



## **Assessment of Farmers Preference for Agricultural Extension Service Delivery in Bichi**

### **Local Government Area, Kano**

**Sani, U. and Abubakar, M.A.**

**Department of Agricultural Economics and Extension, Bayero University Kano, Nigeria**

#### **ABSTRACT**

This study assessed farmer preference for agricultural extension services delivery in Bichi local government area of Kano State, Nigeria. Multistage sampling technique was employed in the selection farmers. The first stage involved purposive selection of three (3) ward due to concentration of farmers working in group. The second stage involved simple random selection of 83 farmers, while snowball method was used and identified sixteen (16) extension agents working in the area. The primary data was obtained using structured questionnaires. The data was analyzed using descriptive and inferential (binary logic regression model) statistics. The result reveals the approaches used by extension agents in their services delivery to be farmer group interaction (87.5%) as well as training and visit (87.5%) approach. The services offered to farmers were proper and recommended methods of fertilizer application (93.8%), use of improved seed (93.8%), linking farmers with agro input dealers (93.8%), pre-season training (93.8%) conduct of demonstration plots (93.8%) and dissemination of innovation that come along the way (100%). The findings also show that educational status of the respondents has significant influence on access (-0.715) and use (-0.764) of the extension services provided at one percent probability level respectively while (42.2%) of farmers showed preference to advice rendered on proper and recommended methods of fertilizer application. It is therefore concluded that farmer's group training and training and visit were the most approaches used by extension agents in their services delivery with services delivered as effective to some while ineffective to others with most preference to different methods of fertilizer application. It is therefore recommended that extension service should be rendered as at when due putting in to consideration the need of the farmers.

Key words: Assessment, Preference, Farmers, Agriculture, Extension Delivery

Corresponding e-mail and phone no: ([saniubale51@gmail.com](mailto:saniubale51@gmail.com)) +2348036078427

#### **INTRODUCTION**

Agricultural extension provides farmers the scientific knowledge so that they could solve their problems. It helps farmers to learn about what alternatives that exists in farming so that they can choose the best alternative for themselves for improvement in their livelihood (Bawa, Ani and

Nuhu, 2009). This was achieved through Public agricultural extension services delivery funded and managed by government and private agricultural extension services delivery by private organizations. Some of the specialized public extension schemes implemented in Nigeria include: farm settlement scheme, National Accelerated Food Production Program (NAFPP), launched in 1972, Operation Feed the Nation (OFN) in 1976, River Basin and Rural Development Authorities established in 1976, Green Revolution Program in 1980, The World Bank-Funded Agricultural Development Project (ADP) which was started in 1974, that gave rise to the multi-state agricultural development projects in Nigeria such as agricultural processing, productivity enhancement and livelihood improvement support project among others (Bassey, 2012) while some of the private organizations providing extension services include: the shell petroleum company (Shell Petroleum Extension Project), the British American Tobacco (BAT), Women Farmer Advancement Network (WOFAN) and Sasakawa Global 2000 (Ogunlade, Oladele and Babatunde, 2009).

Several efforts were made over the years and at present to increase the productivity of farmers across various value chains in Nigeria. Some of these efforts were through public extension delivery services, while others were through private extension delivery service. Against this background, governments in recent times have found that they are less able to continue providing all the services previously provided. With cost risings, limited resources and changing in the philosophy of the appropriate extent of government intervention, government of the Federal Republic of Nigeria and States have been slow to increase appropriation for publicly funded activities. Some functions of government have been curtailed, and other has been privatized. Therefore, the public agricultural extension delivery is confronted with a number of possibilities for change (Adejo, Okwu and Ibrahim, 2012). Looking at the limited number of extension personnel in the area as a results of the upper mentioned problems, couple with the increase in number of farmers and the required services for the betterment of their production activities, the study addressed the following objectives to provide an insight on the approaches and preferred extension services that the available extension workers should adopt to be able to provide the needed services to the farmers in the area. The objectives were to:

- i. describe various approaches used in extension service delivery in the study area;
- ii. describe the extension services delivered by public and private organizations;
- iii. determine the socio-economic factors influencing access and use of extension services delivered by public and private organizations;

- iv. determine the effectiveness of public and private extension services delivered; and
- v. describe farmers preferred extension services in the study area.

## METHODOLOGY

### Study Area

Bichi is located in the northwestern part of Kano state Nigeria. It lies between lat.  $11^{\circ}30'$  and  $11^{\circ}5'N$  and lag.  $8^{\circ}30'$  and  $8^{\circ}5'E$ . It shares boundaries in the south-west with Dawakin Tofa, Bagwai in the south-east, Tsanyawa in the north-east, and Kunchi Local Government in the north. It has an area of  $612\text{km}^2$  and a population of 277099 at the 2006 census (NPC, 2006). The estimated population at 2022 will be 432274 at 3.5% annual increase. The soil is generally moderately deep, well drained, and coarse textured surface horizon. The natural vegetation is Sudan savannah type. The climate has the usual features of northern belt of Nigeria. It experiences distinct dry and wet seasons with the average annual rainfall of 611-790mm per annum. Temperature can fall to as low as  $10^{\circ}\text{C}$  and as high as  $30-35^{\circ}\text{C}$ .

The major religion of people in Bichi is Islam and Hausa/Fulani are the predominant language spoken. The economic activities of the people in the area are farming and trading.

### Sampling Techniques

The respondents comprise of farmers and extension agents. Multistage sampling was adopted for the study. Stage 1 involved purposive selection of three (3) wards out of eleven (11) due to concentration of farmers working in groups. Stage 2 involved purposive selection of Ten (10) farmers groups from Bichi ward, five (5) from Muntsira and also five (5) from Kyalli wards due to their functional and activeness as guided by identified extension agents of the area. Stage 3 involved the use of mathematical formula below adopted by Miller and Brewer (2003) to arrive at sample size. While list of the entire extension agents working in the area was collected mounting to sixteen (16) extension agents.

$n = \frac{N}{1 + (e^2)}$  where,  $n$  = Sample size,  $N$  = Population,  $e$  = Level of significance 0.1

Table 1: Sample size

LGA	Ward	Sample Frame	Sample Size
Bichi	Bichi	250	42
	Kyalli	125	21
	Muntsira	125	21
Total		500	84

Source: field survey 2018

### Method of Data collection and Analytical Tools

Primary data were used which were collected using questionnaire. The data collected were analyzed using descriptive and inferential statistics (binary logic regression). The model was specified below

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + U \dots\dots\dots (1)$$

Where:

$Y = 1$  or  $0$

$1 =$  access to extension service  $0 =$  No access to extension service

$B_1 - B_4 =$  Coefficient of the factors

$X_1 =$  Age of the respondents (years)

$X_2 =$  Level of education (Number)

$X_3 =$  Marital status (Number)

$X_4 =$  Household size (Number)

$U =$  Error term

## RESULTS AND DISCUSSION

### Approaches used by Extension Agents in Extension Services Delivery

**Table 2: Approaches used by Extension Agents in Extension Services Delivery**

Extension Approaches	Frequency		Percentage	
	Used	Not used	Used	Not used
Farmer participatory research approach	5	11	31.2	68.8
Rural participatory appraisal	6	10	37.5	62.5
Farmer-to-farmer extension	12	4	75.0	25.0
Farmers group training	14	2	87.5	12.5
Farmers field school	10	6	62.5	37.5
Training and visit	14	2	87.5	12.5

Source: field survey 2018

From table 2 above, results depict that most of the approaches used by extension agents in their services delivery were farmers group training (87.5%), training and visit (87.5%) and farmers' field school (62.5%) respectively. This implies that farmers had advantage of face to face interaction with extension agents for better communication and the free flow of information. Ponnatah et, al (2008) asserted that Training and Visit (T & V) extension approach is usually implemented in area where large number of farmers cultivates small farms using low level technology and traditional methods. The contact farmers were visited and meaningful messages were disseminated for improving the efficiency of the extension workers (Mahmood, 2005).

### Extension Services Delivered to Farmers by Extension Agents

**Table 3: Extension Services Delivered to Farmers by Extension Agents**

Services Delivered	Frequency		Percentage	
	Delivered	Not delivered	Delivered	Not delivered
Introduction of new seed variety	15	01	93.8	6.2
Methods of fertilizer applications	15	01	93.8	6.2
Pre - season training	15	01	93.8	6.2
Dissemination of innovations	16	00	100	00
Conduct of demonstration plots	15	01	93.8	6.2
Linking farmers with agro dealers	15	01	93.8	6.2
Linking farmers with sources of loan	04	12	25.0	75.0

Source: field survey, 2018

Table 3 result revealed the extension service delivered by extension agents. Almost all (100%) disseminate new ideas to farmer, 93.8% introduced new seed variety (Rice, Maize and cowpea),

fertilizer, pre-season training, conduct demonstration plot, and link farmers with agro-input dealers respectively while 25% linked farmers with source of loan. This implies that the extension agents discharged their responsibilities in providing skills; ideas and information for improvement in farming activities which may improve the livelihood of people living in the area.

### Factors that Influenced Access to Extension Services Delivered

Table 4: Factors that Influenced Access to Extension Services Delivered

Variable	B	S.E	DF	Sig
Age	-0.042	0.029	1	0.140
Household size	0.039	0.045	1	0.381
Level of education	-0.715	0.226	1	0.002
Constant	4.006	-1.412	1	0.005

Source: field survey 2018

From the result in table 4 above, level of education of the farmers had significant influence with negative coefficient (-0.715) and level of significant of 0.002 on extension service delivery. This implies that irrespective of the level of education farmer can access extension services delivered in the study area meaning that accessibility to those services delivered has nothing to do with literacy level of the farmers since the delivery is not based on educational level of the farmers.

### Factors that Influenced the Used of Extension Services Delivered

Table 5: Factors that influenced the used of extension services delivered

Variables	B	S.E	DF	Sig
Constant	4.838	2.142	1	0.024**
Age	-0.011	0.024	1	0.662 <sup>NS</sup>
Level of education	-0.764	0.228	1	0.001***
Marital status	-0.892	1.031	1	0.387 <sup>NS</sup>

Source: field survey 2018

Key:  $\beta$ =beta, S.E= standard error, DF= Degree of freedom, Sig= significant level

Key: NS= Not significant, \*\* (5% probability level), \*\*\* (1% probability level)

Table 5 above shows that level of education had significant influence on the use of extension services with coefficient of (-0.764), and level of significant of (0.001). Thus, the level of education had negative influence on use to extension service. This implies that irrespective of the level of education farmers had use to the extension service delivered due to their importance. In contrary,

study conducted by Musbahu (2017) revealed that age of the farmers had negatively influenced access to extension services delivered.

### Effectiveness of the Extension Services Delivered

Table 6: Effectiveness of Extension Services Delivered

	HE	E	U	I	HI
Services Delivered	Freq(%)	Freq(%)	Freq(%)	Freq(%)	Freq(%)
Seed variety introduction	23(27.7)	16(19.3)	3(3.6)	3(3.6)	38(45.8)
Methods of fertilizer application	16(19.3)	19(22.9)	4(4.8)	7(8.4)	37(44.6)
Pre- season training	18(21.7)	10(12)	6(7.2)	8(9.6)	41(49.4)
Linking farmers with credit institutions	16(19.3)	13(15.7)	3(3.6)	10(12)	41(49.4)
Linking farmers with agro input dealers	15(18.1)	16(19.3)	2(2.4)	9(10.8)	41(49.4)

Source: field survey 2018

Key: HE(Highly Effective), E(Effective), U(Undecided), I(Ineffective), HI(Highly Ineffective)

The findings from the study revealed that 47% of the respondents agreed that introduction of seed variety was effective while 49.4% reported that it is ineffective due to late arrival of the seed and difficulty to obtained the quality seed from input dealers. Introduction of different methods of fertilizer application was reported to be effective by 42.1% of the farmers while majority (53%) had the opinion that it was ineffective. The pre-season training organized by the extension agents were reported as effective by 33.7% of the farmers while majority 59% reported that it was not effective because majority of farmers were not engaged in the training. Linking farmers with credit institutions was effective to 35% of the farmers while 61.4% reported that it was not effective due to difficulty in obtaining the loan. It was equally found that 37.4% of the farmers found the linkage with agro input dealers effective as they source quality inputs which influence their output while 60.2% reported that service ineffective due to difficulty and time consumption before accessing the quality inputs in time.

**Farmers Preferred Extension Services****Table 7: Farmers Preferred Extension Service**

	HP	P	MP	LP	HLP
Services Preferred	Freq (%)	Freq (%)	Freq(%)	Freq(%)	Freq(%)
Seed variety introduction	32(38.6)	18(21.7)	2(2.4)	4(4.8)	27(32.5)
Methods of fertilizer application	35(42.2)	20(24.1)	4(4.8)	4(4.8)	20(24.1)
Pre- season training	32(38.6)	13(15.7)	6(7.2)	8(9.6)	24(28.1)
Linking farmers with credit institutions	32(38.6)	22(26.5)	11(13.3)	4(4.8)	14(16.9)
Linking farmers with agro input dealers	28(33.7)	17(20.5)	10(12.0)	5(6.0)	23(27.7)

Source: field survey 2018

Key: HP(Highly Preferred), P(Preferred), MP(Moderately Preferred), LP(Less Preferred), HLP(Highly Less Preferred)

Table 7 shows the extension services preferred by the farmers in the study area where (42.2%) of the farmers highly preferred methods of fertilizer application followed by seed variety introduction, pre-season training, and linking farmers with credit institutions as reported by 38.6% respectively. Linking farmers with agro input dealers was preferred by 33.7% of the farmers. This implies that farmers in the study area were highly interested in knowing different methods to be use in applying fertilizer for better utilization by plants for minimization of cost due to increase in cost of fertilizer in the market. In addition, the farmers also show concern or the need for introduction of improved crop varieties to couple with climate change situation and meet the demand for the teaming population. Pre-season training should also be given priority concern as it brings new ideas and innovations to the door of the farmers. financial constraint among farmers can be solve through linking the farmers to financial institutions where such finance can be obtained. Such institutions where not readily available to some extent at local areas, therefore, methodologies should be developed by the institutions to ensure rural farmers has access to the institution's soft loans. Use of pure and unadulterated agro-inputs helps in obtaining good harvest and linking the farmers with agro input dealers will ensure access to good quality input at low cost.



**CONCLUSION AND RECOMMENDATION**

In conclusion, farmer's group training and training and visit were the most approaches used by extension agents in their services delivery. The services delivered were effective to some while ineffective to others with service rendered on different methods of fertilizer application as the most preferred service by the farmers. It is therefore recommending that extension service should be render as at when due putting in to consideration the need of the farmers.

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