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Accounting for Training Effectiveness: The Case of MIDA Training in Enterprise and Commercial Agriculture on Behaviour and Practices of Rice Farmer-Based Organisations

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Abstract

This study was designed to determine the effectiveness of a Farmer and Enterprise Training in Commercial Agriculture (FETCA) programme on behaviour and practices of rice farmers in the Sekyere East District of Ashanti Region of Ghana. For this purpose, the study adopted the Kirkpatrick framework as a guide in assessing training effectiveness and used the before- and after-tests to assess change in behaviour. Both quantitative and qualitative data were collected and analysed through descriptive analytical statistics and the z-test. The results of the study revealed that the MIDA-Farmer and Enterprise Training in Commercial Agriculture (FETCA) programme significantly upgraded the technical know-how of members of Farmer-Based Organisations (FBOs) to adopt key recommended production practices and improved their organisational capacity building behaviours. There is evidence of shared knowledge and experiences in production-based rice activities, building capacity and developing financial skills with colleague farmers, farm family and farm workers, indicating a multiplier effect of the FETCA programme. The results reinforces the view that focus on Organisational Capacity Building modules, Technical Capacity and Business Development modules, are important in FBO training programmes in Ghana.

Keywords: Enterprise training, Training effectiveness, Farmer-Based Organisations

Introduction

The basic aim of any training intervention is to effect some form of change. Farmer training is conducted with the view of changing behavior/improving performance through the acquisition of increased knowledge, improved skills and positive changes in attitudes and aspirations. According to FAO (1992), agricultural training programmes generally aim to change farmer trainees' behaviour through

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improved skills, increased knowledge and changes in attitude. It is done using different kinds of techniques, which include Lecture-cum-Discussion, Case Discussions, Group Discussions, and Exercises/Hands on Sessions and Field Visits. Sharing of learning experiences during training helps achieve a more effective performance in an activity or range of activities among the trainees.

To provide an insight to the usefulness of a training programme, an evaluation is conducted to obtain information on the effects of the training programme (Osei *et al.,* 2005). According to Kirkpatrick (1998), training evaluation may be conducted from four different perspectives: reaction (whether trainees appreciated the training), learning (whether trainees learned something new from training), performance (whether trainees applied what they learned) and results (impact on the institution/society). However, most training evaluations are conducted at the reaction or learning level to measure satisfaction within the training environment. Newtron (1978) contends that there is over attention in training evaluation to reaction and learning, with under attention to behaviour and results. An approach to training evaluation, which looks at use of the past experience of the training programme (performance level), allows one to assess the extent to which training is useful in the work environment. According to Marcotte *et al.* (2002), the Kirkpatrick framework is increasingly being used by training organizations to understand the impact of the training programmes even where the results are not very tangible in nature.

Clements (1999) posits that impacts mean change in behavior to policymakers. Barge (2007) indicated that educational programmes that are evaluated by conducting pre-and post- knowledge/ behaviour tests engage in higher-level impact evaluations. In doing this assessment, this study adopted the modified Kirkpatrick framework as a guide in evaluating training impact and used the before- and after-tests to assess change in behaviour.

The Millennium Development Authority (MIDA) is a five-year programme which aims at reducing poverty by raising farmer incomes through private sector led, agribusiness development (Ghana Center for Democratic Development (CDD-Ghana, 2006) in Ghana. The Agriculture component of the programme is designed to enhance the profitability of staple food and horticulture crops and to improve delivery of business and technical services to support the expansion of commercial agriculture among Farmer-Based Organizations (FBOs). A major activity of the MIDA Agriculture Project is the Farmer and Enterprise Training in Commercial Agriculture (FETCA) and the facilitation of credit services for on-farm and value chain investments (CDD-Ghana, 2006). As part of the capacity building efforts of the MIDA Agriculture Project, the College of Agriculture and Natural Resources (CANR) of the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi-Ghana as a Technical

Training Services Provider (TTSP), trained over 1,500 farmers from 29 FBOs between 2008 and 2010 in the development of commercial skills and building capacity among FBOs (Table 1).

Table 1: CANR FBO Training from 2008-2010

Year	2008	2009	2010	Total
No of FBO training	9	12	8	29
No of farmers trained	592	595	401	1588

Source: Authors compilation, 2010

The training sessions were conducted in the Sekyere East District of the Afram Basin Zone of the programme. They aimed at assisting FBOs to further develop their organisations as businesses, upgrade their technical knowhow to adopt recommended yield-increasing production technologies and improved post harvest practises. The training sessions covered ten Business Development (BD) modules, five Organisational Capacity Building (OCB) modules and four Technical Capacity (TE) modules for a period of six weeks (Table 2). Members of FBOs who had completed the MIDA training were assisted to access credit from rural banks. This was to facilitate the use of farming inputs such as seed, fertiliser and weedicides for increased productivity.

Table 2: Summary of Selected Modules in FBO Training

Week (WK)	Module Number	Title
WK 1	BD 1 BD 2 OCB 1/OCB 2	The MCA Ghana Compact and Course Objectives FBOs, Rural Development and Commercialisation Group Formation and Development /Credit Management
WK 2	OCB 3 OCB 4 OCB 5	Contracts and Procurement Business and Technical Communication Methods for Tracking FBO Progress
WK 3	BD 3 BD 4 BD 5	Value Chain Thinking Business Vision through a Value Chain Lens A Primer on Leadership, Governance and Management
WK 4	BD 6 BD 7	Developing Business Expansion Strategies Developing the Action Agenda
WK 5	BD 8 BD 9 BD 10	Driving Organisational Change Forward Completing the Action Business Plan Record Keeping/Farm Budget Financials of FBOs Business Plans
WK 6	TE 1 TE 2 TE 3 TE 4	Crop Production (maize, cassava, rice, vegetables) Environmental and Social Issues Safe Handling and Storage

The Problem

A critical issue with the MIDA agricultural training programme is whether project effort spent on farmer training has produced change in FBO and farmers' behaviour and practices. McDonald (1991) contends that

while support for training programmes is increasing, concern is also growing regarding the effectiveness and accountability of such activities. In many instances, the evaluation of MIDA-Farmer and Enterprise Training in Commercial Agriculture has been limited to simple reactions and learning of participants. Though these evaluations are found important in providing immediate feedback on the extent of achieving training objectives, they do not offer insight into the extent to which knowledge and skills (experiences) acquired during training are utilised after training. According to Osei *et al.* (2005), training evaluation conducted after participants are back to their work place and using what they learned is a more meaningful benchmark against which effectiveness of training should be evaluated. The objective of the study was therefore to determine the effectiveness of the Farmer and Enterprise Training in Commercial Agriculture (FETCA) on behaviour and practices of rice farmers in the Sekyere East of Ashanti Region.

Specifically, the study was aimed at answering four research questions:

1. Have the FBOs members' behaviour and practises changed after the Farmer and Enterprise Training in Commercial Agriculture (FETCA)?
2. Has the FETCA programme impacted on the organisational performance of the rice-based FBOs?
3. What is the multiplier effect of the FETCA programme experience on proximate rice farmers?
4. What were the constraints to use of knowledge/experiences acquired during the FETCA programme?

Methodology

Study Area

The study was undertaken in two communities, Nkwankwanua and Brofoyedu in the Sekyere East District of Ashanti Region. The communities were purposively selected because farmers in the two communities belonged to FBOs which received training under the FETCA programme and received credit services for their on-farm rice production. The communities also represent typical rice growing areas in the District which receive extension services from the Ministry of Food and Agriculture.

Sampling Frame and Sample

The sampling frame for the study included all rice farmers/FBO members who participated in the nineteen modules of the FETCA. The sampling frame was compiled from training reports submitted by CANR-KNUST to the Adventist Development and Relief Agency (ADRA), the regional implementation consultants (RIC). A total of 66 farmers, 2 agricultural extension officers and 2 officers of a rural bank were selected to constitute the sample. According to Philips (1996), the use of multiple data sources of information (farmers, extension officers and rural bank officials) or

triangulation improves upon the reliability and validity of information.

Data Collection

Data was collected by administering self-assessment questionnaire to 66 rice farmers who were recipients of the MIDA-Farmer and Enterprise Training and received credit services for on-farm rice production. Interview guide sheets were developed and validated to provide in-depth information from a purposively selected six FBO executives, two agricultural extension officers and two bank officials. Participatory tools such as Focus Group and Key Informant Interviews were also used in data collection.

Data Analysis

The Statistical Package for Social Sciences (SPSS) version? was used to analyse the data. Responses in the questionnaires were coded and subjected to descriptive statistics such as frequency counts and percentages. The Z-test was utilized in determining statistical inferences of increased farmers' knowledge/behaviour of the FETCA programme.

Results and Discussions

Extent of Change in Behaviour and Practises

To identify changes in technical and business development behaviours, FBO members were asked to assess their behaviour levels on a before-and after self reporting instrument provided. Table 3 indicates 13 knowledge/skill indicators that represent types of behaviour to be maintained or changed as a result of the FETCA programme. FBO members evaluation scores on before and after the FETCA programme provided some evidence that there is 'much' behaviour change in four out of seven Technical Capacity components of the programme (Table 3). These were planting in rows, use of appropriate spacing and application of fertiliser and herbicides. Also, FBO members indicated 'much' behaviour change in two out of six Business Development Skills (keeping farm records and accessing credit from the bank) components of the programme. The results indicate a positive change in FBO members' behaviours on 6 of 13 behaviour indicators. However, FBO members indicated 'little' behaviour changes in bund construction for water management in rice production and use of storage chemicals. Also they provided some evidence that there is 'little' behaviour change in pre-arrangement with traders in selling their produce and signing of contracts with their customers/buyers. The little or no change in FBO members' behaviour was seen in the areas that needed group/cooperative effort indicating a lack of cooperative behaviour among the FBOs.

Table 3: FBO Members Technical and Business Development Knowledge/Behaviours Before and After FECTA Programme

	Before training (%) Did I?				After training (%) Do I?			
Knowledge/Behaviour:	None 1	Little 2	Much 3	**Mean Score**	None 1	Little 2	Much 3	**Mean Score**
Technical Capacity (TC)								
Plant improved variety	85.96	8.77	5.26	**1.16**	21.43	19.64	58.93	**2.38**
Plant in rows	91.23	5.26	3.51	**1.65**	10.71	12.5	76.79	**2.66**
Use appropriate spacing	87.72	8.77	3.51	**1.19**	7.14	10.71	82.14	**2.75**
Apply fertiliser	87.5	8.93	3.57	**1.11**	7.14	12.5	80.36	**2.73**
Apply herbicide	45.61	43.86	10.53	**1.12**	5.36	21.43	73.21	**2.68**
Construct bunds for water management	85.96	8.77	5.26	**1.4**	60.38	13.21	26.42	**1.66**
Use storage chemicals	92.98	3.51	3.51	**1.21**	50	21.43	28.57	**1.79**
Business Development (BD)								
Keep farm records	89.47	8.77	1.75	**1.7**	7.14	21.43	71.43	**2.64**
Have market linkages	66.67	26.32	7.02	**1.21**	26.79	33.93	39.29	**2.13**
Sign a contract	84.21	10.53	5.26	**1.24**	48.15	31.48	20.37	**1.72**
Add value to my harvested crop	54.39	21.05	24.56	**2.38**	19.64	17.86	62.5	**2.43**
Access credit/loan	84.21	10.53	5.26	**2.66**	8.93	30.36	60.71	**2.52**
Repay my loan	87.27	1.82	10.91	**2.75**	14.55	40	45.45	**2.31**

The findings were corroborated by agricultural extension officers in the two communities who indicated that the farmers applied inputs such as fertiliser and herbicide. However the lack of improved rice seeds in the area led to some farmers planting the local varieties. They also confirmed farmers' efforts at row planting and using appropriate planting spacing. The rural bank servicing the two communities confirmed providing loans ranging from GH¢1000 (US$714) to GH¢7000 (US$5000) after the planting season. However, bank officials were not happy about the slow rate at which farmers were paying back their loans. The study has demonstrated a relationship between knowledge/experiences acquired in the FETCA programme and changes in behaviour and practises of FBO members. Several researchers (Rubin *et al*, 1989; Edmiston and Gillett-Fisher, 2006; Palojoki, 2007) have reported on correlation between knowledge and behaviour change from different content areas. An examination of such relationships has a practical significance for agricultural trainers in predicting the direction of participants' behaviour changes based on the training they acquire.

Effect of FETCA on the Organisational Capacity of the Rice-based FBOs

Table 4 provides evidence that FBO members' improved their Organisational Capacity Building (OCB) behaviours significantly as a result of the FETCA programme. After the FETCA programme, FBO members' OCB knowledge/behaviour scores increased from 24.5% to 94.8% for attendance to group meetings and 24.5% to 92.9% for involvement in group activities. Also, scores for members' involvement in the election of executive members increased from 17.5% to 89.4% and from15.7% to

87.12% for payment of dues. The z-test for differences between the before-and –after knowledge/behaviour indicators were all significant at the .05 level.

Table 4: FBO Members Organisational Capacity Building Behaviour Indicators Before and After FETCA Programme

	Before training (%) Did I		After training (%) Do I			
Knowledge/Behaviour indicators:	Yes	No	Yes	No	*Z*	*p*
Attend group meetings regularly	24.56	75.44	94.83	5.17	-8.23	0.000
Get involve in group planned activities	24.56	75.44	92.98	7.02	-7.98	0.000
Pay my dues	15.79	84.21	87.93	12.07	-8.29	0.000
Help develop and use a constitution	14.04	85.96	93.10	6.90	-9.11	0.000
Get involved in the election of executive members	17.54	82.46	89.47	10.53	-8.28	0.000

* Note. Significant at p<.05 (2-tailed)

The results indicate that increases in knowledge provision during the FETCA programme has resulted in positive effect on FBO members Organisational Capacity efforts. Given the increasing importance of OCB practices in strengthening FBOs in Ghana, this result reinforces the view that continued focus on OCB activities will be important in FBO training programmes. Results of the focus group discussions with key executive members indicated an increased attendance of FBO members to meetings. There was also a confirmation of increased involvement of FBO members in the activities of their FBOs and increased payment of group dues. These results corroborated responses by the sampled members of the FBOs.

Multiplier Effect of the FETCA Programme

Table 5a shows, FBO members responses to what training experiences they shared with non-participants of the FETCA programme. Experiences shared most by members were the production-based factors; row planting, appropriate spacing, fertiliser and herbicide application. Also, members rated high some shared experiences in financial management (proper record keeping and adding value to harvested crops) and organisational capacity building activities such as importance of group formation.

Table 5a: Experiences Shared with Non-participants of the FECTA Programme (N=65)

Indicators of Knowledge/Skills Shared	*Response	Percent
Plant improved variety	2	3.1
Plant in rows	50	76.9
Use appropriate spacing	55	84.6
Fertiliser Application	52	80
Apply herbicide	45	68.4
Construct bunds for water	2	3.1

management		
Proper record keeping	50	76.9
Safe handling of chemicals	10	15.4
Market linkages	12	18.4
Importance of group formation	25	38.4
Timeliness of agricultural operations	8	12.3
Adding value to harvested crops	15	23.7

*Multiple responses

Table 5b: Summary of Key FBO Executives Ranking of Information/Experiences from FECTA Programme (N=6)

Community	Ranking of Knowledge/ Experiences shared	Ranking of how it was shared	Ranking of whom it was shared with
Nkwakwanua	1. Plant in rows 2. Use appropriate spacing 3. Fertiliser Application 4. Herbicide application 5. Advantages in belonging to groups	1. Demonstrated skills in my farm 2. Discussed experience in social gatherings 3. Visited farms of colleagues to demonstrate learned skills	1. Colleague farmers 2. Church members 3. Other farmer groups 4. Farm family
Brofoyedu	1. Plant in rows 2. Use appropriate spacing 3. Herbicide application 4. Fertiliser Application 5. Group formation experience	1. Discussed experience in church/mosque 2. Used my farm as a demonstration 3. Discuss experiences during visits to farms of colleagues	1. Colleague farmers 2. Other farmer groups 3. Farm workers Farm family

Table 5b provides a summary of a focus group discussion with key executive members of the FBOs on information/experience shared, how it was shared and with whom it was shared. Results of the focus group discussions indicated that FBO executives shared information with colleague farmers, farm labourers, extension workers and farm family in that order of importance. Findings in Table 5b on knowledge shared corroborate the results in Table 5a. By sharing knowledge and experiences with others (colleagues farmers, other farmer groups, farm family and farm workers), there is a multiplier effect of the FETCA programme.

Constraints to use of FETCA Experience

Most FBO members (83.4%) indicated that there were constraints to use of acquired knowledge and skills. From Table 6, delay in accessing credit was mentioned as the most

common limiting factor to use of training experience followed by erratic rainfall. Insufficiency of the loan facility and poor health of some farmers contributed to little use of training experience. During the focus group discussion, participants expressed worry about the late disbursement of loans to beneficiaries which affected its proper utilisation. The executives also commented on the unreliable rainfall in 2009, which led to replanting of seed rice after late rains leading to increasing cost of production. When asked about the use of innovations, about 80% of members in the focus group discussion indicated that row planting was easy to adopt but was labour intensive leading to higher initial cost of production.

Table 6: Constraints to use of FECTA Experience

Constraints	N=65	
	*Responses	Percent
Delays in accessing credit	45	69.2
Erratic rainfall	21	32.4
Insufficiency of the loan facility	15	23.1
Flooded fields	15	23.1
Labour intensity of lining and pegging	3	4.6
High cost of labour	3	4.1
Ill health	6	9.2

*Multiple responses

Conclusion

The MIDA-Farmer and Enterprise Training in Commercial Agriculture (FETCA) significantly upgraded FBO members' technical knowhow to adopt some recommended practises and improved their Organisational Capacity Building behaviours. Given the increasing importance of Organisational Capacity Building (OCB) activities, Technical Capacity (TC) and Business Development (BD) skills/practices in strengthening FBOs in Ghana, the results of the present study reinforces the view that continued focus on OCB, BD and TC modules will be important in FBO training programmes in Ghana.

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