Emerging Agricultural Extension Approach among Local Ghanaian Farmers: Application of Paulo Frère’s Empowerment Education Model in Supervised Extension Projects

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Abstract

Public sector agricultural extension approaches in Ghana have been criticized as being ineffective in developing farmers’ capabilities to deal with their production challenges instead of providing education that empowers and enables the marginalized to attain their full potential. This study aimed at exploring those attributes of Supervised Enterprise Projects, a community development tool, which has been used by agricultural students to educate and empower local farmers. A multi-stage sampling technique was used to select three farmer-based organizations that benefited from the projects. Through focus group interviews the views of members of the farmer-based organizations were sought regarding the Supervised Enterprise Projects. The results of the study showed that farmers have positive views of the projects. The projects have helped to empower and develop the capabilities of the farmers to diagnose and identify their own agrarian problems and to create appropriate solutions. The effectiveness of the Supervised Extension Projects as an empowerment educational tool was attributed to the following central themes, which emerged from all the focus group discussions: confidence in the marginalized, dialogical process, inclusive and interactive participation, collective action and reflection. By incorporating these elements of Freire’s empowerment education model, the public sector agricultural extension service will be better equipped to develop the capabilities of rural folks.

Keywords: extension approach; empowerment; educational practice; marginalized; farmer-based organizations.

INTRODUCTION

Agriculture is the third largest sector of Ghana’s economy and accounts for a quarter (22.7%) of the country’s gross domestic product (Central Intelligence Agency, 2013; Ghana Statistical Service, 2013). Amezah and Hesse (2004) and MoFA (2003) note that over 90% of the country food production comes from smallholder farmers. However, a majority of the small-scale farmers has been found to lack the appropriate skills and knowledge required for efficient and effective farm productivity. Although the public sector agricultural extension in Ghana has been providing extension services to many of these small-scale farmers, the public sector has been criticized for utilizing ineffective approaches that fail to meet farmers’ needs (MoFA, 2002; Amezah and Hesse, 2004; Ntifo-Siaw and Agunga, 1994). Paulo Freire (1998, 2002) suggests that educational practices such as agricultural extension are a form of “cultural politics” that can make or destroy human capabilities. The Department of Agricultural Economics and Extension (DAEE), University of Cape Coast (UCC) has initiated and implemented Supervised Enterprise Projects (SEPs) to empower and develop human capabilities of both local farmers and students from the public sector agricultural extension service. Since 1994, about 500 Farmer Based Organizations (FBOs) have benefitted from the SEPs in Ghana (Kwarteng and Kwarteng, 2012). Many farmers reported that the SEPs have improved their human resource capabilities (Kwarteng and Kwarteng, 2012). However, little is known about those features of SEPs that are projecting it as an emerging extension approach among local farmers in Ghana. This paper aims to identify those attributes of the Supervised Enterprise Projects that account for its effectiveness and success among the local farmers.

LITERATURE REVIEW

The literature examined in this paper falls into two broad groups. The first group involves a review of Freire’s pedagogical theory of empowerment education. Second, the literature deals with previous and current public sector agricultural extension approaches, as well as SEPs as emerging extension approaches among local Ghanaian farmers.

Paulo Freire’s Educational Models

The concept of empowerment education can be traced to Freire’s work with illiterate Brazilian peasants in the late 1950s. Through his experience with these peasants, Freire learned and argued that the poor live in a “culture of silence” dominated by the ideas and values of others (Freire, 1998, 2002, 2004). According to Freire (2002), instead of
In his thesis, Freire describes two models of education: the banking concept of education and empowerment education (Freire, 1998, 2002, 2004). The banking approach to education is a metaphor used by Freire and suggests that learners are considered empty bank accounts that should remain open to deposits made by the teacher. Freire (2002, 2004) emphasizes memorization as a key element of banking education. In banking education, the teacher plays an active role, while learners or students assume passive roles in their teacher-student relationship. The banking approach, therefore, promotes oppressive practices and dehumanizes both the teacher and the learner. While education as a transformation process requires free dialogue and sharing of experience, the banking concept of education makes the student/learner a “silent observer”. The students are not encouraged to generate their own thoughts or critical thinking. In this way, the students are trained and domesticated to memorize and mimic the teacher. Instead of promoting dialogical communication, the teacher communicates and deposits, while the students patiently receive, memorize, and repeat (Freire, 1998, 2002, 2004).

In order to address the weakness of the banking concept of education, Freire proposed an alternative form of education: empowerment education (Freire, 1998, 2002, 2004). Empowerment education focuses on the student and disengages those attributes associated with banking education. Freire underscores three main stages in the empowerment education model: i. generate group theme ii. problem posing and iii. act-reflect-act (Rindner, 2004; Freire, 2002). Freire (2002, 2004) coined the first stage of the empowerment process as “generate group theme”. The first stage presents a crucial platform because it recognizes people as the richer resources for learning. According to Freire, “generate group theme” requires dialogue. However, dialogue in itself is a cooperative activity that involves sharing. Through cooperative dialogue, students or learners are empowered to focus their attention on the reality that poses a problem and their needs become organized and developed by both the teacher and the students.

Freire (2002) refers to his second stage of empowerment education as “the problem-posing stage”. In problem posing, people develop their power to critically perceive the way they exist in the world and in which they find themselves. During problem posing, group facilitators introduce to the culture circle(s) thought-provoking questions and/or scenarios that enable the marginalized to become fully conscious (Freire, 2002; Rindner, 2004). Facilitating critical reflection as an essential component of educational practice promotes learning. “Praxis”, also termed “act-reflect-act”, is the third stage of Freire’s empowerment education model (Freire, 1998, Rindner, 2004). The “act-reflect-act” process is the extracurricular experience in that students enter their communities to apply their learning experience in real-world settings. According to Freire, the act of critical reflection promotes the testing of a hypothesis and of what worked and what did not (Rindner, 2004). The final product of the act-reflect-act process is strengthening of the students to graduate from their educational experience with the skills and confidence to tackle their own challenges. Freire (2002) hypothesized that educational practice such as agricultural extension can develop or unmake human capability. In the next section, the author reviews the approaches of agricultural extension in Ghana.

Agricultural Extension Approaches in Ghana
Agricultural extension in Ghana has mainly been in the domain of the public sector, namely the Ministry of Food and Agriculture (MoFA) (MoFA, 2004). Agricultural extension as a system assists farm families through educational activities in improving farming techniques, increasing production efficiency and income, and bettering the living, social, and educational standards of rural people (FAO, 2001). While different agricultural extension approaches have been applied in Ghana, the three main approaches employed by the public sector, MOFA, include the General Agricultural Extension Approach, Training and Visit (T&V) System, and the Decentralized Extension System (MoFA, 2002; MoFA, 2004). The first two approaches have been applied in the past, while the General Agricultural Extension Approach is the current extension approach.

The General Agricultural Extension Approach is the traditional extension system practiced by the public sector of the Ministry of Food and Agriculture with the Government of Ghana bearing most of the cost involved (MoFA, 2004; Ntifo-Siaw and Agunga, 1994). The main goal of this approach is to increase the productivity of subsistence farmers who grow different food crops. This approach assumes that information and technology are available that are not being used by small-scale farmers. It was hypothesized that agricultural productivity would increase if this information and technology were to reach local farmers (Amezah and Hesse, 2004; FAO, 2001). A large field staff employed in various agricultural development units, located in the districts, regions, and national headquarters, is responsible for introducing the innovations to local
programs were set at national, regional, and district levels to the district level. The main objectives of this approach are to promote responsibilities, participation, and program ownership at the district level (MoFA, 2004). However, the Decentralized Extension System does not emphasize decision making by key stakeholders, the farmers (MoFA, 2003; MoFA, 2004).

Evaluation of the effectiveness of the public sector extension approaches has indicated general dissatisfaction (Ntifo-Siaw and Agunga, 1994; Amezah and Hesse, 2004; MoFA, 2002). Almost all approaches in one way or another have placed much emphasis on technology transfer, though many of the extension field workers were not properly trained and, thus, there was a lack of extension staff supervision and regular visitation of farmers. The T&V System prescribes a fixed number of visits to farmers, regular supervision, and in-service training of extension field staff. The T&V System was also found to be characterized by a top-down approach (Ntifo-Siaw and Agunga, 1994; Amezah and Hesse, 2004). The Decentralized Extension System was adopted and implemented in 1997 (MoFA, 2004) to address the problems associated with the previous extension approaches. The Decentralized Extension System assumes that farmers’ challenges could be understood and solved better at a local level (MoFA, 2004). With the Decentralized Extension System, the power and decision to plan and implement extension programs have been transferred from the national and regional levels to the district level. The main objectives of this approach are to promote responsibilities, participation, and program ownership at the district level (MoFA, 2004). However, the Decentralized Extension System does not emphasize decision making by key stakeholders, the farmers (MoFA, 2003; MoFA, 2004).

In this study, the agricultural students spent six months in their communities to facilitate proper functioning of members of three different agro-processing based organizations. One of the groups is located in KEEA and the other two are located in Assin district. All three groups were engaged in gari processing. Members of the processing groups were faced with health, financial, and product quality challenges due to the use of inappropriate technology in processing the gari. Members of the FBOs processed their gari on traditional stoves. A traditional stove usually consists of three legs of stones that protect an open fire. A cooking pot is often put on the top of the stove. According to Tata Energy Research Institute (1982), the flames from the stove lick its sides when the cooking pot is too close to the fire. Because the stove uses open fire, its efficiency is low. The smoke from the fire is noted to cause eye irritation and respiratory disease. Burns and scalds are also suffered by the processors during the frying of the gari. Members of agro-based organizations needed locally made processing technology that would address challenges. The six-month SEPs by the agricultural extension students helped the members of the processing groups to develop smokeless stoves that addressed specific challenges. The smokeless stove has many advantages (Tata Energy Research Institute, 1982). The stoves hardly produce smoke during operation. There is increase efficiency of the smokeless stove due to maximum heat transfer from the flame to the cooking pot. There is also reduced demand for firewood, and firewood cost is reduced. The stove has multiple cooking stations such that less time is required to prepare a lot of gari at a time.

**METHODOLOGY**

**Research Design and Method**

A focus group design was used to examine farmer-based organizations’ view about the SEP. A focus group interview is an interview with a small group of farmers (MoFA, 2004; Ntifo-Siaw and Agunga, 1994).

The T&V System is the extension approach that replaced the General Agricultural Extension Approach. The T&V System was first adopted in Ghana in 1978 and was designed to address some weaknesses associated with the General Agricultural Extension Approach (Ntifo-Siaw and Agunga, 1994; Amezah and Hesse, 2004). The T&V System assumes that extension workers were not properly trained and, thus, there was a lack of extension staff supervision and regular visitation of farmers. The T&V System prescribes a fixed number of visits to farmers, regular supervision, and in-service training of extension field staff. The T&V System was also found to be characterized by a top-down approach (Ntifo-Siaw and Agunga, 1994; Amezah and Hesse, 2004). The Decentralized Extension System was adopted and implemented in 1997 (MoFA, 2004) to address the problems associated with the previous extension approaches. The Decentralized Extension System assumes that farmers’ challenges could be understood and solved better at a local level (MoFA, 2004). With the Decentralized Extension System, the power and decision to plan and implement extension programs have been transferred from the national and regional levels to the district level. The main objectives of this approach are to promote responsibilities, participation, and program ownership at the district level (MoFA, 2004). However, the Decentralized Extension System does not emphasize decision making by key stakeholders, the farmers (MoFA, 2003; MoFA, 2004).

Prior to the development of SEPs, a majority of agricultural extension workers lacked the knowledge and skills in participatory approaches and human development. The supervised enterprise projects are practical agricultural educational activities (projects) that aim to prepare the extension students to meet the real needs of rural communities (Kwarteng and Kwarteng, 2012). The SEPs work in the following way. The SEPs utilized principles that promote human capability development of the key stakeholders (students and farmers) to fully deal with challenges in their communities. The SEPs’ principles are based on the philosophy of experiential learning: a combination of theory, experience, and critical reflection. The SEPs involves three distinct but interdependent phases including planning, implementation, and evaluation. In the planning phase, students take courses that enhance conceptual understanding of action research, empowerment, group formation, and critical thinking. It is during the implementation phase that students spend six months in their communities practicing what they have learned during the planning stage.

The Practice of Supervised Enterprise Projects

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people on specific topics (Patton, 2002; Krueger and Casey, 2000). Unlike one-to-one interviews, focus group participants have the opportunities to hear each other’s responses and to make additional comments beyond their own original responses. Group members tend to influence each other by responding to ideas and comments in the discussion. Focus group interviews have many advantages for qualitative inquiry. Firstly, focus group interviews are widely accepted because they produce believable results at a reasonable cost. The group is also focused by being homogenous, and the facilitator is focused by keeping responses on target. They are useful in the evaluation process before, during, and after a program to obtain valuable data on program outcome and performance (Denzin and Lincoln, 2012; Patton, 2002). Data quality is enhanced, as interaction among participants tends to provide checks and balances on each other.

The participants involved in this study were drawn from farmer-based organizations (FBOs) that benefited from the SEPs. A multi-stage sampling technique was used to select three (3) FBOs. First, a simple random technique was used to select a Central Region from the ten regions in Ghana. Out of five FBOs that benefitted from the SEP in the Central Region, three FBOs were randomly selected. All the three FBOs were engaged in agro-processing. The study was conducted in May, 2013. Three focus group interviews were conducted with the three groups. The average size of each of the focus groups was 15. The researcher facilitated the focus group interview, while another observer took detailed notes and tape-recorded. The following topics were used to stimulate the interview regarding the FBOs’ views about SEPs.

1. How do you feel about SEPs in general?
2. What components of the SEPs do you like?
3. Would you like to talk about those aspects of the SEPs you found most useful?
4. How have the SEPs affected you in terms of knowledge, skill, and achievement?
5. How have SEPs affected you in ways other than skill, knowledge, and achievement?

DATA ANALYSIS
Transcription, coding, and categorization of focus group data were the main qualitative data analysis methods employed by the researcher (Denzin and Lincoln, 2012; Patton, 2002). The researcher went through transcripts line by line and paragraph by paragraph, looking for significant statements and coded the statements according to the topic addressed. The researcher then compared the various codes based on the differences and similarities and sorted them into categories. Based on Freire’s empowerment education model, the researcher finally formulated the categories into four themes: Confidence in the marginalized, Dialogical process, Inclusive and interactive participation and Collective action and reflection.

FINDINGS AND DISCUSSION
Public Sector Agricultural Extension Approaches
Previous and current extension approaches by the public sector in Ghana have been found to pay less attention to the human development aspect of farmers (Ntifo-Siaw and Agunga, 1994; Amezah and Hesse, 2004; MoFA, 2002). The use of outmoded teaching methods, which Freire (2002) termed as the “banking” concept of education, have characterized the public sector extension approaches. With the banking concept of education, farmers are viewed by the public sector extension agents as empty accounts that need to be filled because the farmers are transformed into receiving objects; their thinking and attitudes are controlled; and their creativity is inhibited. This situation has resulted in little or no attention being paid to addressing farmers’ real needs. According to Freire (1998, 2002), the system of dominant social relations within banking education creates a culture of silence among farmers. Farmers simply accept whatever technology extension staff brings to them, and they do not really learn or gain new knowledge to solve their own challenges. The lack of active participation by farmers has led to no or less knowledge acquisition, creativity, and invention (Freire, 2002).

Supervised Enterprise Projects: An Emerging Extension Approach
Freire’s empowerment education model has been applied in many social intervention projects including health literacy improvement among low-income mothers, and minority youth engagement leadership projects (Delp, Brown, and Domenzain, 2005; Porr, Drummond, and Richter, 2006). Utilizing focus group interviews, this paper examines FBO members’ views about the SEPs in their communities. Most of the members of the FBOs who participated in the focus groups were females (80%), aged between 20 and 50. The findings of this study were presented using themes. The four main themes that emerged from the participants’ responses are reported as follows: Confidence in the marginalized, Dialogical process, Inclusive and interactive participation, and Collective action and reflection.

Confidence in the marginalized
Rural people are often seen by change agents as lacking required knowledge and skills for development. However, in their lives rural people have amassed a large body of knowledge and experience in their environment over the years (Warren, 1993). Many of the study participants reported that the change agents remarked positively about their abilities. The change agents had avoided using snap judgments and stereotypical ways of looking down on their intelligence. The study
participants reported experiencing feelings of high self-esteem due to change agents’ positive perception and acknowledgement of their potentials. According to Freire (2002), the process of human empowerment begins when educational practices recognize that affected people are endowed with rich skills and knowledge in order to develop themselves and their communities. The change agents implemented Freire’s empowerment element of “generate group theme” by cultivating confidence in people with whom they worked. Rather, as teachers, the change agents assumed the roles of facilitators. They facilitated formation of dynamic groups in their communities and instructed members of farmer-based organizations to learn the concepts of group dynamics, cohesion, and leadership.

**Dialogical Process**

The dialogical process emerged as a main theme in the findings of this study. A majority of participants felt their voices had been heard during planning and implementation of their projects. The study participants reported an increased level of communication during the SEPs as a result of increased levels of mutual and shared communication. Freire (2002, 2004) points out that a dialogical process is an instrument that helps to liberate the colonized by fostering cooperation, unity, organization, and cultural synthesis. The change agent implements the dialogical process of the empowerment education model by promoting equality in communication. The facilitator encouraged brainstorming, group discussion, tolerance to others’ views, and feedback to promote dialogical interaction among members of the groups. This has led to shared understanding of procedures and expectations of the group projects. There was equality in communication, whereby both the change agents and members of the FBOs experienced mutual creation and interpretation of verbal and non-verbal behaviors within a specific context such as planning and implementing during SEP.

**Inclusive and Interactive Participation**

This theme emerged from the focus group discussion where the participants describe their experience as all-inclusive. Almost all the participants reported their inclusion and participation in the SEPs from the initial stage to the end. The participants reported that the extension agents were seen as facilitators and provided a platform on which thinking, creativity, and active participation were encouraged. SEPs processes ensure interactive participation of beneficiaries in the planning, implementation, and evaluation stages of the projects that affect them. Literature in the field suggests that interactive participation reinforces trust, empowerment, collaboration, feelings of ownership, and builds a strong base for the intervention among members of the FBOs (Rabinowitz and Berkowitz, 2013; Freire, 2002). The SEPs interactive participation encourages members of the FBOs to run their own meetings, to analyze data, and to construct strategic plans.

**Collective Action and Reflection**

The category “collective action and reflection” emerged from all the focus discussions where almost every participant described their collective actions and reflections on the intervention as crucial during the planning, implementing, and evaluating phases. The act-reflect-act stage of the empowerment educational model is a recurring action and reflection process that enables students to learn from their collective actions to bring about change. The study participants remarked that both the facilitators and members of the farmer-based organizations carried out situation analysis to understand the real challenges facing the group. This was followed by needs assessment, development and implementation of projects to address farmers’ needs. In empowerment education, it is important that the affected people understand the complexity of their problems as well as the link between the problems and the larger system. The facilitators, together with the farmer group members, reflect critically on the practicality of their project goals and the strategic plans needed to achieve these goals. The literature suggests that problem posing increases students’ independence and reduces their reliance on their teachers (Cunningham, 2004).

**CONCLUSION**

In recent decades, the US land-grant universities have expanded their core activities of education and research to include human resource development and technology transfer in their communities (USDA, 2006). Unlike the practice of cooperative extension service by the US land-grant universities, many higher educational institutions in developing countries only engage in teaching. The DAEE has adopted an extension model, the SEPs, which are similar to the US model of cooperative extension. SEPs serve as a prominent application of Freire’s empowerment education model in the field of agricultural extension that aims to develop the capacities of both extension professionals and farmers. Through the SEPs, the members of the FBOs learned to develop their capabilities and took collective actions to solve their conditions. The SEPs is emerging as a successful extension approach among local farmers in Ghana. Although the study employed a qualitative approach, study participants were selected using a multi-stage simple random technique. The findings of this study can be transferred to FBOs, particularly agro-processing groups that benefitted from the SEPs, sharing related experiences. The author suggests that public sector extension services should incorporate Freire’s principles of empowerment education to develop the human capabilities of farmers and rural folks.
One limitation of this study was that the FBOs selected for the study were agro-processing groups. The agro-processing group is only one of the different groups that benefited from the SEPs. The views of other groups including producers and marketers regarding the SEPs might not be captured. It is recommended that further study be done to include different farmer-based organizations.

REFERENCES


MoFA. (2003). Review and replanning the decentralization process of MoFA. Agona Swedru: MoFA.


