



ASN 53rd Annual Conference Proceedings (Sub-Theme: Agricultural Socio-Economics and Extension)

Perceived relevance of Farmer Field School Training (FFST) on cowpea production among small scale farmers in Kebbi State, Nigeria

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Abstract

The study assessed the perceived relevance of FFST on cowpea production among small scale farmers in Kebbi state, Nigeria. To this end, one hundred and forty-four (144) small scale cowpea farmers were randomly selected for the study. Data collected were analyzed using descriptive statistics such as frequency distribution, percentage counts, ranking and mean. The results revealed that majority (77.8%) of the farmers were married, more so, most of the farmers aged between 31-40 years with a mean age of 41 years. About 34.9% of the farmers had house hold size of 6-10 people with mean of 12, while 47.2% had farming experience of 11-15 years. Also, about 47.2% of the farmers had no formal education. All (100%) of the farmers had access to extension service. The farmers perceived relevance of FFST on their cowpea production practices include land preparation ($\bar{X}_w=3.59$), recommended spacing ($\bar{X}_w=3.50$), time of planting and method of pests and diseases control ($\bar{X}_w=3.39$), method of planting ($\bar{X}_w=3.28$), chemical weeds control ($\bar{X}_w=3.25$), identification of improved varieties ($\bar{X}_w=3.23$), grain treatment ($\bar{X}_w=3.08$), harvesting and processing techniques ($\bar{X}_w=2.94$), modern storage method ($\bar{X}_w=2.08$), selection of viable seeds, choice and method of fertilizer application ($\bar{X}_w=2.78$). However, age ($r=-0.218$), household size ($r=0.185$), educational level ($r=0.216$), farming experience ($r=0.040$) and marital status ($r=0.209$) had significant relationship with FFST received. Farmers perceived constraints include improper training time schedule ($\bar{X}_w=2.92$), farmers conservative attitude ($\bar{X}_w=2.81$), high level of illiteracy among the farmers ($\bar{X}_w=2.90$), inadequate training infrastructure ($\bar{X}_w=2.81$) and bad rural access roads ($\bar{X}_w=3.24$). The study recommended that, rural access roads should receive necessary government attention. Training for the farmers should be planned with them and they should be sensitized and encouraged to acquire adult education.

Keywords: Training, Cowpea, Farmer Field School, Small Scale Farmers

Introduction

Nigeria, over the years, in its quest to provide enough food for the ever-increasing human population has experimented various agricultural extension approaches. These according to Ilevhvaeje (2004) and Ogunwale (2004) include conventional ministry-based extension system, sector/ commodity focused extension system, project based extension system, university organized extension, integrated rural development approach, farmers' focused extension, unified extension (UAES) and training and visit (T & V) extension system. However, these approaches recorded some successes but were criticized on the ground that, the approaches were public dominated, production led, highly centralized, top down, expensive and monolithic (Dimelu and Okoro, 2011). Consequently, a more recent concept of farmer training approach called "Farmer field school" (FFS) has emerged. FFS is a paradigm shift from the traditional agricultural extension approach which was first promoted by the food and agriculture organization (FAO) in Indonesia in a small rice-based system between 1989-1990 and rapidly spread to other Asian countries (Ajayi, 2005). The commencement of the approach in Indonesia marked the pilot phase of the integrated pest management (IPM) programme, this was a response to devastation by insecticide-induced outbreak of brown plant hoppers on rice. The devastation was estimated at about 20,000 hectares of rice field in Java alone (NAERLS/ ABU, 2008). The government of Indonesia in order to contain this menace launched an emergency training

scale with option of very serious =4, serious =3, slightly serious =2, and not serious =1 was used to elicit information from the respondents. The values were added to get 10, which was divided by 4 to obtain a mean of 2.5. Any constraints with a mean of 2.5 or above was regarded as major constraints to FFS training participation. Meanwhile, those constraints with mean less than 2.5 were perceived as minor constraints.

Results and Discussion

Socio-economic Characteristics of Respondents: Entries in Table 4 show that majority (77.8%) of the respondents were married while 22.2% of the farmers were not married. This implies that cowpea farmers that received FFS training on cowpea production practices in the study area were predominantly married individuals. Table 1 further revealed that just (6.9%) of the respondents were less than 21 years of age, 19.4% of them were between 21-30 years of age and mean age of 41.04, about 41.7% of the respondents were between 31-40 years, 15.3% were in age brackets of 41-50 years, 12.5% of them were between 51-60 years while 4.2% of the farmers were about 60 years of age. This implies that greater proportion of the respondents were in their active productive age. Hence, capable of undertaken training activities. This is in line with the finding of Usman et al. (2015) that farmers at their youthful ages are more productive and can easily participate in any intervention geared towards increasing their level of output. Results in Table 1 also revealed that 34.7% of the respondents had household size of 6-10 people, about 27.8%, 16.7% and 12.5% of the respondents had 11-15 people, 16-20 people and above 20 people respectively. This implies that the respondents in the study area had large household size as this can serve as reservoir for cheap labour needed for cowpea cultivation. This substantiates the view of Agwu (2004), that relatively large family size of a farmer is an obvious advantage, as it enable the farmers to use family labour, thereby reducing labour cost.

Farming experience (Table 1), a greater proportion (47.2%) of the farmers had 11-15 years of farming experience, about 20.8% of them had 16-20 years of experience with mean of 18.5 years 15.3% and 16.7% had 10 years and above 20 years of experience respectively. It implies that most of the farmers had been into farming for a long period of time and hence farming is not new in the study area. Furthermore, about 47.2% of the farmers had no formal education, 29.9%, 13.2%, 5.6% and 4.2% of the farmers had attained primary, secondary schools, Diploma/ NCE and Degree / HND respectively. The implication is that education is generally considered as an important variable that can enhance farmers understanding and acceptance of new idea and practices aimed at increasing productivity. This agrees with the finding of Sabo (2006) who reports that formal education is generally considered as an important variable that enhance farmers' adoption of new technologies or practice.

Perceived Relevance of FFS Training by Respondents: Perception is about receiving, selecting, acquiring, transforming and organizing the information supplied by our senses (Chaiporn, 2005). It is important to note that perception is a continuous variable and it affects the farmers choice of training on a particular farming practices, depending on the relevance the farmer attach to a farming practices as evident in Table 2, respondents perceived land preparation technique ($\bar{X}_w = 3.59$) as the most relevant training received. It was followed by recommended spacing ($\bar{X}_w = 3.50$) and this ranked 2nd, also time of planting and method of pests and diseases control ($\bar{X}_w = 3.39$) were perceived very relevant training to their cowpea farming, method of planting ($\bar{X}_w = 3.28$) which ranked 5th as relevant training received by the farmers, chemical weeds control ($\bar{X}_w = 3.25$) and this ranked 6th as relevant training received by the farmers, identification of improved varieties was also perceived as relevant ($\bar{X}_w = 3.23$) training and it ranked 7th. more so, grain treatment ($\bar{X}_w = 3.08$), harvesting and processing techniques ($\bar{X}_w = 2.94$) were perceived as relevant training and ranked 8th and 9th respectively. Training on modern storage method ($\bar{X}_w = 2.80$) was also perceived as relevant by the farmers, selection of viable seeds, choice and method of fertilizer application ($\bar{X}_w = 2.78$) were perceived as relevant by the farmers. This finding implies that the farmers perceived the training on all the cowpea farming practices as relevant to their farming systems. This could be attributed to the farmers' realization of the crucial role improved farming practices play in increasing productivity, yield as well as improve socio-economic wellbeing of farmers.

Views of Respondents on Effect of FFS on their Cowpea Yield : Entries in Table 3 revealed, about 24.3% of the farmers admitted that they had very good increase in cowpea yield after receiving FFS training, more than half (57.6%) of them claimed that they had good cowpea yield increase, while 17.4% and 0.7% of them expressed that they had just slight and no yield increase respectively. This implies that, majority of the farmers were of the view that they obtained good yield increase in their cowpea and this can be attributed to the training they received. This concurs with Davis et al. (2010) and Nigat et al. (2013) who reported impact of FFS on crops yield in East Africa and Central Java.

Relationship between Socio-economic Characteristics and FFS Received: The variables in the hypothesis were tested using PPMC. Results of the analysis in Table 5 show that age ($r = -0.040$), household size ($r = 0.185$), educational level ($r = 0.216$), farming experience ($r = 0.04$) and marital status ($r = 0.209$) are significantly related to the FFS training received. This finding implies that younger farmers, farmers with large household size more educated farmers with more farming experience and married farmers were more likely to have more zeal to receive FFS training.

perceived Constraints of FFS training by Farmers: The study revealed that the respondents encountered various constraints, include improper training time schedule ($\bar{X}_i = 2.92$), conservative attitude of the farmers ($\bar{X}_i = 2.81$), high level of illiteracy among the farmers ($\bar{X}_i = 2.90$), inadequate training infrastructure ($\bar{X}_i = 2.81$) and bad rural access roads ($\bar{X}_i = 3.24$). The farmers claimed that, bad rural access road was one of the severe constraints in receiving FFS training. Bad rural roads made it difficult for the farmers to go to training centres. Improper training infrastructure, high level of illiteracy among the farmers, conservative attitude of the farmers and inadequate training infrastructure were considered to be severe constraints faced by the farmers in receiving FFS training in the study area.

Conclusion and Recommendations

The small-scale cowpea farmers in the study area were in their active productive age. Many of them have no formal education but a proportion of them had attained formal education ranging from primary school to tertiary education. The farmers perceived FFS training received on cowpea production practices as relevant and were of the view that FFS training has helped in increasing their cowpea yield.

However, bad rural roads, improper training time schedule and high level of illiteracy among the farmers were some of the major constraints militating against the farmers receiving FFS training. To this end, the study recommended that rural access roads should be given necessary attention by the government this will help to ease farmers' movement to training centres. Training time table should be planned in collaboration with the farmers so that convenient time for the training can be fixed for them. Small scale cowpea farmers should be sensitized and encouraged to acquire adult education, this will help them to understand the importance of improved farming practices and hence incorporate it into their farming systems to realize increased output.

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Table 1: Distribution of Respondents according to socio-economic characteristics

Variable	Frequency	Percentage	Mean
Marital Status			
Married	112	77.8	
Not Married	32	22.2	
Age (yrs)			
< 21	10	6.9	
21 – 30	28	19.4	
31 – 40	60	41.7	41.04
41 – 50	22	15.3	
51 – 60	18	12.5	
> 60	6	4.2	
Household size (No)			
< 6	12	8.3	
6 – 10	50	34.9	
11 – 15	40	27.8	12.49
16 – 20	24	16.7	
> 20	18	12.5	
Faming experience (yrs)			
< 6	-	-	
6 – 10	22	15.3	
11 – 15	68	47.2	18.5
16 – 20	30	20.8	
> 20	24	16.7	
Educational level			
No formal education	68	47.2	
Primary school	19	13.2	
Secondary school	43	29.9	
Diploma/ NCE	8	5.6	
Degree/ HND	6	4.2	

Source: Field Survey, 2016

Table 2: Perceived Relevance of FFS Training by small scale cowpea farmers

Variable	Perception Rating				(Sw)	(Σw)	Rank	Decision
	Not Relevant	Slightly Relevant	Relevant	Very Relevant				
Land preparation technique	1 (0.7)	5 (3.5)	46 (31.9)	92 (63.9)	51.7	3.59	1 st	Relevant
Method of planting	1 (0.7)	9 (6.2)	83 (57.6)	51 (35.4)	472	3.28	5 th	Relevant
Recommended spacing	1 (0.7)	14 (9.7)	41 (28.5)	88 (61.1)	504	3.50	2 nd	Relevant
Time of planting	4 (2.8)	12 (8.3)	12 (8.3)	76 (52.8)	488	3.39	3 rd	Relevant
Viable seeds selection	10 (6.9)	50 (34.7)	45 (31.2)	39 (27.1)	401	2.78	11 th	Relevant

Identification of improved varieties	10 (6.9)	20(13.9)	60 (41.7)	54(37.5)	156	3.23	7 th	Relevant
Chemical weeds control	6 (4.2)	12(8.2)	66 (45.8)	60(41.7)	468	3.25	6 th	Relevant
Selection & method of fertilizer application	19 (13.2)	30(20.8)	59 (41.0)	36(25.0)	400	2.78	11 th	Relevant
Pests and disease control	2 (1.4)	8(5.6)	66 (45.8)	68(47.2)	488	3.39	3 rd	Relevant
Harvesting and processing techniques	14 (9.7)	23(16.0)	64 (44.4)	43(29.9)	424	2.94	9 th	Relevant
Grain treatment	10 (6.9)	14(9.7)	78 (54.2)	42(29.2)	443	3.08	8 th	Relevant
Modern storage technique	24 (16.7)	16(11.1)	64 (44.4)	40(27.8)	403	2.80	10 th	Relevant

Source: Field Survey, 2016. Figures in parentheses are percentages, while Sw = Weighted Sum and \bar{X}_w = Weighted Mean Score

Table3: Distribution of Respondents based on their views of Role FFStraining played on their Cowpea Yield

Response	Frequency	Percentage
Very good increase	35	24.3
Good increase	83	57.6
Sight increase	25	17.4
No increase	1	0.7
Total	144	100

Source: Field Survey, 2016

Table4: Correlation test of relationship between selected socio-economic characteristics & training Received

Variable	Correlation coefficient (r)	p-value
Age	-0.218**	0.031
Household size	0.185**	0.040
Educational level	0.216***	0.001
Farming experience	0.040***	0.003
Marital status	0.209**	0.014

Source: Field Survey, 2016

Table 5: Respondents' Perceived Constraints to participation in FFStraining

Constraints	Mean score (\bar{X})	Decision
Improper training time schedule	2.92	Severe
Conservative attitudes of the farmers	2.81	Severe
High level of illiteracy among the farmers	2.90	Severe
Inadequate training infrastructure	2.81	Severe
Bad rural access roads	3.24	Severe
Training too technical	2.37	Not Severe
Unethical job attitude of facilitators	1.76	Not Severe

Source: Field Survey, 2016

