Moor Journal of Agricultural Research 17, 203 - 213, 2016

Analysis of Farmers Business School Training Effects on Cocoa Farmers' Record Keeping Practices in Southwest Nigeria

***Adeogun S.O., *Ayansina S.O. and *Bolarinwa, K.K.**
**Department of Agricultural Administration Federal University of Agriculture Abeokuta, Ogun State, Nigeria*
Corresponding Author: Email: stephendeog2007@gmail.com

Abstract
Farmer Business School (FBS) was introduced into the Nigerian cocoa sector in 2010 for cocoa farmers. From year 2010 to date, over 40,000 cocoa farmers have been trained on FBS concept in 6 cocoa producing states namely; Abia, Cross River, Edo, Ekiti, Ondo and Osun States. This study analyzed FBS training effects on cocoa farmers' Record Keeping Practices (RKPs) in Southwest Nigeria. Osun and Ondo states were purposively selected using purposive sampling technique being among the high cocoa producing states to obtain 256 respondents. In each state, two FBS schools were sampled using simple random sampling techniques from Idanre and Ile Oluji, Ede North and Ilesa East Local Government Areas (LGAs) in Ondo and Osun states respectively. The average number of farmers in each FBS school was 32; this resulted into 256 cocoa farmers selected as sample for the study. The study revealed that 58.3% of the respondents were male, 36.6% were over 50 years old with mean age of 42.5years and very few (17.5%) had tertiary education. Age and educational level of respondents were found to be significantly associated with farmers RKPs. The study recommended that FBS concept should be adopted across all commodities and states in Nigeria.

Key words: Record keeping; Farmer Business School; South west Nigeria; Cocoa farmers; Training

Introduction
Farmers Business School (FBS) concept was introduced in 2010 by German Development Cooperation (GIZ) to train cocoa farmers in Cameroon, Cote d' Ivoire, Ghana and Nigeria. To date, the approach has been successfully deployed to train over 225,000 cocoa farmers. In Nigeria, the approach was introduced to train cocoa farmers in five cocoa producing states namely; Abia, Cross River, Edo, Ekiti, Ondo and Osun States. The concept aims at changing the management behavior and investment decision of cocoa farmers with regard to farming as a business. Many farmers in developing countries conceptualize farming as mere tradition or development and not as a business.

The content of FBS training approach include; management of farms as an enterprise, basics of healthy nutrition and farm management for food security, planning, production and financial management, profit loss calculation of local and improved agricultural techniques, decision making to seize opportunities for increased income and diversification; how to obtain good financial services and benefits from membership in farmers organization. Furthermore, a farmer workbook is retained by the farmer after FBS training for practically recording information from his farm. These topics were designed to assist farmers in effective record keeping and farm management for higher yields translating in better and more diversified incomes. This position was supported by Arzeno (2004) when he opined that good record keeping is important, not only for

tax purposes but also for efficient farm management. Other relevant information include; well informed investment decisions as well as technical and managerial capacity to implement them. Using financial records and methodology will help male and female farmers to understand how and where their business is going and it can evolve. Record keeping and sound data interpretation will help you define the weakest links of farm business operation and enable you to start corrective action plans (Arzeno. 2004). Due to the success of the approach in West and Central African countries, the concept has been adopted in 9 other African countries to train cotton and rice farmers.

Okeke (2012) opined that record keeping is information that has been systematically and carefully collected and appropriately stored for intended use. To be able to run any economic enterprise successfully, carefully thought out, properly collected and kept records are a must (Okeke, 2012). He further stated that, for the purpose of keeping track and decision making in any economic enterprise, comprehensive and well-kept records must be kept. Mohammed *et al.* (2004) noted that farm record keeping is a key practice used by very successful farmers and vice versa. Okeke (2012) posited that accurately written farm records are very helpful farm management. Champman (2003) stated that a farmer who has a well-kept farm record is in a more vantage position to borrow needed funds than one who has no farm records. This is confirmed by Devonish *et al.* (2000) quoted by Okeke (2012) that more than half (57%) of a total of 160 farmers interviewed were keeping farm records. It can be said that their farm records helped them in obtaining farm loans and repayment of such loans.

The scenario described above is obtainable in the advanced countries where the study was carried out. This situation in a developing country like Nigeria is completely different from the one described by Devonish *et al.* (2000). In his own opinion while describing the situation obtainable in Nigeria, Dudafa (2013) stated that admittedly, Nigerian agriculture remains traditional and dominated by small farmers. He further posited that record keeping by farmers, an important part of the agricultural modernization scheme, has been largely disregarded in research and extension and added that in Nigeria, most farmers do not attach a great deal of importance to record keeping in their farming operations. Farmers often talk of profit and loss not on the basis of facts and figures derived from record books, but from intuition or guessing (Dudafa, 2013).

Muhammad *et al.,* (2004) noted that farm record keeping is a key practice used by very successful farmers and vice versa. Essentially, accurate written farm records are very helpful. Chapman (2003) and Iton (1999) stated that a farmer who has a well-kept farm record is in a more favourable position to borrow needed funds than one who has no farm records. Record keeping helps the farmer to define and evaluate success as measured by income generated for family living, retirement, reimbursement of loans, and other needs

and desires. Farm records are also essential for planning and decision making. It is also for income tax as record keeping simplifies tax reporting. It also helps to obtain credit. A good set of farm records allows determining credit needs and supporting loan requests. Properly kept records provide bankers the financial information they need for making credit decisions and good records also demonstrate farmers' management ability (Okeke, 2012).

Dudafa (2013) opined that, although the types of records kept by individual farmers depend to a great extent on the nature of their farming operation. The identification of four broad categories of records kept by the Kwara State Agricultural Development Corporation according to Dudafa (2013) appears to offer a model of records which should be kept by farmers, whether crop or poultry/livestock. These four broad categories include:

- **Inventory or Store Records**: These records are kept periodically and involve the physical count and evaluation of all assets and materials such as seeds, fertilizers, fuel, drugs, feed, machinery and implements, etc. The record books involved are the fixed assets register, stock transfer note, goods received note, and store requisition note.

- **Production Records**: Production records include inputs used for specified hectares of land and the outputs from such fields. In poultry enterprises, details include number of birds per pen, daily mortality, quantity of feed used and number of eggs produced. Performance plot by plot for crops, and pen by pen for livestock and poultry can be ascertained from such records,

- **Financial Records:** This includes salaries, wages and allowances. Purchases and sales are to be properly documented by receipts in this category. Financial records include sales day books, cash books, petty cash books and attendance registers.

- **Other Records:** Among other miscellaneous records are rainfall data (the amount and dates) and other records such as flood and draught occurrence.

Arzeno (2004) identified phases involved in record keeping that need to be put together in order to see the complete record keeping picture. The four basic phases or "puzzle pieces" for record keeping are:

1) Recording receipts and expenses.
2) Keeping and using inventories.
3) Recording crops and livestock information.
4) Analyzing the farm business and decision making.

Record keeping importance in efficient/ effective farm management cannot be undermined. Many farmers in Nigeria do

not perceive farming as business, many of the farms were inherited and farmers still carry out farming the ways their fathers who passed on the farms to them have been practicing farming in traditional ways. FBS was designed to help change farmers' orientation about farming, the concept also aimed at changing farmers' perception of cocoa farming as mere tradition or development to business. In addition, the concept also aims at increasing the record keeping practices of cocoa farmers in the area of farm record keeping. This study determined the effects of FBS training on farmers' record keeping practices and extent to which the training has helped to change farmers' perception of farming as a form of business and not mere development/tradition.

The general objective of the study is to analyse of Farmers Business School (FBS) training effects on cocoa farmers' Record Keeping Practices (RKPs) in Southwest Nigeria.

Specific objectives of the study were to:

1. describe the socio economic characteristics of the respondents;
2. ascertain if farmers keep record on farming activities after receiving FBS training;
3. identify farmers' activities affected by FBS training; and
4. compare the record keeping practices of farmers before and after receiving the training

The hypotheses of the study are stated in the null form as follows;

1. There is no significant relationship between the socio economic characteristics of respondents and their record keeping practices (RKPs) after receiving FBS training.
2. There is no significant difference in the recording keeping of cocoa farmers before and after FBS training.

Methodology

Cocoa famers were trained on the concept of Farmer Business School (FBS) in three cocoa producing states namely Ekiti, Ondo and Osun in Southwest Nigeria. Among these three states, two namely Ondo and Osun were randomly selected for this study. In each state, two FBS schools were randomly selected from two Local Government Areas (LGAs) namely; Idanre and Ile Oluji in Ondo state and Ede North and Ilesa East in Osun State making a total of eight FBS schools. The average number of farmers in each FBS group was 32. This gives a total of 256 cocoa farmers interviewed for the study. Out of this number, Questionnaire for 240 cocoa farmers representing 93.7% were completely filled by the respondents and used for the study analysis.

Ondo State

Ondo State, Nigeria was created on 3 February 1976 from the former Western State. It originally included what is now Ekiti State, which was split off in 1996. Akure is the state capital. The state is made up of eighteen Local Government Areas, the major ones being Akoko, Akure, Okitipupa, Ondo, and Owo. Majority of the state's citizens live in urban centers. Its land area is about 15,500 square kilometers. Ondo State is bounded in the east by Edo

and Delta states, in the west by Ogun and Osun States, in the north by Ekiti and Kogi States and in the south by the Bight of Benin and the Atlantic Ocean. The major occupation of Ondo people is farming.

Map showing position of Ondo State on Nigerian map.

Osun State

Osun State is an inland state in south-western Nigeria. Its capital is Osogbo. It is bounded in the north by Kwara State, in the east by Ekiti State and Ondo States, in the south by Ogun State and in the west by Oyo State. The people of the State are mainly traders, artisans and farmers. Their other occupations include making of hand-woven textiles, tie and dye clothes, leather work, calabash carving and mat-weaving.

Map showing position of Osun State on Nigerian map

Results and Discussion

The section below discusses the socio economic characteristics of the respondents. The socioeconomic characteristics discussed include; age, sex, marital status, educational level and cocoa farm size.

Table 1 shows the socio-economics characteristics of the respondents. The result shows that more (58.3%) of the respondents were male while female constitute 41.7% which is an implication that FBS methodology encourages the participation of female farmers unlike other interventions that are usually dominated by men folks. The presence of women as observed helps to sustain the adoption and utilization of knowledge gained (documentation of on-and-off farm activities) by the male folk. This finding deviates from the position of Tham-Agyekun *et al.* (2010) who reported that females' folks were represented by 28% in their study on Farm Record Keeping Behaviour among Small-Scalen Poultry Farmers in the Ga East Municipality of Ghana. According to them, although the

Table 1. Frequency Distribution showing Respondents' Socio-economics Characteristic

Variable	Frequency	Percentage	Mean value
Sex			
Male	140	58.3	
Female	100	41.7	
Age			
20-29 years	22	9.2	
30-39 years	60	25.0	
40-49 years	70	29.2	42.5
50-59 years	32	13.3	
60 years and above	56	23.3	
Marital status			
Single	25	10.5	
Married	210	87.4	
Widowed	5	2.1	
Educational level			
No formal education	32	13.3	
Adult education	12	5.0	
Primary education	72	30.0	
Secondary education	82	34.2	
Tertiary education	42	17.5	
Farm Size			
< 2 Ha	78	32.5	
2-5Ha	105	43.8	2.5
5-10Ha	45	18.7	
>10Ha	12	5.0	
Number of Children			
<3	67	27.9	
3-5	56	23.3	8
6-10	112	46.7	
>10	5	2.1	
Number of children assisting on farm			
None	168	70.0	
1-5	49	20.4	2
>5	23	9.6	

Source: Field Survey, 2013

ratio of females to males is low, it still shows that women have a fair representation in the poultry industry in the Municipality.

The mean age of the respondents was 42.5 years. Majority (63.4%) of the respondents represent age brackets of 20-49 years old which means that majority of the farmers belongs to the active age while few (23.3%) were 60 years and above. This finding is in agreement with that of Adeogun and Olawoye (2012) when it was reported that youth involvement is higher in cocoa production in Cross River State compared to other states investigated in the study. Table 1 also reveals that a high proportion of the respondents (87.4%) were married, this trend will help the farm family to sustain the knowledge gained and utilize it in making effective farm decisions that will positively results into efficient farm management. However, the result in Table 1 indicates that many (46.7%) of the respondents had between 6-10 children and 2.1% had above 10 children which implies that the respondents had a large household sizes which necessitate the need for them to perceive farming as business, handle it as such and make enough money to meet the needs of their farming households.

The results in Table 1 also show that majority (70%) indicated that their children do not assist them on the farm. This trend could be attributed to the wrong perception people have about farming as an activity meant for people living in abject poverty. In addition, Table 1 shows that majority (81.7%) of the farmers had at least primary education. This will help them to appreciate, utilize and sustain the knowledge gained from FBS training, since educational level has always played significant role in recipient and sustenance of innovations among farmers. Out of the 81.7% with formal education, only 17.5% went beyond secondary school education. This is in contrast to the findings of Tham-Agyekun *et al.* (2010) when it was reported that small-scale poultry farmers in a Municipality in Ghana have a high literacy rate since over 65% of the farmers had reached the secondary level and beyond.

On respondents' farm size, the results also indicated that many (43.5%) of the farmers have between 2 and 5ha of cocoa farm, while the mean farm size was 2.5ha. This shows that the farm size of farmers is small; hence the need for them to adopt innovation that will help them make more profit from their small farm size, an objective FBS was designed to achieve. This also agreed with the finding of Adeogun and Olawoye (2012) where it was reported that the mean farm size of farmers in five states investigated was 2.4 ha.

Farmers' Record Keeping Tendencies (RKPs) before and after FBS Training

FBS was designed to influence farmers' perception of farming activities with the aim of influencing their thinking in a direction that favours considering farming as a business. To achieve this objective, the act of record keeping in farming activities was given priority in the design of FBS manual. The following section below discusses farmers' record keeping tendencies before and after receiving FBS training as shown in Table 2. The farmers'

RKPs was measured at three levels of records taken regularly = High, those measured occasionally = Medium while those kept rarely = Low.

The results in Table 2 show that high proportions of the respondents rarely kept record on both agricultural and non-agricultural products before FBS training. However, majority (86%) of the respondents regularly keep records on fertilizer bought, seeds bought for planting (88.3%), herbicide bought (86.7%) with (82.8%) regularly keeping records on labour engaged in farming activities, income from cocoa and income from other crops. On the contrary, very few (6-25%) kept record regularly on all aspects of cocoa production activities, income from cocoa, other crops and non-agricultural products, this finding is in line with that of Dudafa (2013) who reported that slightly less than one-third of respondents (32.0 per cent) said they kept farm records of one form or another, although the percentage of respondent who kept records in Dudafa (2013) works was higher compared to the percentage of respondents who kept records in this work, the percentage in the two finding still appear too low.

Hypotheses of the study

Hypothesis one: There is no significant

Table 2: Frequency Distribution Showing Effects of FBS Training on Farmers' Record Keeping Tendencies (RKTs) before and after Training

	RKTs (Before)			RKTs (After)		
Recorded activities	Low (%)	Medium (%)	High (%)	Low (%)	Medium (%)	High (%)
Record keeping on fertilizer bought	70.7	23.0	6.3	8.0	6.0	86.0
Insecticides bought	70.0	19.5	10.5	6.3	10.2	83.2
Herbicides bought	71.1	8.6	20.3	7.0	4.7	88.3
Seeds bought for planting	61.0	14.8	24.2	6.3	3.9	88.3
Other services eg Telephone calls	61.7	13.3	25.0	7.0	39.4	55.9
Transportation	72.6	5.5	21.9	8.6	5.5	82.0
Labour engaged in farming activities	59.4	17.2	21.1	7.0	7.8	82.8
Household expenses	64.1	18.0	14.1	9.4	26.3	61.3
Happy Events	75.0	4.7	17.2	9.4	28.6	57.3
Unexpected Events	76.6	13.3	8.6	8.6	45.5	41.3
Income from cocoa	65.6	14.1	17.2	7.8	4.7	82.8
Income from other crops	70.3	11.7	14.1	7.8	34.7	52.8
Income from non-agricultural products	74.2	6.3	15.6	9.4	39.4	45.8

Source: Field Survey, 2013

association between respondents' socio-economics characteristics and their record keeping practices after the training

Table 3 reveals that there is no significant association between cocoa farmers' sex, age, marital status, number of wife, number of children, and number of children that help on farm and the extent of keeping records". The table shows that educational level ($\chi 2 = 14.291$, $p<0.05$) and age ($\chi 2=26.176$, $p = 0.036$, $p < 0.05$) of the respondents had positive effect on record keeping tendencies. This connotes that the better the educational level of farmers, the better the tendency to keep record of their daily farming activities. Also, younger farmers will most likely utilize the knowledge learnt from FBS to increase on their record keeping tendencies.

Table 3: Chi square analysis representing the significant association between respondents' socio-economics characteristics and extent of record keeping before and after training

Variable	df	$\chi 2$cal	P value	Decision
Sex	2	0.124	0.724	NS
Age	8	26.176	0.036	S
Marital status	6	4.225	0.121	NS
Number of wife	4	4.956	0.292	NS
Number of children	8	9.350	0.406	NS
Number Children that help on farm	4	6.564	0.476	NS
Educational level	6	14.291	0.027	S

Source: Field Survey, 2013, S: Significant, NS: Not Significant

Hypothesis Two: There is no significant difference between respondents' record keeping practices before and after receiving FBS training

Table 4 shows that there is significant difference in respondents' record keeping before and after training. This implies that the rate of keeping record increases due to FBS training session attended.

Table 4: ANOVA analysis representing the significant difference in respondents' record keeping before and after training

Variable	N	Mean of RKPs	S Dev	T value	P value	Decision
Record keeping before training	128	18.66	8.831	23.900	0.001	S
Record keeping after training	128	34.89	8.401	46.990		

Source: Field Survey, 2013, S: Significant, NS: Not Significant

Conclusion

The study shows that 63.4% of the cocoa farmers are within the age bracket 40 – 49 years which means majority of the respondents are in their active age. High proportion (81.7%) of respondents had formal education status, while few (11.7%) had no formal education. The study further found out that there is an increase in number of respondents' record keeping tendency on fertilizer bought (86%) after FBS training. Hypotheses testing showed that educational status and sex of respondents significantly affected their record keeping practices. Moreover, the study shows that there is significant difference in the respondents' record keeping practices before and after training.

Recommendations

Based on the conclusion of the study, it is recommended that;

- Considering the success stories attributed to FBS training in respect to its effects on Farmers' RKTs, the concept should be adopted across other states and adapted for other commodities in Nigeria. This is key to moving small scale farmers from subsistence to commercial approach to farming.
- During selection of participants for FBS training, the educational level and age of respondents should be considered since these variables are associated with their Farmers' RKTs.
- Literate and non-literate farmers should be encouraged to attend subsequent FBS training session. There should be more FBS training advocacy for farmers irrespective of their education level so that they can benefit maximally from the knowledge gained during FBS training session.
- Cocoa farmers need to be encouraged to take record of non-cocoa activities and non-agricultural activities to be in a position to evaluate the profitability of their activities and the entire enterprise
- All stakeholders involved in FBS training should consider organization of annual farmer's day awards for the best farm record keepers.

Farmers will be motivated to keep record if this is done. However, it must be stressed that records are only beneficial when they are analysed and the results used to make adjustments to achieve better performance.

References

Adeogun, S.O., and Olawoye , J.E. (2012). Information Sources to Cocoa Farmers on Cocoa Rehabilitation Techniques (CRTs) in Selected States of Nigeria. In Malaysian Cocoa Journal Vol. 7: 73-82

Arzeno, A. (2004). Record Keeping in Farm Management. In Extension Extra Cooperative Extension Services Pp 1-5. Retrievable online at http://agbio-pubs.sdstate.edu/articles/ExEx5054.pdf.

Champman, M.E.N. (2003): Keeping Farm records in Sudan, Historical Document Kansan Agricultural Experiment Station, (volume) Available online at. www.oznet.ksu.edu, retrieved on 4th June, 2014

Devonish, E., Pemberton, C.A, and Ragbir, S. (2000). Record keeping among small farmers in Barbados, Department of Agricultural Economics and Extension, University of the West India, on Augustine, Trividad and Tabago

Dudafa, U. J. (2013). Record Keeping Among Small Farmers in Nigeria: Problems and Prospects. International Journal of Scientific Research in Education, 6(2): 214-220.Retrieved [29/07/2014] from http://www.ijsre.com

Iton, A. (1999). *Small Farmer Participation in Export Targeting Production in the Windward Islands*, kOECS/EDU, Roseau, Dominica.

Muhammed S. Tegegne, F.J, Ekanem, E. (2004). Factors contributing to success of small farm operations in Tennessee State University Marshville, Tennessee. In Journal of Extension, Vol., 42 (4): 67-74

Okeke, U. (2012). Farm Record Keeping among Farmers in Orumban North Local Governemnt of Anambra State, Nigeria. In Journal of Agriculture and Veterinary Sciences. Volume 4: 57-62.

Tham-Agyekum, E. K., Appiah P., and Nimoh F. (2010). Assessing Farm Record Keeping Behaviour among Small-Scale Poultry Farmers in the Ga East Municipality. In Journal of Agricultural Science. Vol. 2, No. 4: 52-62. Retrievable online at www.ccsenet.org/jas.