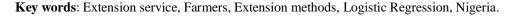# An Assessment of Farmers` Awareness on Extension Services in Nigeria: The Case of Farming Households in Kano State

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Abstract

This research was based on primary data collected through well designed and pre-tested questionnaire, to determine awareness of farmers on extension methods used by ADP in Kano state of Nigeria. Multistage sampling technique was used, in which three local governments were randomly selected. Secondly, three wards one each from the selected local governments (Danbatta, Gaya and Madobi) were randomly selected. Thirdly, three villages (one from each ward) were selected. The total number of sample respondent was 120 (40 farming households from each village). The data collected were analyzed using SPSS (Statistical Package for Social Sciences). The Result reveals that, majority of the farmers interviewed are 35 years of age and below and 105 out of 120 farmers can read and write. The result further revealed that 57% of them have attended educational level up to senior secondary school while only 7% had post-secondary education. Furthermore, 67% of the respondents had 15years and below farming experience. However, 32% of the respondents had no contact with extension while 68% had contact with extension service. Accordingly, the farmers ranked radio as first extension methods, followed by farm and home visit. Regression analysis indicated that contact with extension personnel influenced effectiveness of extension service. Finally, to satisfy their need, farmers should be involved in planning and implementation of extension service.

1. Introduction

Agriculture is key to Nigerian economy accounting for about 40% of GDP and employing about 70% of the active population of over 140 million people (FGN, 2008). More than half of the population lives in the rural area. It is without contest the leading agricultural power and the largest market in West Africa (Mohammad and Atte, 2006). 82 million hectares out of Nigeria's total land of 91 million hectares were found to be arable. Although, only 42% of the cultivable area was farmed and majority of farmers have an average farm size of 1.2 ha. Although, agriculture remains a key components of Nigeria`s economy, the sector however, significantly underperformed its potentials (FGN, 2008). Agricultural extension as a system aims to exchange information and transfer skills between farmers, extension workers and researchers to help identify farming problems. This is achievable through an informal and adult training. Thus, communicating with individual members of farmers community advice and assistance with respect to knowledge and methods of technical agriculture, with due consideration of the economic and social circumstances of the individual and other people collectively (Bardsley, 1982). In a nutshell extension is an educational process that uses varieties of methods designed to help farmers improve living standard. More so, extension methods could be used for understanding the best ways to handle farmers so as to meet their need. Extension organization seeks for employees who are competent in at least five different areas. Namely, technical competency or level of knowledge and understanding related to the crops and livestock the farmer produces; economic competence, or the ability to weigh alternative productive input and output to determine whether the adoption of new idea is advantageous; science competency or an understanding of the philosophy of science and ability to conduct simple field experiment to test an innovation and assess the result (Ifenkwe, 2012). Traditionally, extension was concentrating on training farmers, increasing production and transferring technology. Today`s understanding of extension goes beyond technology transfer to facilitation, beyond training to learning and helping farmers to help themselves, in other words assisting farmers on how to think not on what

to think. Nigeria has the largest national agricultural research and extension, made up of 17 commodity-based research institute, specialized national agricultural extension institute, 18 faculties of agriculture in regular federal universities, 3 specialized university of agriculture, and one international agricultural research centre (Arokoyo, 1998). In Nigeria, Agricultural Development Program (ADP) plays the role of extension delivery services in the agricultural sector. It liaise with the research institute for improved technology, in order to effectively deliver services to the farmers. The problems that emanate from agriculture at grass root levels are transfer to the scientist by the extension personnel and the solution in form of improved technology are disseminated to the farmers for implementation (Akinagbe, 2010). The major challenges of Nigeria`s agricultural extension services have been identified to include: lack of legislated agricultural extension policy, inadequate and untimely funding, poor leadership and coordination, low private participation, very weak research-extension-farmer inputs linkage system driven by ineffective top-down, supply- driven extension approaches(Madukwe, 2010).

Ayesha, and Mohammad (2012), reported that in many developing countries wide adoption of research results by majority of farmers remain quite limited. This situation calls for smooth flow of information from farmers to researchers and from researcher to farmers this passage is provided by agricultural extension services. But, unfortunately extension services have failed in performing its role efficiently and effectively. This research work is to find out the effectiveness of different extension methods used by extension personnel in disseminating improved agricultural technologies to farmers.

The objective of this research is to determine the general information of farmers and their awareness on the effectiveness of extension services render by the extension personnel.

Specifically, the study intends to achieve:

• Determine socio-economic characteristics of farmers.

• Determine farmers' awareness on effectiveness of extension methods and rank extension methods according to five point Likert scale.

• Use logistic regression to determine influence of some factors on effectiveness of extension methods.

2. Materials and methods
2.1 Study Area
Kano is the most populous state in Nigeria with a population of 9,383,682 and an areas of 20,131 km^2 of which 18,684 km^2 are cultivable, 75% of the total population engaged in agriculture (Kano State, 2014).

2.2 Sample procedure and analytical Technique
This research was conducted in Kano state of Nigeria in which multistage sampling technique was used. Danbatta, Gaya and Madobilocal governments were purposively selected out of the 44 local governments in the state. At second stage, three wards one each from one of the selected local governments was randomly selected (ieAjumawa, wudilawa and Madobi ward). Similarly, one village from each ward was randomly selected. Thereafter, 40 households were randomly selected from each village. The total number of sample respondents was 120 ie 40households from each village. The data collected were analyzed with the SPSS (Statistical Package for Social Sciences), using descriptive statistics (Ayesha and mohammad, 2012). Logistics regression was used to determine effect of age, sex, literacy level, farming experience and contact with extension personnel on the effectiveness of extension service. The logistic regression is as follows:

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5$$

3. Results and discussion
3.1 Age
The result in Table 1, shows that 61 out of the 120 respondent`s age are 45years and below and 35 are between 46-55 years old. Implying, that majority of the farmers are physically active in agricultural production, as well as adoption of improved agricultural technologies.

3.2 Education
It was found that 105 of the respondent are literate while 15 are illiterate. Thus, 57% of the respondents have attended senior secondary school and 7% had post-secondary education. Similarly, 19% attended primary education while 17% attended junior secondary education. These indicate that the level of education of the farmers will facilitate effective communication and farmers need to be literate to responds rationally to new technologies.

3.3 Farming Experience
The result indicates that, 63% of the farmers have more than decade of farming experience as shown in Table 3. Thus, indicating that agriculture is an important source for their livelihood.

3.4 Extension Service
Ineffective or inappropriate extension service contributes to decline in agricultural production. Thus, extension is a link between farmers, researchers and extension institution or organization. Table shows that, 68% of the farmers

had contact with extension service while 32% had not. However, 31 farmers out of 40 farmers interviewed in madobi had no contact with extension. But 38 and 35 respondents in wudilawa and ajumawa had contact with extension service.

3.5 Ranking of Extension Methods Used by Extension Personnel

The ranks assigned to each methods used by extension service in innovation dissemination among farmers was determined using a 5 point Likert scale Table 5 and 6 show that, the farmers assigned a rate of very poor, poor, average, good, and very good to rate each method. Accordingly, 1,2,3,4 and 5 scores were also assigned to each. The weighted scores of each method determine its rank as obtained by multiplying the frequency of responses from each column. The result indicates that radio was ranked 1

with mean (m=23.80) and standard deviation (SD=27.25), farm and home visit ranked 2 with m=18.40 and SD=18.24, print materials ranked 3 with m=19.40 and SD=15.14. However, office calls ranked 8 with m=12.80 and SD=12.64.

3.8 Logistic Regression

The results in Table 7 reveal that, out of the five factors included (age, sex, education level, farming experience, and contact with extension), only contact with extension personnel is an important factor as it is significant at 1 %($p<0.05$). This is similar to the findings of Ayesha and mohammad, (2012). Thus, contact with extension personnel affects the effectiveness of extension service.

Table1. Age-wise distribution of respondents

| Location | Respondents Age (in years) | | | | | | | | Total |
| | UP to 35 | | 36-45 | | 46-55 | | 56 and above | | |
	f	%	f	%	f	%	f	%	f
Ajumawa	15	38%	9	23%	11	28%	5	13%	40
Wudilawa	8	20%	7	18%	15	38%	10	25%	40
Madobi	13	33%	10	25%	9	23%	8	20%	40
Total	36	90%	26	65%	35	88%	23	58%	120

Source: Field Survey, 2013

Table 2. Distribution of respondents according to literacy status

| Location | Illiterate | | Literate | | Total | Level of Education | | | | Total |
	f	%	f	%	f	Primary	Junoir	Senoir	Post-sec	
Ajumawa	3	8%	37	93%	40	6 (16%)	2 (5%)	26 (70%)	3 (8%)	37
Wudilawa	2	5%	38	95%	40	7 (18%)	7 (18%)	21 (55%)	3 (8%)	38
madobi	10	25%	30	75%	40	7 (23%)	9 (30%)	13 (43%)	1 (3%)	30
Total	15	13%	105	88%	120	20 (19%)	18 (17%)	60 (57%)	7 (7%)	105

Note: Figures in parenthesis show percentages

Table 3. Distribution of respondents according to farming experience

| Location | Farming Experience(years) | | | | | | Total |
| | 5-10 | | 11-15 | | 16 and above | | |
	f	%	f	%	f	%	f
Ajumawa	17	43%	12	30%	11	28%	40
Wudilawa	11	28%	15	38%	14	35%	40
Madobi	10	25%	11	28%	19	48%	40
Total	38	32%	38	32%	44	37%	120

Table 4. Respondents contact with extension personnel

| Location | Contact with Extension Personnel | | | | Total |
| | YES | | NO | | |
	f	%	f	%	f
Ajumawa	35	88%	5	13%	40
Wudilawa	38	95%	2	5%	40
Madobi	9	23%	31	78%	40
Total	82	68%	38	32%	120

Source: Field survey, 2013

Table 5. Regression analysis of factors influencing effectiveness of extension services

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Age	.439	.266	2.718	1	.099	1.552
	Can you read and write	.224	.758	.087	1	.768	1.251
	sex	-.873	.885	.974	1	.324	.418
	Farming experience	-.077	.354	.047	1	.828	.926
	Contact with extension	2.852	.576	24.520	1	.000	17.324
	Constant	-2.083	1.298	2.575	1	.109	.125

Table 6. Perceived effectiveness of methods used by extension personnel

Location	Activities	Perceived Effectiveness of Extension Methods						Total
		No Activity	V.Poor(1)	Poor(2)	Average(3)	Good(4)	V.Good(5)	
Ajumawa	Farm/Home	12(30%)	1(2.5%)	2(5%)	14(35%)	8(20%)	3(7.5%)	40
Wudilawa	visit	4 (10%)	0 (0)	0 (0)	15 (37.5%)	17 (42.5%)	4 (10%)	40
Madobi		12(30%)	2(5%)	1(2.5%)	12(30%)	10(25%)	3(7.5)	40
Ajumawa	Office calls	14(35%)	4(10%)	5(12.5%)	13(32.5%)	4(10%)	0(0)	40
Wudilawa		9 (22.5%)	0 (0)	1 (2.5%)	18 (45%)	12 (30%)	0 (0)	40
Madobi		33(82.5%)	3(7.5%)	2(5%)	2(5%)	0 (0)	0(0)	40
Ajumawa	Demonstration	10 (25%)	1 (2.5%)	6 (15%)	13 (32.5%)	8 (20%)	2 (5%)	40
Wudilawa	plots	3 (7.5%)	0 (0)	1 (2.5%)	15 (37.5%)	18 (45%)	3 (7.5%)	40
Madobi		22(55%)	3(7.5%)	10(25%)	2(5%)	3(7.5%)	0(0)	40
Ajumawa	Farmer	4 (10%)	3 (7.5%)	8 (20%)	14 (35%)	7 (17.5%)	4 (10%)	40
Wudilawa	training	9 (22.5%)	0 (0)	1 (2.5%)	13 (32.5%)	16 (40%)	1 (2.5%)	40
Madobi		7(17.5%)	9(22.5%)	8(20%)	14(35%)	2(5%)	0(0)	40
Ajumawa	Local fair	2 (5%)	4 (10%)	5 (12.5%)	23 (57.5%)	5 (12.5%)	1 (2.5%)	40
Wudilawa		13 (32.5%)	0 (0)	0 (0)	16 (40%)	11 (27.5%)	0 (0)	40
Madobi		13(32.5%)	3(7.5)	8(20%)	14(35%)	1(2.5%)	1(2.5%)	40
Ajumawa	Workshop	8 (20%)	3 (7.5%)	8 (20%)	11 (27.5%)	7 (17.5%)	3 (7.5%)	40
Wudilawa		4 (10%)	0 (0)	0 (0)	21 (52.5%)	15 (37.5%)	0 (0)	40
Madobi		18(45%)	3(7.5%)	9(22.5%)	2(5%)	8(20%)	0(0)	40
Ajumawa	Radio	0 (0)	0 (0)	1 (2.5%)	10 (25%)	23 (57.5%)	6 (15%)	40
Wudilawa		1 (2.5%)	0 (0)	0 (0)	4 (10%)	18 (45%)	17 (42.5%)	40
Madobi		0(0)	1(2.5)	0(0)	3(7.5)	25(62.5%)	11(27.5%)	40
Ajumawa	Print materials	4 (10%)	3 (7.5%)	3 (7.5%)	15 (37.5%)	12 (30%)	3 (7.5%)	40
Wudilawa		11 (27.5%)	0 (0)	0 (0)	11 (27.5%)	16 (40%)	2(5%)	40
Madobi		8(20%)	4(10%)	12(30%)	14(35%)	2(5%)	0(0)	40

Source : Field Survey, 2013
Note: Figures in parenthesis are percentages

Table 7. Ranking of extension methods used by extension personnel

Extension Methods	Weighted Score	Rank Order	Mean	Standard Deviation
Farm/Home visit	322	2	18.40	18.24
office calls	186	8	12.80	12.64
demostration plots	269	7	17.00	12.51
farmer training	294	4	20.00	13.82
local fair	270	6	18.40	20.17
workshop	277	5	18.00	13.87
radio	488	1	23.80	27.25
print materials	302	3	19.40	15.14

Source: Calculation by Author

4. Conclusion and Recommendation

Agricultural extension service requires regular supervision to ensure that effective and appropriate information is disseminated at the right time, place and to the right people. This will assist farmers achieved high income and improve living standard through agricultural production. Particularly, Madobi area, where majority of farmers (77%) had no contact with extension service. Thus, extension should work according to farmers need and resources. The following recommendations were made:

The government should ensure that, well trained and adequate extension agents are provided to ensure increase in food production and farmers livelihood.

All program for assisting farmers should be according to their needs and desires.

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