Assessment of Extension Service Delivery on Improved Cassava Technologies Among Cassava Farmers in Osun State, Nigeria

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Abstract

Extension service delivery is too often merely seen as a vehicle for spreading scientific and technical progress and technology transfer. In the real sense, however, dissemination of knowledge is not a one way affair from scientists to producers. The study was conducted to assess extension service delivery on improved cassava production technologies among cassava farmers in Osun State, Nigeria. Multistage sampling procedure was employed in the selection of 312 cassava farmers. Data were summarized with frequency counts, percentages, mean and correlation coefficient. Results showed that the extension services offered to famers in the study area included fertilizer procurement, agrochemicals, cooperative facilities, social networks, tractor hiring services, credit facilities, improved planting materials and marketing. The mean age of the cassava farmers was 50.57 years; majority (90%) of whom were males and married (95%) with mean cassava farm size of 3.12 hectares and mean cassava sales income of ₦56, 333 per annum. Almost three-quarters of the respondents (72%) expended less than ₦15, 000 on adopted improved technologies. The mean percentage awareness of the technologies by farmers was high while farmers had medium level of usage. The level of satisfaction of farmers with the services provided by the extension agency was medium and extension/advisory service was the most satisfactory of the extension services delivered to cassava farmers. It is therefore recommended that efficient extension services should be rendered by competent extension agents who are under continuous training and retraining programmes and continuously supported by a dynamic system of monitoring and evaluation and good government policy.

Key words: Agrochemicals, advisory services, awareness, extension agents, satisfaction

Introduction

Agriculture occupies a key position in the Nigerian economy judging by its critical role of providing food security, provision of employment, revenue generation and provision of raw materials for industrial development. Cassava, *(Manihot esculenta* Crantz*)* is the third most important food crop in the tropics after rice and maize, and is consumed daily by up to one billion people, mostly in Sub-Saharan Africa (Eugene and Otim-Nape, 2012). Global cassava output in 2011 was expected to rise by over 6% from the previous year (2010), and to surpass 250 million metric tons for the first time (FAO, 2011).As a

result of this realization, Nigeria has a well developed agricultural research system with far reaching improved technologies capable of boosting farmers output and enhancing economic development. In order to ensure the effectiveness of the research system, a number of institutional and government agencies have been established to ensure that farmers get to know and adopt improved agricultural technologies that are relevant to their needs and situations. These agencies facilitate the dissemination of improved agricultural technologies through various methods. The role of agricultural extension agents is very crucial in improving agricultural development in Nigeria. It does this by facilitating the education of farmers to improve their skills, knowledge and attitude as related to agricultural development. It transmits the result of research on how to solve the problems of agriculture to farmers and encourages the application of these and other improved technical knowledge on agriculture by farmers. It takes the problem of farmers to research institutions for solution. It utilizes demonstration farms, farm visits, audio visuals and other methods in teaching farmers (Jibowo, 2000). Extension is too often merely seen as a vehicle for spreading scientific and technical progress and technology transfer. In the real sense, however, dissemination of knowledge is not a one way street from scientists to producers. Farmers' own knowledge must be collected, analyzed, capitalized on, propagated and disseminated (Cees, 2004). However, there are numerous problems facing the agricultural extension service. First and foremost, most of the farmers are illiterate, and to the extent that it is difficult for them to comprehend all the ideas being communicated to them. Even

after communicating the ideas, some of the farmers cannot subsequently translate the ideas to practice. In the same vein, most of the farmers are conservationists that they are not prepared to accept any positive changes. Furthermore, the farmers are financially poor to procure the needed inputs (Umebadi, 2000).

The extension agents also have their problems and challenges. They are still few in number with low extension agents to farmers' ratio. While FAO recommends one extension agent to 800 farmers, the ratio in Nigeria ranges from 1:500 in Niger State to 1:5800 in Lagos State with national average of 1:1986 (Ihimodu, 2002) They are also poorly motivated in terms of remuneration and provision of transport facilities to visit the farmers. They live far away from the farmers thereby minimizing interaction between them and the farmers. Jibowo (2000) had earlier asserted that if these and similar problems were solved, extension could become an instrument for effective agricultural development. On a general note, Omokhaye (2000) reported that the main problem of agricultural development in Nigeria is not the lack of technologies and scientific findings needed for economic and social change, but inadequate information on the usage of the improve technologies. Odebode (2008) also claimed that in many developing countries, including Nigeria, lack of appropriate technological and scientific knowledge application limits agricultural and economic progress. Idachaba (1995) confirmed that there are enough packages on the technological shelves and that the missing link is an effective agricultural system to disseminate available technologies. Therefore this study was carried out to assess extension service delivery on

improved cassava production technologies in Osun State.

Objectives of the study were to:
1. Assess the socio-economic characteristics of cassava farmers in the study area;.
2. Investigate the agricultural extension services available to cassava farmers in the study area and to, and;
3. Determine cassava farmers' level of satisfaction with the services

Methodology

Multistage sampling procedure was employed in the selection of cassava farmers for the study. The first stage involved the selection of 4 Local Government Areas (LGAs) from each of the 3 Agricultural Development Programme(ADP) agricultural zones, making a total of 12 LGAs. At the second stage, two communities were purposively selected from each of the LGAs, giving a total of twenty-four communities. The third stage involved the proportionate sampling of 25 percent of the population of registered ADP cassava farmers in each of the selected communities, giving a total of three hundred and twelve cassava farmers. Data were summarized with frequency counts, percentages and mean.

Measurement of variables
Level of Satisfaction: This is the extent to which a cassava farmer has accepted or is pleased with each of these nine extension services provided viz: extension/advisory service, improved planting materials, agro–chemical, cooperative facilities, social network, tractor hiring services, credit facilities, marketing facilities and fertilizer procurement. Respondents were asked to respond to each of the services on a 5-point satisfaction scale, viz: very satisfied, (5 points); satisfied, (4 points); undecided, (3 points); dissatisfied, (2 points) and very dissatisfied, (1 point). Possible maximum scores was 45, while the minimum was 5.
Level of awareness of the farmers on improved cassava production technologies: Thiswas measured on a 4 points scale and scored thus: Experienced (4points), Seen (3), Heard of (2) and Never heard of (1). Possible maximum and minimum scores for each respondent were 52 and 13 respectively.

Results and Discussion

Data in Table 1 and 2 show that the mean age of the cassava farmers was 50.6 years. This analysis shows that 71.2% of the cassava farmers were less than 61 years of age. This indicates that majority of the cassava farmers in the state were within productive age range. Tsoho (2004) reported that young farmers have higher aspiration to accept new technologies than conservative older farmer that always seem to be more satisfied with their traditional methods. Majority (90.1%) of the respondents were male, while 9.9 percent were female. The findings were expected because of the involvement of women in other activities like processing and trading. It may also be attributed to the fact that cassava farming is a male-dominated activity as a result of its physical energy requirements. Majority (95%) of them were married with 87.4% of them belonging to either Christianity or Islamic faiths.

Table 1: Distribution of cassava farmers by their demographic characteristics n = 312

Characteristics	Frequency	Percentage
Age		
≥ 30	19	6.0
31 – 60	222	71.2
Above 60	71	22.7
Mean	50.57	
Standard deviation	12.2	
Sex		
Male	281	90.1
Female	31	9.9
Marital Status		
Single	12	3.8
Separated	1	0.3
Married	196	95
Widowed	3	0.9
Religion		
Christianity	170	54.4
Traditional religion	8	2.6
Islam	102	33.0
Other (free thinkers)	32	10.0
Level of Education		
Primary	52	16.6
Secondary	80	25.6
Tertiary	49	15.8
No schooling	131	42
Mean	9.8	
Standard deviation	6.21	
Farm size (ha)		
Less than 1	82	26
1 – 2.99	71	23
3 – 4.99	85	27
5 and above	74	24
Mean	3.12	
Standard deviation	3.08	

Source: *Field Survey*, 2011

Results in Table 2 show that almost half (49.7%) of the respondents did not have contact with extension. This might be due to the fact that extension agents were not well equipped. as a result of inadequate training and funding. This agrees with the finding of Adesoji (2009) that there was low level of extension contact among fish farmers in Osun State. About half (53.2%) of the respondents claimed not to have attended any extension-training meeting. Majority (72.4%) of the cassava farmers expended less than ₦15, 000 on adopted improved technologies. This may be due to the fact that majority of them were small scale farmers with mean farm size of 3.12 hectares. According to the criteria set by Olayide *et al.* (1980) that all the farmers operating on less than 5 hectares of land are small-scale farmers. Majority of cassava farmers sourced their farming capital from their personal incomes and other farmers. Only 35 percent of the farmers sourced their

farming capital from agricultural banks. The mean income was ₦56, 333.175 per annum. From Table 2, it could be seen that more than half (56.0%) of the farmers were aware of the improved cassava production technologies through other farmers. A total of fifty-eight percent (58.0 %) of the farmers were formally educated. This may serve as an impetus to effectiveness of improved technologies, because according to Jibowo (2000), it is often easier for an educated person to be favourably disposed towards improved technologies because such a person could give a reasonable consideration to its adoption. Rogers and Shoemaker (1997) also stressed that education is an important instrument for a successful implementation of technologies for profitability on the part of farmers.

Table 2: Distribution of cassava farmers by their socio-economic characteristics   n=312

Characteristics	Frequency	Percentage
Extension contact		
1 – 4	26	8.3
5 – 8	8	2.5
Above 8	124	39.5
No contact	154	49.7
Mean	18.0	
Standard deviation	34.6	
Extension training attended		
1 – 4	38	12
5 – 8	17	5.4
Above 8	90	29
None	167	53.6
Mean	9.11	
Standard deviation	15.14	
Total expenditure on adopted improved technologies		
Amount (₦)		
Less than ₦15,000	226	72.4
15,000 – 40,000	44	14.4
41,000 – 66,000	20	6.4
Above 66,000	22	7.1
Means	₦17,714.00	
Standard deviation	₦40,317	
Annual Income (₦)		
Less than ₦75,000	71	23
75,000 – 149,000	94	30
150,00 – 224,999	29	9
225,000 – 299,999	31	10
300,000 and above	87	28
Mean	₦56,333.75	
Standard deviation	₦78,761.46	
Sources of Information		
Extension agents	44	14.0
Family members	174	56.0
Radio	50	16
Television	4	1.2
Leaflet/Agric., Newsletter	30	9.6
Salesmen	6	2.0
Newspaper	4	1.2

Source: *Field Survey*, 2011

Improved cassava production technologies disseminated to farmers by extension agents

Data in Table 3 shows the distribution of extension agents that had disseminated improved cassava production technologies to farmers. Majority of the extension agents indicated their involvement in the dissemination of one improved production technology or the other. Ninety-eight percent (98.0%) indicated that they had disseminated improved technologies' choice of land, plant spacing and recommended varieties to farmers, while 96 percent and 94 percent indicated planting technique and planting time to farmers, respectively. Disseminating the improved cassava production technologies to farmers will no doubt enhance the effectiveness of the technologies. A technology that is well disseminated will not only have enhanced acceptability but also effectiveness.

Table 3 Improved cassava technologies disseminated to farmers. N=50

Improved technologies	Frequency	Percentage
Planting spacing	49	98
Recommended varieties	49	98
Planting technique	48	96
Planting time	47	94
Timely harvesting	45	90
Fertilizer application	45	90
Land preparation	44	88
Herbicides application	44	88
Fertilizer rate	43	86
Choice of land	43	86
Supplying	42	84
Weeding technique	42	84
Pesticides application	39	78

Source: *Field Survey*, 2011

Level of awareness of improved cassava production technologies

The results in Table 4 show that 46% of cassava farmers had medium level of awareness of improved technologies, while 33% had high level of awareness. The finding is at variance with Yahaya and Olayide (2006) claim that cassava farmers in Nigeria level of awareness of associated technologies was high. In spite of the rigorous efforts of the extension agents towards dissemination of the improved technologies, farmers' level of awareness was observed to be at the medium level. This is a pointer to the need to arouse the interest of the farmers through combination of several teaching methods that can be useful when interacting with farmers. This is in line with Cees(2004), who submitted that result demonstrations are useful for raising awareness.

Table 4: Level of awareness of improved cassava production technologies

n = 312

Level	Scores	Frequency	Percentage
High	Above12	102	33.0
Medium	3 -12	143	46.0
Low	Below 3	67	21.0
Total		**312**	**100**

Mean = 8.21
Standard Deviation = 4.57

Source: *Field Survey*, 2011

Level of satisfaction of farmers with the services provided by the extension agency
Data in Table 5 show that majority (82.4%) of the cassava farmers had medium level of satisfaction with the services provided by the extension agency. Also, as shown in Table 6, the result of the rank order of each of the extension agencies services showed that advisory services ranked first with weighted mean score of 3.34, while fertilizer procurement ranked second with mean score of 1.82. This analysis shows that farmers are more satisfied with the extension/advisory services of the extension agency probably due to the fact that it might be the major and most effective service being rendered by the extension agency. It may also probably be due to the fact that farmers do not have to pay for it. The analysis also shows that fertilizer procurement and agrochemical also ranked high.

Table 5: Distribution of cassava farmers by level of satisfaction with the services provided by the extension agency

n = 312

Level of satisfaction	Scores	frequency	Percentage
High	Above 21	28	9.23
Medium	9 – 21	258	82.4
Low	Below 9	26	8.3
Total		**312**	**100**

Mean = **15.60**
Standard deviation = 6.58
Source: *Field Survey*, 2011

Table 6: Distribution of cassava farmers showing the rank–order of satisfaction with the services provided by the extension agency

	Services	Weighted Mean Score (WMS)
1.	Extension/Advisory services	3.34
2.	Fertilizer procurement	1.82
3.	Agrochemicals	1.68
4.	Cooperative facilities	1.57
5.	Social network	1.49
6.	Tractor hiring services	1.43
7.	Credit facilities	1.41
8.	Improved planting Materials	1.38
9.	Marketing facilities	1.36

Source: *Field Survey*, 2011

Conclusions and Recommendations

The results of this study show that the following extension services were offered to famers in the study area: fertilizer procurement, agrochemicals, cooperative facilities, social networks, tractor hiring services, credit facilities, improved planting materials and marketing. The level of satisfaction of farmers with the services provided by the extension agency was medium and extension/advisory service was the most satisfactory of the extension services delivered to cassava farmers. It is therefore recommended that efficient extension services should be rendered by competent extension agents who are under continuous training and retraining programmes and continuously supported by a dynamic system of monitoring and evaluation and good government policy. Furthermore, more extension agents should be recruited to reduce the extension- farmer ratio. Government should also give incentives to the study of agricultural extension in universities and colleges of education through scholarship programmes.

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