FARMERS' PERCEPTION OF EFFECTIVENESS OF THE EXTENSION STRATEGIES IN AGRICULTURAL TRANSFORMATION AGENDA SUPPORT PROGRAMME IN KANO AND NIGER STATES, NIGERIA

Abstract

The study assessed how farmers perceived the extension delivery strategies deployed under the Agricultural Transformation Agenda Support Programme in Kano and Niger. In carrying out the study, 235 Sorghum farmers participating in the programme in both states were randomly selected using the multi-stage random sampling procedure. The data collected through a structured questionnaire were analysed using mean and t-test of significance. The result showed that farmers found the extension strategies deployed to be effective and the study found no significant difference between the population and sample means at 95% confidence level. The most effective strategy was the strategy of stimulating farmer-to-farmer exchanges and technology dissemination while the other strategies, though effective, was rated least included: involving farmers in all stages of research and development; allowing technologies to be better compared and adapted to local conditions; empowering farmers as diagnostic problem-solvers in the future; and building farmers capacity to source information.

Keywords: Delivery strategies, Effectiveness, Extension, Perception

1.0 Introduction

Behavioural change is the focus of adoption while the extension personnel and their activities are the focus of learning situations and the success of agricultural intervention programmes, most of the times, focuses on farmers with much reference to their level of adoption, income and the impact of the adoption decision on the farmers' standard of living. When these parameters are rated low, the famers are blamed for not responding positively. The effectiveness of the extension personnel in carrying out his duties can be used to assess the success of the extension programme (Misra, 1997). Amalu (1998) Observed that most problems in research trials have been as a result of faulty planning by either managers of research or their collaborators. Research on extension strategies can help extension services improve their effectiveness and efficiency in serving farmers (Khaila, 2015). Agbarevo and Obinne (2010) also observed that the top down approach in contrast to participatory approach to mainstream resource-poor-farmers into research extension activities have been the cause farmers' poor participation in the research-extension farmer-linkage activities. The ATASP-1 sorghum value chain in its extension strategy employed the use of Participatory Research and

Extension Approach which involves four stages of: (1) situation analysis and social mobilization, (2) action planning, (3) farmer experimentation and (4) participatory monitoring and evaluation.

According to Mbulwe (2015), Effectiveness has to do with what Extension personnel accomplishes regarding activities it has scheduled for itself to carry out while considering how resources, such as capital, goods and services, manpower, training and technologies required for execution of the programme have been utilised.

Farmers and other Stakeholders benefits from participatory research and extension approach as they are involved in all stages of research and development to:

- Ensures that local technical knowledge is utilized as appropriate
- Motivates farmer participation and opens them to new ideas
- Allows technologies to be better compared and adapted to local conditions
- Empowers farmers as diagnostic problem-solvers in the future
- Stimulates farmer-to-farmer exchanges and technology dissemination
- Bring other actors and especially markets to make agriculture a business

Consequent on the above, it is the objective of this study to assess the farmers' perception of effectiveness of extension strategies deployed under the Programme. In this regard, the paper hypothesises that there is no significant no significant difference in the farmers' perception of the effectiveness of extension strategies deployed under the Agricultural Transformation Agenda Support Program Phase-1 (ATASP-1)

2.0 Description of Area of Study

The Agricultural Transformation Agenda Support Program Phase-1 in Nigeria as a pilot project focusing on three commodities (Rice, Cassava and Sorghum) is run based on the Staple Crop

Processing Zone arrangement (SCPZ) and operated in four SCPZs which included: (i) Adani-Omor SCPZ comprising of Anambra and Enugu States: (ii) Bida-Badeggi SCPZ comprising of Niger State; (iii) Kano-Jigawa SCPZ comprising of Kano and Jigawa States; and (iv) Kebbi-Sokoto SCPZ comprising of Kebbi and Sokoto States. (ADF, 2013). Kano and Niger States being two of the States sampled from two of the SCPZs.

Niger state with a population of 3.9 million people (Alamu, 2013), is located in the North central zone along the Middle Belt region of Nigeria. Niger State is classified as one of the largest states in the country spanning over 86,000 km^2 in land area with 80% of the land mass conducive for agriculture (Tologbonse, 2008); lies on latitude 80^o to 11^o:30' North and Longitude 03^o 30' to 07^o 40' East. Niger state with 9.30% of the total land area of the country is not only divided into three agricultural zones under climatic features containing nearly all classes of soils of the savannah regions of West Africa (Tologbonse, 2008); experiences distinct dry and wet seasons with annual rain fall varying from 1,100mm in the northern parts to 1,600mm in the southern parts. In the same vain, the total land area of Kano State is about 20,760sq km (RDDK, 2009). The total population in 2006 national census is about 9,386820 people (NPC, 2009); the study area is tropical grass land characterised by scattered trees which hardly exceed 20 metres high. Kano State is located in the tropics, a region characterised by alternating wet and dry conditions, with annual rainfall of 850mm occurring between April/May and September/October with peak in July and August.

3.0 Materials and Methods

The population of the study consisted of the ATASP-1 registered sorghum farmers in Kano and Niger States. The sample size consisted of 235 registered ATASP-1 Sorghum farmers in both States. Multistage sampling procedure was used for the study. Primary data was used for this study, derived using a well-structured questionnaire and interview schedule to collected

data from sampled farmers on their perception of the effectiveness of the extension strategies deployed. The questionnaire was a 3-point Likert type rating scale designed to elicit information on farmers' perception on the effectiveness with regard to each of the effectiveness indicators to which numerical scores were assigned thus: not effective = 1, effective = 2, and very effective = 3.The data obtained were analysed using descriptive and inferential statistics, that is, the mean and the t-test respectively. The use of mean as descriptive statistics on the 3-point scale, the mean of 2.00 was used as cut off point to determine effectiveness or ineffectiveness which was thus modified: >2.50=high (very effective), 2.0-2.5=average (effective), and <2=low (not effective). The mean of 2 as a cut-off point was used to determine effectiveness or ineffectiveness of the perception of farmers of the extension strategies deployed.

The hypothesis that there is no significant difference between the sample and population mean ratings of farmers' perception regarding the effectiveness of extension strategies deployed under the programme was tested for significance using the t-test of significance of difference between the sample and population means at 95% confidence level (P≤0.05).

This is given by the formula: $t = \frac{\bar{X} - U}{\frac{S}{\sqrt{n-1}}}$

where $\bar{X}$ = sample mean

U = population mean estimate = alpha – level (0.05) $\frac{(S)}{\sqrt{n}} + \bar{X}$

S = standard deviation of sample n = size of sample

n = size of sample

Table 1: Mean ratings of farmers' perception of effectiveness of extension strategies deployed by the Sorghum commodity value chain

S/N	Extension Strategies	Very Effective F*3	Effective F*2	Not Effective F*1	Ẍ	Rank

1	Farmers and other stakeholders are involved in all stages of research and development	351	212	12	2.4*	3RD
2	Ensures that local technical knowledge is utilized as appropriate	315	234	13	2.4*	3RD
3	Motivates farmer participation and opens them to new ideas	348	228	3	2.5*	2ND
4	Allows technologies to be better compared and adapted to local conditions	321	250	3	2.4*	3RD
5	Empowers farmers as diagnostic problem-solvers in the future	309	248	8	2.4*	3RD
6	Stimulates farmer-to-farmer exchanges and technology dissemination	414	186	3	2.6**	1ST
7	Bringing in other actors, especially markets to make agriculture a business	327	246	3	2.5*	2ND
8	Building farmers capacity to source information	303	262	0	2.4*	3RD
9	Building farmers capacity to evaluate and apply information in decision making	318	258	0	2.5*	2ND
10	Extension agents working together with farmers for change	387	200	6	2.5*	2ND

* Effective
** Very Effective

Table 2: Significance of Difference in perception of effectiveness of Extension strategies deployed

Groups	**N**	**Ẍ**	**SD**	**p**	**t-cal**	**table-t**	
Sample	235	2.45	.33	0.05	-1.1	1.6	Not Significant
Population		2.47					

Decision: Null hypothesis accepted

4.0 Result and Discussion

The result of the farmers' perception of effectiveness of extension strategies deployed under the programme is shown in table 1. The strategies with mean score of 2.0 to 2-5 is perceived as effective while those with a mean score of less than 2.0 were perceived not to be effective and those with mean score above 2.5 is perceived as very effective. The strategy perceived as very effective is the strategy of stimulating farmer to farmer exchanges and technology

dissemination which had a mean score of 2.6. Mulwafu & Krishnankutty (2012) noted that the lead farmer approach had numerous benefits. They noted that the lead farmers provide a focal point in the community for introducing new technologies, for building farmer capacity, and as an entry point for service providers, such as input suppliers; and Feder & Savastano (2006) confirmed that farmers learn best from their peers, or those of slightly higher social status.

The strategies perceived by farmers to be effective that ranked second with a mean score of 2.5 were the strategies of: motivating farmer participation and opening them to new ideas; bringing in other actors, especially markets to make agriculture a business; building farmers capacity to evaluate and apply information in decision making; and Extension agents working together with farmers for change. These strategies are also fully adopted in the value chain innovation platforms that ATASP-1 also adopted as a way of carrying out its activities.

The third ranked strategies also perceived as effective by the farmers were the strategies of: farmers and other stakeholders being involved in all stages of research and development; ensuring that local technical knowledge is utilized as appropriate; allowing technologies to be better compared and adapted to local conditions; empowering farmers as diagnostic problem-solvers in the future; and building farmers capacity to source information. These strategies

The hypothesis that there is no significant difference between the sample and population mean ratings in farmers' perception of effectiveness of extension strategies deployed was tested for significance using the t-test of significance of difference between the sample and population means at 95% confidence level ($p<0.05$) and the result is shown in table 2. The result shows no significance and as result the null hypothesis was not rejected. This implies that there is no significant difference between the sample and population mean ratings in farmers' perception of effectiveness of extension strategies deployed.

5.0 Conclusion

The farmers perceived the extension strategies as all effective but the most effective was the stimulation of farmer to farmer exchanges and technology dissemination, therefore, more research is needed on low-cost ways to improve effectiveness of lead farmers, and forums are needed where practitioners can share experiences in implementing such programs.

Extension managers, lead farmers and trainees should all be involved in finding ways to improve the effectiveness and efficiency of programs using the lead farmer approach

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