

## Extent of Extension Service Delivery for Agro-pastoralists in Niger State, Nigeria

Ibrahim, M.<sup>1</sup>, G.B. Adesiji.<sup>2</sup>, I.S. Tyabo.<sup>1</sup>, I.S Umar.<sup>1</sup>, M.A Ndanitsa<sup>1</sup> A.Abdullazeez<sup>1</sup>

1.Department of Agricultural Economics and Extension Technology, Federal University of Technology P.M.B 65 Minna, Niger State, Nigeria

2.Department of Agricultural Extension and Rural Development, University of Ilorin, Ilorin. Kwara State, Nigeria

Email address: [gausubrahama@yahoo.com](mailto:gausubrahama@yahoo.com) or [ibrahimtyabo@yahoo.com](mailto:ibrahimtyabo@yahoo.com)

### ABSTRACT

The study examines the extent of agricultural extension services delivery to agro-pastoralists in Niger State, Nigeria. Primary data were collected through field survey from agropastoralist from three purposely selected Local Government Areas in Niger State. Katcha, Paiko and Wushishi LGA's were purposely selected by making sure they were in different agricultural zones of the Niger State namely Zone I, II and III respectively. Twenty percent of the agropastoralists house-hold population was sampled from each of three LGA randomly. A total of 210 household heads were sampled and interviewed using a semi structured survey instrument administered by trained enumerators who understood the local language. Both descriptive and inferential statistics were employed to analyse the data. Results revealed that all (100%) of the household heads were all males and 67.7% acquired adult education while agro-pastoralism was the major occupation (98.1%). Majority (98.1%) of the agro-pastoralists claimed they were of Fulani ethnic group. Information on out break of diseases (mean=3.9); provision of grazing reserves (mean=3.7) were reported high. Majority (99.5%) of the respondents opined that lack of easy access to vaccines and non- proximity of veterinary clinic were major constraints. In the testing of hypotheses, Pearson Product Moment Correlation (PPMC) showed a significant positive relationship between extent of extension service provision and the following variables namely Age ( $r = 0.172$ ;  $p < 0.05$ ), number of wives ( $r = 0.163$ ;  $p < 0.05$ ), number of children ( $r = 0.222$  and;  $p < 0.05$ ), and number of cows owned ( $r = 0.221$ ;  $p < 0.05$ ). The result of Chi-square analysis shows that there was a significant relationship between Extent of extension provision and the settlement type ( $X^2 = 10.21$ ;  $p < 0.05$ ), Extent of extension provision and educational level ( $X^2 = 12.20$ ;  $p < 0.05$ ). It was recommended that government should make adequate arrangement for provision of necessary infra-structure in the already gazetted grazing reserve most especially veterinary clinics and make vaccine available and affordable for them. There is need to produce more radio programmes and also encourage formation of radio listening group since is one of the major source of information to their production system.

**Keywords:** Agriculture, Extension service delivery, agropastoralists

### INTRODUCTION

Agro pastoralists are people making a living in marginal land and obtaining a given percentage of their gross agricultural produce as opposed to total income from livestock (ARDS, 2007).

In Nigeria like other African countries, there is a serious problem of inadequate dietary animal protein. The major source of animal protein is the cattle which are in the hands of pastoral Fulani's (Ajala, 2000). In Nigeria, over 90% of cattle, sheep and goats are held by nomadic and semi- nomadic pastoralists and these animals are held in the Sudan and Guinea Savannah regions (Ega & Erhabor, 1998). Ismail (2000) agreed that Fulani pastoralists own nearly all the livestock kept in Nigeria. Oladoja (2008) reported that over 60% of cattle in Nigeria are being held by the pastoral Fulani who see cattle rearing as traditional occupation. In the communities of the Fulani, wealth is measured in terms of number of heads of cattle owned by individuals and it is also an important consideration for contracting marriages (Olusanya, 2009). The Savannah zones of Nigeria have abundance of grasses and forages and also the absence of the deadly cattle disease called Trypanosomiasis make the zone conducive for rearing cattle (Oladoja, 2008). Traditionally, extension has been seen as information delivery to farmers (Moris, 1991). It also includes training in use of more technology and the creation of indigenous institutions that take decisions and allow exchange of information. According to Ani (2007) the essence of agricultural extension work involves working with rural people along the lines of their felt needs, interests, enhancing their level of living and improving their physical environment. In Nigeria, research has been carried out mainly on developing livestock capital but often neglecting the human capital. Nuru (1988) and International Livestock Centre for Africa (ILCA)(1988), have described the Fulani lifestyle, production systems but no information is available on the availability of extension services to assist them in their production. Aboe (2001) also identified the problems of the pastoralists to be lack of capital, bad road network, encroachment on grazing land by agriculturists and lack of agricultural extension services. It is therefore important to empower these Fulani communities by way of extensive extension education. Previous Government efforts had been concentrated on the development of the livestock industry itself rather than development of the

people involved in livestock production (Pastoralists). Agro pastoralists in the Niger state have the problem of accessibility to extension services. Agro-pastoralists within the State supply most of the needed animal products. But investments and policies for the development of the sector are at a very slow pace (ARDS, 2007). This study was undertaken to provide guidelines for understanding the agricultural extension services provision and needs of the agro -pastoralists in Niger State. The result of the study is expected to be extrapolated to other State of Nigeria and other agro pastoralist communities in Nigeria.

**Objectives of the study are to:**

1. describe the socio-economic characteristics of agro-pastoralists,
- 2.determine the extent of extension services provision
- 3.ascertain the extension service needs of the agro-pastoralists,
4. ascertain the major constraints facing the agro-pastoralists

**Hypotheses of the study include:**

Ho<sub>1</sub>: There is no significant relationship between extent of extension service provision and socioeconomic characteristics

Ho<sub>2</sub>: There is no significant relationship between the extent of the extension service provision and the extension service needs of the agropastoralists

**Methodology**

The study was conducted in Niger State. It is located in Guinea Savannah region. The Area has population of about 3,950,249 people (Male 2,032,725 and Female 1,917,524) National Population Commission (2006, Census). The State experience distinct dry and wet season with mean annual rain fall of 1,350mm and the temperature ranges between 20°C-25°C with relative humidity ranges between 60-80% in the month of July.The state lies between 6°8<sup>1</sup>-6°3<sup>1</sup> E and 8°29<sup>1</sup>-8°44<sup>1</sup> longitude. The soil is luvisols (F.A.O, 1999). The vegetation is mainly short grass and shrubs with scattered trees. The study adopted Multi- stage sampling technique. The State was stratified into three in accordance with three Agricultural Zones namely: Zone A. (Niger- South) Zone B (Niger- Central) and Zone C (Niger- East). One Local Government Area was purposively selected from each of the Agricultural Zones namely: Katcha, Paiko and Wushishi. A total of 210 agropastoral household were randomly sampled using simple random sampling technique. Structured interview schedule that were validated were used to elicit information from the respondents. Both descriptive (mean, percentage, frequency count) and inferential (Pearson Product Moment Correlation (PPMC), Chi-square were employed, inferential statistics specifically PPMC was employed.

**RESULTS AND DISCUSSION**

**Socio-economic Characteristics of Agro-pastoralists**

Table 1 show that most of the agropastoralist household heads (64.8% ) were between 41-50 years . The age range of 41-50 reveals that this group is maily invovled in agropastoralism in the study area. All (100%) of the household heads of the study area were all males. This tend to signify that only males can be head of agropastoral household, even in the presence of an elderly female (widow) when a family loses an household head. This is the fact of the respondent's state of being unmarried, married, or formerly married. Table 1 indicates that majority of the respondents (95.7%) were married. This refers to the total number of respondents in a particular house which includes the father, mother, children, grand parents, uncles, aunties and cousins. The household size of 11-16 constituted the majority (76.2%) in the study area. In an agro-pastoral environment, the higher the household size, the higher the availability of labor for herding of the animals. Majority of the respondents (67.7%) acquired normadic education , this implies that, they seems to recognized the important of western education as it affect their day to day activities. The analysis on distribution of respondents by major occupation. The result indicates that agro-pastoralism is the major occupation (98.1%). The survey indicates that majority of the agro-pastoralists (98.1%) are Fulani by ethnic group. Majority (77.6%) of the respondents reported radio as the major source of information on their production systems. This attributed to the fact majority of them are with small radio for hearing of the new and small tape for listeaning of their local mus

Table1: Socio-economic distribution of the respondents. (n=210)

Variables	Katcha n=70	Paiko n=70	Wushishi n=70	Total n=210
<b>Age (years)</b>				
30years &below	3 (4.8)	3 (4.8)	3 (4.8)	9 (4.3)
31-40	5 (8.1)	8 (4.3)	7 (10.0)	20 (9.5)
41-50	42 (54.8)	48 (68.6)	46 (65.7)	136 (64.8)
51 & above	20 (32.3)	11 (15.7)	14 (20.0)	45 (21.4)
<i>Mean 46 years</i>				
<b>Marrital status</b>				
Married	65 (92.9)	70 (100)	66 (94.3)	201(95.7)
Single	4 (5.7)	0 (0.00)	2 (2.9)	6 (2.9)
Divorce	1 (1.4)	0 (0.00)	2 (2.2.9)	3 (1.4)
<b>Educational level</b>				
Normdic	45 (64.3)	47 (67.1)	50 (71.4)	142 (67.7)
Islamic edu.	25 (35.7)	20 (28.6)	20 (28.6)	65 (31.0)
Adult edu.	0 (0.00)	3 (4.3)	0 (0.00)	3 (1.4)
Primary	0 (0.00)	1 (1.4)	0 (0.00)	1 (0.5)
<b>Household size</b>				
1-5	9 (12.9)	8 (11.4)	7 (10.0)	24 (11.4)
6-10	8 (11.4)	6 (8.6)	4 (5.7)	18 (8.6)
11-15	50 (71.4)	54 (77.1)	57 (81.4)	161 (76.7)
16 and above	3 (4.3)	2 (2.9)	2 (2.9)	7 (3.3)
<b>Major occupation</b>				
Agropastoralist	68 (97.1)	69 (98.6)	69 (98.6)	206 (98.1)
Pety trading	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Civil servant	2 (2.9)	1 (1.4)	1 (1.4)	4 (1.9)
<b>Number of wives</b>				
One	12 (17.1)	7 (10.00)	4 (5.7)	23 (11.0)
Two	52 (74.3)	56 (80.00)	60 (85.7)	168 (80.0)
Three	6 (8.6)	4 (5.7)	5 (7.1)	15 (7.1)
Four	0 (0.00)	3 (4.3)	1 (1.4)	4 (5.7)
<b>Ethnic group</b>				
Fulani	67 (95.7)	69 (98.6)	70 (100.0)	206 (98.1)
Hausa	3 (4.3)	1 (1.4)	0 (0.00)	4 (1.9)
<b>Sources of Information</b>				
Extension worker/ADP	63 (90.0)	50 (71.4)	45 (64.3)	158 (75.2)
Radion	55 (78.6)	58 (82.9)	50 (71.4)	163 (77.6)
Friend and Neighbours	2 (2.9)	0 (0.00)	0 (0.00)	2 (1.0)

Source: Field Survey, 2014; Figures in parenthesis are percentages.

### Extent of Extension services provision to agro-pastoralist

The result of the study inTable 2 shows that with regards to regularity of visits by extension worker to both the field (mean=3.1) and home (mean=2.9) was rated as regular. This is based on the fact that the mean weighted score is higher than the cut off point mean of 2.5 based on the 4-point scale used. The relevance of the extension message received (mean= 3.1) and representativeness of agropastoralists as contact farmers (mean=3.2) by respondents also revealed that the messages were relavant and they were well represented.

Table 2: Extent of Extension Services provision to agro-pastoralists

s/no LGA's	Extension Service provision variables	Weighted mean			Total	Over all perception
		Katcha	Paiko	Wushishi		
1	Regularity of field visit	3.2	3.3	3.2	3.1	Regular
2	Regularity of home visit	3.0	2.8	3.1	2.9	Regular
3	Relevance of extension message need	3.3	3.0	3.2	3.1	Relevance
4.	Representativeness of agropastoralist as contact farmers	3.2	3.1	3.3	3.2	Represented

Source: Field survey, 2014.; Figures are mean derived from 4-point scale of 1 to 4.

### Rating of Extension Service Needs of Agropastoralists.

Table 3 shows that out of 21 extension service needs of respondents about seven (7) were reported not a need. This Table also reveals that information on out break of diseases (mean=3.9); provision of grazing reserves (mean=3.7) were reported high this may attributed to the fear of danger it might cause to their animal, so when such information is conceived by them, they will know the new location to migrate to.

**Table 3. Rating of Extension Service Needs of Agropastoralists**

s/no	Extension Service provision variables	Weighted mean			Total	Over all perception
		Katcha	Paiko	Wushishi		
1	Provision of social amenities such as health clinic, tap water etc.	3.0	3.6	3.1	3.2	Need
2	Agricultural cooperatives formation	1.2	1.3	1.6	2.1	Not a Need
3	Marketing of the Produce	3.1	2.9	3.0	3.0	Need
4	Marketing of the livestock	1.0	2.0	2.5	1.8	Not a Need
5	Marketing of milk/Wet fresh cheese	2.8	3.5	3.0	3.1	Need
6.	Animal health/veterinary service	3.6	3.5	3.5	3.5	Need
7	Processing of animal products	3.2	3.2	3.1	3.2	Need
8	Management of cattle	2.7	3.1	2.6	2.8	Need
9.	Record keeping	2.4	2.0	2.4	2.2	Not a Need
10.	Processing and storage of farm produce	2.7	2.9	2.8	2.8	Need
11.	Credit Facilities	2.7	1.0	2.8	2.1	Not a Need
12.	Agricultural input	2.5	2.7	2.8	2.6	Need
13	Management of sheep and Goat	2.9	2.5	2.7	2.7	Need
14	Increase in livestock productivity	3.5	3.2	3.4	3.4	Need
15	saving and investment	2.2	2.5	2.1	2.2	Not a Need
16	Environmental management practices	2.5	2.2	2.4	2.4	Not a Need
17	Establishment of range plots	2.0	3.2	2.5	2.6	Need
18	Housing for livestock	2.1	2.2	2.4	2.2	Not a need
19	Establishment of browse plants	3.9	3.9	2.5	3.4	Need
20	Provision of grazing reserves	3.6	3.9	3.7	3.7	Need
21	Information on disease out break	3.8	3.9	3.9	3.9	Need

Source: Field survey, 2014.; Figures are mean derived from 4-point Likert scale of 1 not a need to 4 very high need.

### Constraints faced by the respondents

Table 4 shows majority (99.5%) of the respondents opined that lack of easy access to vaccines and non-proximity of veterinary clinic were major constraint and only (14.3%) mentioned lack of job opportunity as a constraint.

**Table 4: Distribution of the respondents based on the Constraints faced**

Constraints	Frequencies*	Percentage
Access for Vaccine very difficult	209	99.50
Problem of Marketing	95	45.20
Non availability of Normadic Schools	140	66.70
Veterinary Clinic not close	209	99.50
Transportation problems	147	70.00
Access to loan very difficult	140	66.70
Job opportunity not available	30	14.30
Land acquisition very difficult	170	81.00

Source: Field Survey, 2014; \*multiple responses

### Test of Hypotheses

Relationship between Extent of extension services provision and socioeconomic characteristics. Two analytical tools were used to test this hypothesis. The Pearson Product Moment Correlation (PPMC) was used for the personal and socioeconomic characteristics measured at interval level and Chi-square ( $X^2$ ) was used for the

personal and socioeconomic characteristics measured at nominal level. The result of the PPMC analysis shows a significant positive relationship between Extent of extension service provision and the following namely Age ( $r = 0.172; p < 0.05$ ), number of wives ( $r = 0.163; p < 0.05$ ), number of children ( $r = 0.222$  and  $p < 0.05$ ), number of cows owned ( $r = 0.256; p < 0.05$ ). There was however, a significant but negative correlation between Extent of extension service provision and settlement years in location ( $r = -0.177; p < 0.050$ ). The table also show that there was no significant correlation between the Extent of extension service provision and number of sheep ( $r = 0.097; p < 0.05$ ), number of goats owned ( $r = 0.086; p < 0.05$ ) and with number of birds (poultry) owned ( $r = 0.032; p < 0.050$ ). The result of Chi-square analysis shows that there was a significant relationship between Extent of extension provision and the settlement type ( $X^2 = 10.21; p < 0.05$ ), Extent of extension provision and educational level ( $X^2 = 12.20; p < 0.05$ )

**Pearson Correlation Analysis Showing Relationship between Extent of extension services provision and socio-economic characteristics**

Personal and socio-economic Characteristic	Pearson Correlation (r)
Age	0.172*
Number of wives	0.163*
Number of children	0.222*
Number of male children	0.245*
Number of female children	0.232*
Number of cattles owned	0.256*
Number of goats owned	0.086ns
Number of sheep owned	0.077ns
Number of poultry owned	0.032ns
Years spent in settlement	-0.177*

Source: Field survey, 2014.; \*significant at P=0.05 level; ns= Not significant

**Chi-square and Contingency analysis of relationship between Extent of extension services provision and some selected socio-economic characteristics**

Variable	X <sup>2</sup>	Degree of freedom (DF)	Contingency coefficient (CC)	Percent level of significance (P)
Settlement type	10.55	1	0.24	0.001*
Educational level	12.20	1	0.29	0.001*

Source: Field survey, 2014. \*significant at P=0.05 level; ns=not significant

**Policy Recommendations**

1. The government should make adequate arrangement for provision of necessary infra-structure in the already gazzeted grazing reserve most especially vetinary clinics and make vaccine available and affordable for them.
2. Mechanism should be put in place to educate the respondents on the need of simple record keeping, cooperative formation, seeking for credit facilities, enviromental magement practice, savings and investment since most of them are also crop farmers.
3. There is need to produce more radio programmes targeted at the agropastoralists and also encourage formation of radio listening group since is one of the major source of information to their production system.

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