high yielding cassava stems will help to shift the problems of food insufficiency to food sufficiency in the country. Asiabaka (2009) added that, sustainable food security programme requires programme intervention for efficient service delivery to the target group with sensible institutional and capacity building.

Table two shows that Cassava Production Programme has a positive effect on the lives of the rural farmers. Some of these effects include: improved socio-economic status of the rural farmers, provision of improved varieties to boost cassava production, and maximization of profit. This is in line with Simonyan and Omolehin (2012) who opined that a programme of such nature always increase the incomes and productivity of the rural inhabitants as a means of meeting up with the millennium development goals (MDGs) on food sufficiency and poverty eradication. They also added that the introduction of fadama project has also ensured that there is availability of cassava all year round. Odoemenem and Otanwa (2011) analyzed the economics of cassava production and concluded that investing in cassava production enterprise is profitable. Yunana, Abubakar and Francis (2013) also stated that, agricultural programmes have positive effects on rural farmers, but its benefits will be felt more if the programmes last longer.

Table four indicated that Cassava Production Programme has some challenges ranging from shortage of cassava stems supply, unavailability of mobile telephones to some farmers, lack of network coverage in some communities, illiteracy of peasant farmers, inadequate number of extension agents among others. The finding is in agreement with Okojie (2003) and Anuebunwa et al, (2008) who stated that land degradation, infrastructure, financial problems and

ignorance respectively are some of the challenges faced by rural farmers in crop production in general and the adoption of Cassava Production Programme in particular. To support this assertion, Carmara (2002) opined that, the problem of poor rural roads leading to markets reduced the active participation of farmers on root crop production as transport cost exceeds the value of the unsold crops. While Nworgu (2006) reported that project evaluation is another challenge that, project like cassava production, yam mini set technique transfer seem to be eroded of this managerial tool, hence, their ineffective implementation.

Conclusion

From the findings of the study, the researcher concluded that provision of improved varieties, training of farmers on the agronomic practices of the cassava, distribution of inputs to the farmers are some of the relevant objectives of the Cassava Production Programme. Also some challenges faced by cassava producers are shortage of cassava stems supply, unavailability of mobile telephones to some farmers, lack of network coverage in some communities, bad road networks in some communities hamper effective supervision of production farms, illiteracy of peasant farmers, inadequate capital to carry out cassava production are some of the challenges faced by cassava farmers.

Recommendations

Based on the findings of the study the researcher made the following recommendations:

1. The laid down objectives of the Cassava Production Programme as stated by the Federal Government in collaboration with IFAD should be strictly adhered to by the stakeholders.
2. To an extent, the Cassava Production Programme has improved the standard of living of the rural farmers, but there is need for stakeholders to do more in order to sustain development and food security among rural farmers.
3. The three tiers of Government should collaborate with NGOs, CBOs and private organizations to look into the problems faced by farmers trying to adopt the Cassava Production Programme.

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