

Assessment of Extension Education Needs of Crop Farmers in Zone 'B' Area of Benue Agricultural and Rural Development Authority (BNARDA), Benue State, Nigeria

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Abstract

This study was undertaken to assess the extension educational needs of crop farmers in Gboko Area in zone 'B' of Benue Agricultural and Rural Development Authority. The data were collected using multi-stage stratified and purposive random sampling to select the sample size of 243 respondents. Likert scale and logit regression were used in the analysis. The results showed a high level of interest in extension education in all areas of crop production. The perceptions of the farmers on the quality of education received were equally determined. Education or training based on the felt needs of farmers offers one of the best means of increasing productivity, reducing poverty and hunger. Farmers should be made central to any strategy aimed at increasing the quantity and quality of investment in agriculture.

Keywords: Crop, farmers, extension, education, needs

Introduction

Farming in Nigeria remains at the subsistence level. It is characterized by small-scale farming carried out by peasant farmers with an average of about two hectares of land which are usually scattered holdings (Ukeje, 2006). While the sectors performance has improved in recent years, it is still described as one with a great deal of unrealized potential. Though the sector employs well over half of the nations labor force, it is said to only account for about one third of gross domestic product (GDP). Out of 70 million hectares of land classified as agricultural land in the country, only about 42 million hectares of this is currently either under permanent crop or pasture. This leaves about 28 million hectares of land for arable farming (Oladapo, 2007).

Another problem faced by the sector is its inability to harness the entire human capital available. Extension services typically focused can increase crop and livestock production rather than the development of the farmers. Development of the farmers through qualitative educational procedures is the panacea for sustainable agricultural development.

According to Olawamiwa (2013), as typical of low income countries of the world, subsistence production in Nigeria and peasantry in countries like Asia, Japan and Latin America may be ranked equal especially with regard to their set up, management and capital and consumes a lot of the farm proceeds leaving room for small marketable surplus. The same farmers who produce food crops mainly for consumption are also engaged in production of other crops for export sales. Thus, there is the need for regular intensive extension education programme through training to expose farmers to relevant technology and practices for sustainable career development. As agricultural practices become more complex, they need training to enhance the agricultural productivity.

According to Sajeev and Singha (2010), training plays an important role in the advancement of human performance in a given situation. Training provides a systematic improvement of knowledge and skills which in turn helps the trainees to function effectively and efficiently in their given task on completion of the training. Sajeev and Singhan (2010) opined that training is a process of acquisition of new skills, attitude and knowledge in the context of preparing for entry into a vocation or improving ones productivity in an organization or enterprise.

Identifying training needs often remains the responsibility of outside training operators (Agahi et al, 2012). It is characterized by their analysis of the situation (often external) and by the objectives that they are pursuing (often reductionism view) almost always determined by their institutional requirements. Thus it is decided from the outside, what is good for the farmers, what is necessary and later the farmer's lack of enthusiasm to follow the sessions organized for them is developed, (Agahi et al, 2012 and Mercoiret, 2003). Effective training requires a clear picture of how the trainees will need to use information after training in place of local practices what they have adopted before in their situations (Sajeev and Singha, 2010).

Methodology

The research was conducted to assess the extension education needs of crops farmers in zone 'B' area of Benue State Agricultural and Rural Development Authority (BNARDA). Multi-staged stratified and purposive random sampling was used to select the respondents. Eighty-one respondents were interviewed from each of the three districts in Gboko Local Government Area namely: Mbayion, Yandev and Ipav. The total sample size was 243 respondents.

Percentages and frequency distribution was used to analyse the socio-economic characteristics of the respondents. Five point Likert rating scale was used to analyse the level of interest in educational programmes dealing with topics in crop production by farmers. A mean score of 5 was regarded as very high interest level and quality training level of the famers, a mean score of 4 was regarded as high interest level and quality training level of the famers, a mean score of 3 was regarded as moderate interest level and quality training level of the famers, a mean score of 2 was regarded as low interest level and quality training level of the famers and a mean score of 1 was regarded as very low interest level and quality training level of the famers. Furthermore, an arbitrary rating of 2.50 and above was chosen as an acceptable interest level and quality training level of the famers.

Similarly, a five-point Likert rating scale was used to analyse the quality of educational programmes offered in crop production as rated by farmers. A mean score of 5 was regarded as very high interest level and quality training level of the famers, a mean score of 4 was regarded as high interest level and quality training level of the famers, a mean score of 3 was regarded as moderate interest level and quality training level of the famers, a mean score of 2 was regarded as low interest level and quality training level of the famers and a mean score of 1 was regarded as very low interest level and quality training level of the famers. Furthermore, an arbitrary rating of 2.50 and above was chosen as an acceptable interest level and quality training level of the famers.

In the same vein, a five-point Likert rating scale was used to analyse the sources of new information used by the farmers. A mean score of 5 was regarded as very high interest level and quality training level of the famers, a mean score of 4 was regarded as high interest level and quality training level of the famers, a mean score of 3 was regarded as moderate interest level and quality training level of the famers, a mean score of 2 was regarded as low interest level and quality training level of the famers and a mean score of 1 was regarded as very low interest level and quality training level of the famers. Furthermore, an arbitrary rating of 2.50 and above was chosen as an acceptable interest level and quality training level of the famers.

In order to determine the effect of socio-economic characteristics on farmers' interest in training, the Binary Logistic Regression model that was used is specified below:

$$\text{LOG } \frac{P}{1-P} = \text{LOG } Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \mu$$

1-P

where:

LOG $\frac{P}{1-P}$ = Log of the probability (P) of interest in training relative no interest in training 1-P

Interest in training = 1; No interest in training = 0

X₁ = Age (in years)

X₂ = Gender (male =1; female = 0)

X_3 = Farm income (in Naira)
 X_4 = Level of education (in years)
 X_5 = Household size (in numbers)
 X_6 = Farm size (in hectares)
 X_7 = Farming experience (in years)
 X_8 = Number of extension contact
 μ = error term

Results and Discussion

Table 1 showed that about 63% of the respondents were males while 37% were female. The results infers that agricultural production were male dominated. About 80% of the respondents were between the age of 31-50 years.

It could be inferred that most of the farmers were in their active years. Fifty-eight percent of the respondents had household size of 5-9 persons. The household size may be as a result of the need for farm labour.

Sixty-four percent of the respondents had formal education. This implies that the study area is dominated by literate farmers. Education has a positive influence on awareness, ability to access agricultural information and adoption of agricultural innovations.

In terms of farming experience, about 77% of the farmers had farming experience of between 10 – 20 years and over. This could be explained that farmers who have long years of farming experience have high adoption rate, have the capacity to overcome their production constraints and advantage for increase in productivity. Sixty-four percent of the respondents had farm size of between 0.1 and less than 6 hectares.

This implies that the respondents were peasant farmers producing on a small scale just to feed their families and a small quantity for the market. The result could infer that the farmers have small capital base, poor access to farm input and lack of extension education as an aid to increase productivity.

Table 1: Socio-Economic Characteristics of Respondents (N=243)

Variable	Frequency	Percentage (%)
Sex		
Male	153	63.0
Female	90	37.0
Total	243	100.00
Age		
≤20	17	7.0
20 < 30	25	10.5
30 < 40	57	23.1
40 < 50	95	39.2
≥50	49	20.2
Total	243	100.0
Marital Status		
Single	76	31.3
Married	134	62.5
Divorced	5	2.1
Widowed	10	4.1
Household Size		
<5	30	12.3
5-9	142	58.4
10-14	27	11.2
15-19	18	7.4
≥20	26	10.7
Total	243	100.0
Educational Status		
No Formal Education	88	36.2
Primary Education	67	27.6
Secondary Education	49	20.6
Higher Education	38	15.6
Total	243	100.00
Farming Experience (Years)		
< 5	3	1.2
5<10	53	21.8
10<15	46	18.9
15<20	52	21.4
≥20	89	36.6
Total	243	100.0
Farm Size (Ha)		
0.1 < 6	155	63.8
6<10	65	26.7
≥10	23	9.6
Total	243	100.0

Source: Field Survey, 2014

Table 2 indicates that farmers had high level of interest in agricultural credit ($x = 3.33$), pest and diseases ($x = 3.28$), improve crop variety ($x = 3.19$), soil fertility ($x = 3.18$), crop pesticides in agriculture ($x = 3.11$), marketing ($x = 3.09$) and financial planning ($x = 3.03$). Competence should be in accordance with the task area in which farmers operate in order to be successful, hence the importance of extension training. —

Table 2: Level of Interest in Educational Programmes Dealing with Topics in Crop Production by Farmers (N=243)

Educational Programme	Mean	Standard Deviation
Agricultural Credit	3.33	0.78
Pests and Diseases	3.28	0.85
Improved Crop Variety	3.19	0.82
Soil Fertility	3.18	0.83
Marketing	3.09	0.76
Crop Pesticides	3.11	0.79
Chemical Safety	3.09	0.93
Financial Planning	3.03	0.73
Production Records	2.84	0.82
Production Management	2.55	0.87
Leadership in Agriculture	2.49	0.95
Use of Computer	2.36	0.91

Source: Field Survey, 2014

Table 3 presents the result of the quality of educational programmes offered in crop production as rated by farmers. The result reveals that improved crop variety ($x = 3.28$), agricultural credit ($x = 3.11$), soil fertility ($x = 3.06$), and crop pesticide ($x = 3.01$) were of high quality. The remainders of the topics were rated low quality especially the use of computer ($x = 1.16$). This means that further training programmes is needed to be done in the low quality topics to boost production. Extension education programmes should be conducted on a regular basis to upgrade the knowledge and the skills of the producers in their specialized areas. Farmers' knowledge of the right quantity of inputs to use and proper management practices through proper extension education and services could significantly increase yields, create employment and improve rural livelihoods.

Table 3: Quality of Educational Programmes offered in Crop Production as Rated by Farmers (N = 243)

Educational Programme	Mean	Standard Deviation
Improved Crop Varieties	3.28	0.82
Agricultural Credit	3.11	1.92
Soil Fertility	3.06	0.84
Pests and Diseases	3.01	0.81
Crop Pesticides	2.36	0.93
Production Management	2.05	0.81
Marketing	2.02	0.95
Chemical Safety	2.02	0.90
Leadership in Agriculture	1.95	0.78
Financial Planning	1.78	0.81
Production Records	1.69	0.92
Use of Computer	1.61	0.92

Source: Field Survey, 2014

Table 4 presents the result of sources of new information used by farmers. The result show that friends/neighbors/other farmers ($x = 3.84$) was the most interested source of new information, followed by radio ($x = 3.40$), television ($x = 3.39$), Extension agents ($x = 3.20$). This means that friends/other farmers, radio and television are always available and farmers share ideas on regular basis.

Table 4: Sources of New Information Used by the Farmers (N=243)

Source	Mean	Standard Deviation
Friends/Neighbors/others Farmers	3.84	0.44
Radio	3.40	0.81
Television	3.39	0.78
Extension Agent	3.20	0.93
News Papers	2.93	0.81
Magazines	2.32	0.79
Agribusiness Representative	2.23	0.83
Extension Service Publication	2.05	0.81

Source: Field Survey, 2014

The result of the binary logistic regression in Table 5 shows that at 5% level of significance, the hypothesis that the selected socio-economic variables have significant effect on the interest of farmers in receiving training is rejected. There was a significant change in -2 log-likelihood. This suggests that there was a significant cause-effect relationship between interest of farmers in receiving training and the selected explanatory variables. The Cox & Snell R square (coefficient of determination) (R^2) is 0.624. This indicates that 62.4% variation in the usage of indigenous post harvest processing and storage techniques is accounted for by variations in the selected explanatory variables, suggesting that the model has explanatory power on the usage of indigenous post harvest processing and storage techniques. The Nagelkerke R square (adjusted R^2) also supported the claim with a value of 0.813 or 81.3%. This implies that the selected explanatory variables explain the behavior of the interest of farmers in receiving training.

Table 5: Effect of Socio-Economic Characteristics of Farmers on their Interest in Training

Variable	B	S.E	Wald	Sig.	Exp(B)
Age	-0.288	0.043	0.038	0.084	1.008
Gender	1.393	1.100	2.367*	0.042	5.433
Farm income	0.368	0.054	3.562*	0.027	1.433
Education	0.450	0.050	4.022*	0.012	.951
Household size	0.290	0.134	1.457	0.131	1.337
Farm size	0.681	0.659	4.341*	0.042	2.047
Farm experience	-0.450	0.050	3.022*	0.031	.951
Extension contact	0.590	0.134	4.657*	0.021	1.337
Constant	1.081	0.985	1.205	0.072	2.047
-2 Log likelihood					152.231*
Cox & Snell R square					0.624
Nagelkerke R square					0.813

Source: Field Survey, 2014

*Wald statistics is significant at 5% level.

The result in Table 5 shows that the probability of interest of farmers in receiving training increases with gender, farm income, education, farm size, farming experience and number of extension contact.

The implication of this finding is that the male gender tends to have higher probability in receiving training than their female counterpart. Furthermore, the probability of the farmers having interest in receiving training increases with farm income, education, farm size, farming experience and number of extension contact.

Conclusion

The farmers that participated in the study had a high degree of formal education and had interest in more education. They rated their education programmes high in quality and placed a very high priority on agricultural credit, improved variety of crops, pest and diseases and soil fertility etc.

It is important to understand the farmer's attitudes towards various agricultural programmes as well as the prevailing dynamics in innovation and management practices.

Lack of technical knowledge at farm level causes low yields hence, in a highly competitive agricultural sector; farmers should be knowledgeable in new farming techniques and practices.

Extension education improves the lives of rural dwellers and is centered on putting the farmers in appropriate frame of mind, increased production of food, and cash crops using modern technology to enable self-sufficiency in food supply and attainment of food security. Effective extension education helps in capacity building to promote sustainable agriculture and rural development.

Recommendations

- In as much as the male are more receptive to training and should be encouraged to do more, there is the need to encourage the female to be interested in receiving training.
- Opportunities of getting formal education should be made available to the farmers in the study area as this will enhance their interest in receiving training.
- More extension agents should be deployed to the study area to help enlighten the farmers more on the need to receive training.

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