

Analyzing The Need For Vocational Training To Improve Agricultural Production For Small Scale Producers In Uganda

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Abstract

The purpose of this study was to determine the need for vocational training to improve agricultural production among small scale producers in Uganda. Triangulation method was used. A survey instrument, focus groups and interviews were used to collect the information from N=147 participants. Uganda is faced with a shortage of extensionists to disseminate information to farmers. Ninety percent of the participants indicated that they had not seen extension agents in their rural communities. Researchers disseminate their findings and field extension workers teach community members modern principles and practices essential for increasing agricultural production. Field extension workers also play an important role in educating the public about HIV/AIDS, improved nutrition, and poverty reduction techniques. According to the survey conducted, farmers hear about them but they are never available for consultation. The need for vocational training is crucial for programs in rural communities that match their skills to improve agricultural production and management. The emphasis of educational training in the new millennium must be on learning how to learn and on the provision of basic skills that will last the individual a lifetime. Technical training will play an important role in preparing people who can contribute to their own economic and social well-being.

Introduction

Uganda gained independence in 1962 after being colonized by the British for many years. Colonial rule affected local economic systems dramatically, in part because the first concern of the British was financial gain from natural resources. There is no doubt that one of the most significant problems facing developing nations is illiteracy and abject poverty. Uganda's population is in a period of continuous growth as a result of improved health services and reduction in the spread of HIV/AIDS (UBS, 2004). Peasant agricultural production has been the predominant economic activity since pre-colonial times (Leggo, 1994).

Over 65% of the farmers are small-scale producers living in rural areas. The improvement of agricultural production will not only result to additional income to small scale producers but also create employment and reduce urbanization. Agriculture continues to decline everyday, partly from shortage of labor, poor technology use, urbanization, and farm sizes due land use (New Vision, 2005). A substantial part of the failure of agricultural production to keep pace with population growth in Uganda and in most of Africa is due to the failure to increase

agricultural productivity. Households that depend on agriculture are among the largest group of impoverished Ugandans (FAO, 2003).

Agricultural extension services are not adequately reaching rural women. For the most part, extension policies do not specifically identify women as an integral part of the target audience. This is often due to misconceptions about, and prejudices against, the actual, traditional beliefs and values and ideal roles of women. Traditional extension methodologies may not be appropriate for working with rural women (FAO, 2001). Women in addition face barriers in their access to tertiary (university and college) or formal education agricultural education. As a result they are under-represented in research, extension and educational institutions.

Uganda inherited the British educational system. The educational system in Uganda is not enforced but highly recommended. Four levels of educational systems are practiced that include: primary for seven years; lower secondary for three or four years; upper secondary for two years; and postsecondary consisting of university, teachers' colleges, or commercial training. Pupils share expenses with the central government in primary and lower secondary levels; thereafter, education is free.

Despite of Uganda's favorable soil conditions and climate, agricultural production is still low. Technological improvements have been delayed by economic stagnation, and agricultural producers still employing primarily unimproved methods of production on small, widely scattered farms, with low levels of capital outlay (World Bank 2005). The single most significant cause for the persistence of low productivity in Uganda agriculture is probably the extremely low level of fertilizer use, cultural beliefs, customs and resistant of producers to adopt new innovations due to traditional practices (Gladwin et al. 1999).

Theoretical Framework

Vocational education is an important part of the education systems in Uganda. The system is very popular in modern Germany: in 2001, two thirds of young people aged fewer than 22 began an apprenticeship, and 78% of them completed it, meaning that approximately 51% of all young people under 22 have completed an apprenticeship. Before developing any academic curriculum, careful consideration should be given to the perception of students who will utilize technology. Offering vocational training in the community, students gain the ability to retain skills that they have acquired. Borne and Moss (1988) indicated that providing students basic training leads effective preparation towards tertiary education.

Vocational training however has not worked well in Uganda to solve the problem of shortage of skilled labor force. The main weaknesses in this program are its lack of relevance, poor funding for expensive training schemes, and inequality of opportunity for those in need. Vocational training should be made for agricultural technical schools giving training of satisfactory duration in farm skills, agricultural production and marketing, farm operations and management, and other appropriate subjects (Findlay, 1992). Short courses should be offered and timed in accordance with local needs and should not be a substitute for longer courses where these are possible and desirable.

Rogers (1995) identified five categories of adoption of new technology and as an element in the diffusion of new ideas is time. There are five adopter categories, or classifications of the members of a social system on the basis of their innovativeness: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. Through vocational training programs, rural farmers can be in a position to understand and adopt change. The laggards, (33%) of farmers in Uganda are still resistant to change due to lack of technical training and traditional beliefs (USAID, 2006). Rogers' (1995) Individual Innovativeness Theory suggests that individual's react differently to change based on a stable trait or predisposition.

Knowles' (1984) theory of andragogy emphasize that adults are self-directed and take responsibilities for their own decisions. Knowles theory of andragogy indicated four assumptions of ways to design adult learning. These assumptions include: 1) adults need to know why they need to learn something (2) adults need to learn experientially, (3) adults approach learning as problem-solving, and (4) adults learn best when the topic is of immediate value. This theory is applicable to this study since the majority of the participants were adult learners and age between 26 and 30 years old. Adult learners have lifelong experiences and therefore experiential learning is very vital. Experiential learning provides valuable information for adult learners in most districts of Uganda. Rural farmers in Uganda based on information prefer learning by doing or development of demonstration plots. Knowles principle of readiness to learn ensures learners are appreciating what they learn and practical application of the information.

Purpose and Objectives

The purpose of this research has identified the need of vocational training to improve farming practices among rural farmers in Uganda. Three objectives were developed to guide this study.

1. Describe demographic characteristics of small scale producers in Uganda
2. Determine the barriers associated with low agricultural productivity and adoption of technology
3. Determine the future role and benefits of vocational training towards post secondary education and agricultural programs

Methodology

An instrument was developed by research based on the objectives of the study. The purpose of the study was to determine the barriers of developing and advantages of providing vocational training for small scale farmers in Uganda. The data was collected from three different sources. The researcher used questionnaire instrument, focus group and interviews. The participants were asked to fill out the questionnaire including the following sections: demographics, farm rights, and cultural beliefs, future of agriculture and education level. The demographic information section asked the following: sex, age, education level completed, number of children and tribal membership. There were 40 questions in the questionnaire divided into sections. Participants were assured of confidentiality of information they provided. The participants of the study were chosen from the six districts the researcher visited. These included,

Mbale, Tororo, Kapchorwa, Lira, Pallisa and Kumi districts. The validity of the instrument was established by means of face and content validity. A panel of experts was identified including graduate students and faculty committee analyzed the content of the instrument. The face validity was established by agricultural researchers and teachers within the six districts in Uganda.

A Likert-type instrument was created using Microsoft Word. The instrument was completed by the total population of this study (n=90). The researcher made sure the survey instrument was clear, easy to respond to, and not too time consuming to complete. Demographic data were gathered from all participants. Demographic data gathered on the participants consisted of tribe, age, gender, number of children, education level, years engaged in agricultural production, household size, and farm size. Other instrument questions included: perceptions of support; communications; farm rights; crops and livestock. The total instrument consisted of 40 questions.

The remaining objectives from this study were investigated through qualitative design. The researcher used triangulation method to gather information for this study. Procedures included five focus groups with 37 total participants, completed survey (n=90), and one-on-one interviews (n=20). The total population for this study was 147. Qualitative research generally seeks to reveal categories, concepts, or understandings that are internal to the group or the domain being studied (Berg, 2004). Qualitative methods are designed to allow research subjects, usually called "respondents" or "informants," to construct for the researcher their own understanding of the issues at hand (Denzin & Lincoln, 2000). Qualitative research methods provide an in-depth understanding of individual experiences, perspectives and histories in the context of their personal position or settings (Berg, 1989).

Focus group participants included rural farmers, nongovernmental and government officials. The selections of participants were identified by experts at Messiah Theological Institute (MTI). The use of focus groups in a study brings out insights and understandings in ways which simple questionnaires may not be able to unfold (Berg, 2004). Focus group research is based on facilitating an organized discussion with a group of individuals selected because they were believed to be representative of a group (Morgan, 1988), The interaction among focus group participants brings out differing perspectives through the guidance of a facilitator or a moderator (Glesne, 1999).

One-on-one interviews conducted at MTI and participants were selected by experts knowledgeable with farming practices. Interviews are useful to investigate information from personal perspectives on a particular topic (Glesne, 1999). Interviews provide an interviewer to pursue in-depth information around a topic. Interviews may be useful as follow-ups to certain respondents to questionnaires, e.g., to further investigate their responses (Babbie, 2001). The researcher interviewed students at MTI and respondent's perceptions were recorded and some tape recorded. The respondents took time to share topics such as: gender issues, agricultural practices, and future development of the college. The participants that needed help with the language were assisted to ensure they understood the questions and respond accordingly. During interview process, respondents were assured of confidentiality of information. The researcher made sure the participants understood the questions. The researchers probe the respondents beyond the answers of the prepared standardized questions.

The data for this study were collected from three parts. The first part of data collection was through a survey instrument. The population that completed the survey consisted of MTI (Messiah Theological Institute) students, staff, rural community members and faculty members during the summer of 2005. Student's records were obtained from the office of registrar MTI to facilitate scheduling of interview sessions. The second source of data was obtained from face-to-face interview. Interviews of participants conducted according to schedule developed by the primary researcher. Faculty members assisted in identification of students to participate in one-on-one interview.

One-on-one interviews involved the implementation of a number of predetermined questions and special topics (Berg, 1998). The researcher asked questions of each interviewee in an organized and consistent order, but allowed freedom to digress and to probe respondents beyond the answers of the predetermined questions. Third collection process was focus groups were conducted by dividing (n=37) into five groups. Each group was assigned an expert in agricultural program as a moderator and groups had to choose their own scribe. Allowing focus groups to choose own scribe provided with freedom to select knowledgeable member. Researchers assigned groups in different rooms. After two hour sessions, groups presented summary of findings to all participants. Key participants particularly from government and NGOs were also allowed to give their perspectives about the agricultural program. The researchers lead the discussion and closing remarks with MTI administration present.

By August 15th 2005, all the completed surveys for final returned rate of 95%. The response was highly considered by researcher as desirable. The primary data were collected and analyzed using objectives as a guideline. The choice of analysis was based on the objectives. Data were analyzed through SPSS statistical package.

Findings

Respondents were asked perceptions of developing a vocational training as step to tertiary education and to improve agricultural production. Data were collected and analyzed to answer the following objectives.

Research Objective One

Objective one was to describe the demographic characteristics of agricultural producers among selected districts during summer 2005 in Mbale Uganda. Information was collected from rural farmers, faculty and students in regards to: age, gender, tribes, education level, number of years engaged in agriculture, household size, farm size, and characteristics of each district. Information to answer this objective was collected using questionnaire.

Table 1.1 shows the age of the respondents. Participants were asked to indicate their age range. The age range was gathered from the (n=90) participants. This consisted of (n=40) students and (n=50) rural farmers. The most frequent (21%) age range was between the ages 26 and 30 years. Less than 5.6% of the respondents were age 60 years or older. There were an equal number (n=15, 16%) of the respondents between ages 21 and 25, between ages 31 and 35 and

between ages 36 and 40 years. Table 4.1 shows, less than 2.2 % of the respondents were between the ages of 56 and 60 years old.

Table 1.1.
Age of participants

Years	<i>f</i>	%
21-25	15	16.7
26-30	19	21.1
31-35	15	16.7
36-40	15	16.7
41-45	5	5.6
46-50	10	11.1
51-55	3	3.3
56-60	2	2.2
>60	5	5.6
Total	90.0	100.0

The data in Table 1.2 indicates that the majority (81.1%) were male. Eight teen percent were female. Gender distribution indicated in Table 4.2 does not include focus groups participants and one-on-one respondents.

Table 1.2.
Gender of participants.

Gender	<i>f</i>	%
Male	73	81.1
Female	17	18.9
Total	90.0	100.0

Objective Two

The researcher asked the respondents to indicate their educational level completed and also to describe land ownership as well as decision making of the land production. The data in Table 1.3 presents the distribution of education level of the participants in this study. The sample consisted of 127 participants and included, completed questionnaires (n=90) and focus groups participants (n=37). Table 1.3 shows that sixty-two of the respondents had education less than high school and 45% had completed high school education. Approximately 9.4 % (n=12) of the participants had completed a diploma program which is comparable to an associate degree. Eight (5.5%) of the respondents had completed a bachelors degree. This study shows majority (84.2%) of the participants had education level less than diploma program.

Table 1.3.
Education level of participants.

Education Level	<i>f</i>	%
Less than high school	62	48.8
High school	45	35.4
Associates degree	12	9.4
Bachelor's degree	8	6.3
Total	127.0	100.0

Participants were asked to describe farm rights concerning land ownership and management of agricultural practices in Uganda. Table 1.4 shows percentages of land ownership/farm rights among the respondents. A majority (97.8%) of the respondents indicated that men owned land and only 2 percent of the women owned land.

Table 1.4
Land ownership

Land ownership	<i>f</i>	%
Male	88	97.8
Female	2	2.2
Total	90.0	100.0

Table 1.5 indicates the percentages of the farm operations and decision making among the respondents. A majority (92.2%) of the respondents was male and dominated the land operations and decisions making. Only 7.8 % of the female made farm decisions and management among the selected population.

Table 1.5.
Farm operations and decision making

	<i>f</i>	%
Male	83	92.2
Female	7	7.8
Total	90.0	100.0

Objective Three

Table 1.6 shows the training types offered by extension agents. Of the 90 total participants, 37.7% of the farmers attend workshop training and only 2% attends technology training. Thirty-three percent of the participants have never attended any type of extension training and 14.4% field days training. Eleven percent of the participants achieved credit training.

Table 1.6

Extension agents training

	<i>f</i>	%
Training		
Workshops	34	37.7
Technology	2	2.2
Credit advising	11	12.2
Field Days	13	14.44
None	30	33.3
Total	90.0	100.0

Table 1.7 reports the food production and marketing of surplus. Data shows majority (67%) of the farmers produce food local market and 23.3% indicated they produce for household consumption. Only 5.5% produce for national and 4.4% for international market.

Table 1.7.

Food production and consumption

	<i>f</i>	%
Consumption		
Local Market	60	66.6
Household	21	23.3
National	5	5.5
International	4	4.4
Total	90.0	100.0

Table 1.8 shows organizational members such as Farmers organization among agricultural producers. A majority (63.3%) of the farmers indicate “No” membership in any organization. Thirty-six percent stated “Yes” membership in agricultural organizations such as Uganda Farmers Union and NAADS.

Table 1.8

Organizational memberships

	<i>f</i>	%
No	57	63.3
Yes	33	36.6
Total	90.0	100.0

Focus group participants concerning this objective made the following comments:

“We believe that main crops in each district include: maize, sorghum, passion fruits, millet, rice, beans etc.... farmers grow many crops to make sure they have enough for household consumption and sometimes surplus for local market.”

“I think main commercial crops such as coffee and cotton are always grown by agri-groups and some few large scale producers...it is a difficult to make a living in agriculture...marketing and transportation costs are obstacles to producers.”

Interviewed participants (n=20) were asked about agricultural practices in their location or district. There were similarities in terms of crops and agricultural practices with responses from focus groups. The respondents indicated that maize, millet, sorghum, cassava and beans dominate small scale production. Participant's comments were:

“It is wise to know that people are trying to survive and feed large families, food is produced for household consumption and very little for sale.”

Northern Uganda is relatively poor due LRA (Lords Resistance Army) invasion. The economy is highly dependent on agriculture, but the country has very weak transport, health, education and energy infrastructure. A brutal insurgency since early the 1990s by Lord's Resistance Army (LRA) has further subdued agricultural business and trade by displacing the rural population to secure camps and affecting agricultural production. Vocational training is very significant for rural farmers to learn technical skills such as welding, mechanics, basic irrigation technology and process to adopt modern technology. Agricultural producers in Uganda are still resistant to use fertilizers and hybrid seeds due to cultural beliefs and low adoption of technology. Vocational training will prepare them to adopt modern technology and skills necessary for agricultural production.

Conclusion

The study revealed that most of the participants had education less than high school (62%) and engaged in small-scale farming. The demographic information provided information on gender, land rights and land ownership. This study shows that women have little (2%) land ownership or make farm decisions. The review addressed the same problem facing rural farmers in Uganda such as gender disparity and land inheritance after the husband's death. The majority of the rural farmers lack basic needs such as food, shelter, farm tools and clothing. Maslow (1954) hierarchy of needs shows that psychological or basic needs have to be met. Most of the farmers (21.1%) own land less than one or equal to one hectare. Subsistence farmers were common in rural communities and lack extension agents to disseminate information about farming practices. Radio (44%) advertising was commonly used to gain information about farming practices.

Uganda's population is essentially rural and poor thus its ability to cultivate food enough for the household was threatened. Therefore, even in normal times, a large proportion of Uganda's population encounter inadequate diet and per capita calorie intake for a majority of Ugandans was below the minimum nutritional standards (MFED, 1998). Therefore there is no easy solution to the problems facing farmers in Uganda. Determining the needs for establishing vocational training is crucial for food security and livelihood maintenance, particularly rural populations. Offering farmers substantial training and agricultural knowledge will encourage efficient use of resources, better adoption of new technology and improved food productivity. Offering vocational technical courses to agricultural farmers will provide a better understanding of the farming practices and adoption of modern methodologies.

Land ownership and rights negatively affects agricultural production among rural farmers in Uganda. Women have no rights to make decisions on land operations and production.

Although there are no laws against women owning land in Uganda, men still dominate land inheritances and ownership. According to this study, 97.8% of men owned land and only 2.2% of the women owned land. Women supply 80% of the agricultural labor force but are not expected to own land. When a man dies, the land automatically goes back to the family and wife left landless (Women News, 2003).

In rural areas such as Uganda, women are three times less likely than men and boys to have formal education (UNIFEM, 2002). All these constraints negatively affect agricultural production in all districts in Uganda. . The Plan for of Agriculture (PMA) - a central element of Uganda's poverty eradication strategy - is a key to enabling the rural population to improve their livelihood and ensure food security through changing subsistence agriculture to doing farming as a business. Rural farmers, particularly women are not able to benefit from this program as a result of gender issues.

Recommendations

This study found that majority of the participants were optimistic that establishment of agricultural technical training will assist rural farmers learn how to manage farming practices, forest ,management, land conservation techniques, improve food production and adopt new technology. Interviewed participants noted that food security was their top priority, to feed the family and to market the surplus. Participants also discussed that agricultural education will open up job opportunities for graduating students. Sound quality training and improved farming practices will reduce poverty level. All respondents acknowledged that poverty was too high among rural population due to unemployment and poor farming practices leaving no or little surplus for sale. Developments of agricultural training colleges most likely create awareness to rural farmers and change traditional practices

The majority of farmers in Uganda are crop farmers as well as livestock farmers. A major constraint is the lack of knowledge on how to conserve soil. This is because farmers do not use fertilizers in their crops and legumes in livestock enterprises. Lack of education contributes to low level of agricultural production. Most of the farmers (47.8%) have education less than high school. This constraint limits to their level of adopting modern technologies. A majority practiced traditional farming and therefore poor farming techniques are common. Gender inequalities prevent women for making timely decisions to improve farming practices. Seventy five percent of the women do the work and men attend “meetings and business” in town. A major constraint was lack of agricultural knowledge on how to conserve soil and to maintain biodiversity.

Majority of farmers being subsistence producers, crops such as maize, cassava and beans for example are staple foods among rural poor. Therefore, courses should be developed to improve quality seeds for these crops. The search for varieties of resistant varieties with good yield potential and palatability should be established. Rural communities rely on these crops for daily consumption and hence improving the quality will better lives of many in Uganda.

Course content that include: soil conservation, animal husbandry, farm preparation, zero grazing, stocking rates, breeding techniques, natural resource conservation should be offered

during initial stages vocational training. Offering these beginning courses at certificate program/level and vocational training will prepare students for degree courses such as animal science, agronomy, food technology, and veterinary science.

Gender inequality courses should be implemented targeting women who live in rural areas. Vocational training colleges should seek to develop courses designed to educate rural farmers, particularly women on ways to improve farming practices through development of outreach programs. Gender rights and land ownership are low among women, therefore developing outreach programs will improve rural lives where 55% live below poverty line. Educating women will empower them to assist with farming operations, currently dominated by men.

Discussion/ Implication

Vocational training will enhance access to quality education for agricultural producers and rural population. Vocational education has value to bolster economic well-being; agricultural productivity and helps families build better lives and lift their children out of poverty (USAID, 2006). Educating small scale farmers on specific technical skills will boost agricultural production and food security. Data shows that investing in education has demonstrable payoffs in terms of economic development and health needed in developing nations such as Uganda.

Global markets are changing and the change requires new types of workers, able to learn new skills and use new technologies. A basic education such as primary education is no longer adequate for workers to take part in global economy (Barro, 1999). In Uganda, every extra year of training, a person receives boost of income level by an average of ten and 20 percent, which in developing nations can make it possible to feed one's family or send children to school (USAID, 2006). Industries in today economy require well trained and capable upgrading of knowledge and learning skills to stay competitive in today's world.

Moreover, an educated populace has critical skills to adopt new technologies and accept change. Offering vocational training among all ages will make people significantly more productive agricultural workers. A recent study of 63 nations showed that in educating girls led to dramatically improved farm yields that accounted for almost half of the reduction in malnutrition in those nations over a 25 year period (Lisa& Haddad, 1999). Countries with formal and informal schooling have experienced greater political prosperity and more democratic rights.

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