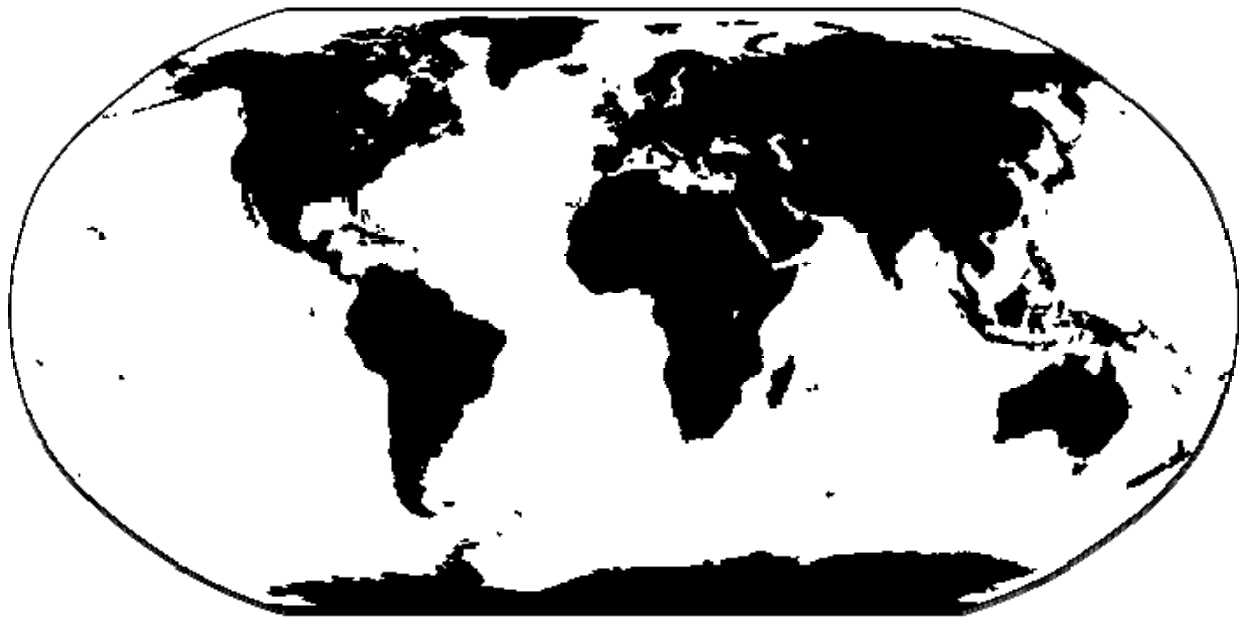


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Journal of International Agricultural and Extension Education

Volume 17 Number 1 SPRING 2010

Editorial Board & Officers2
From the Executive Editor4

Feature Articles

The Provision of Extension Services in Afghanistan: What is Happening?5
Timothy Kock, Oklahoma State University
Amy Harder, University of Florida
Patrick Saisi, Oklahoma State University

The Use of Micro-grants to Mitigate Gender Inequity in Afghanistan by Empowering Rural Farmers and Agribusiness Entrepreneurs13
Timothy Kock, Oklahoma State University
Sheyenne Krysher, Oklahoma State University

Adoption of Improved Maize Production Practices on Maize Yield Among Small Scale Farmers in Western Province in the Agricultural Reform Era.....21
Adijah M. Ali-Olubandwa, Egerton University, Department of Applied Community Development Studies
Dophine Odero-Wanga, Department of Applied Community Development Studies
N. J. Kathuri, Department of Agricultural Extension and Education
W. A. Shivoga, Department of Environmental Science

Citation Structure: An Analysis of the Literature Cited in the Journal of International Agricultural and Extension Education from 1997 to 200631
Leslie Edgar, University of Arkansas

Exploring the Leadership Behaviors of Community Leaders in northeastern North Carolina.....45
Jane Walker, North Carolina A&T State University
Benjamin Gray, North Carolina A&T State University

Factors Affecting the Global Mindedness of Extension Agents: Implications for Building Global Awareness of Extension Agents59
Daniel B. Smith, North Carolina State University
K. S. U. Jayaratne, North Carolina State University
Gary Moore, North Carolina State University
Mark J. Kistler, North Carolina State University
David Smith, North Carolina State University

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From the Executive Editor

This is a year of new beginnings. After celebrating our 25th anniversary, AIAEE is ready to tackle the challenges as we move the organization forward. The journal is no exception. As our universities, organizations, and institutions struggle with financial resources, it is imperative that we find more efficient ways to serve our membership.

I am pleased to provide an update on the JIAEE transition to CyperPress. I believe that you will find the journal easier to search and access. JIAEE is now available at <http://www.aiaee.org>. The current volume will be password protected, but all past issues will be available to you through this site. As we transition to an electronic journal, we will provide a Kinko's "Print on Demand" this year by request.

AIAEE membership includes a subscription to the electronic journal. Payments can be made online through a secure website using a credit card (5% processing fee) at <http://www.aiaee.org/subscription.html>. You can print the form and return via print/mail copy with a check to the treasurer, Dr. Mark Erbaugh. Once payment is confirmed, you will be added to the database and a user name and password will be provided. You will be able to update your profile and change this information once you log in the first time.

We are excited to offer library subscribers broader access. Libraries will register their IP range such that all users from any computer in that library (or campus) will have full access to the site without logging in. These services will allow us to reach those interested in international agricultural and extension education throughout the world. I am very pleased to be a part of this organization.

Sincerely,



Kim E. Dooley, Executive Editor

Journal of International Agricultural and Extension Education

The Provision of Extension Services in Afghanistan: What is Happening?

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Abstract

Afghanistan's agricultural sector is extremely important. It provides livelihoods for almost 80% of the population; however, due to 25 years of conflict, Afghanistan's agricultural sector has been left in ruins. After the fall of the Taliban regime, the world has taken a more proactive approach in rebuilding the country. The Afghan government and NGOs have started to create programs that enhance agricultural production throughout the country. This paper is a synthesis of the literature spanning 2000-2008 pertaining to what has been done thus far in the country and what entities were responsible for those outcomes. This study describes the role of the Ministry of Agriculture, Irrigation and Land's Division of Extension and how that division has addressed problems in the agricultural sector. The literature suggests that NGOs play a vital role in Extension program implementation, while the Ministry of Agriculture serves primarily as a regulatory body.

Keywords: Afghanistan, agriculture, Extension, government, NGOs

Introduction

After 25 years of war, Afghanistan is facing troubling times (United States Department of Agriculture, Foreign Agricultural Service, 2005). As its government and society move forward, its agricultural sector must become economically viable. Afghan farmers continue to face challenges in the aftermath of the Taliban regime (Kock & Edwards, 2007). The dependence on agriculture is great; it is the life-blood of the country.

Afghanistan is largely an agrarian country which encompasses 647,500 square kilometers that supports 31,889,923 people (Central Intelligence Agency, 2007). During the last decade, the country has experienced a perennial drought which has created hard times in the rural communities (USDA/FAS, 2005). Despite the unfavorable conditions for economic growth, the agriculture sector still plays a major role in the lives of many Afghans. Almost 80% of Afghanistan's population depends on agriculture and it is traditionally the most important sector of the Afghan economy (United States Agency for International Development, 2007a). However, illicit crop production has become a thriving industry due to the transitioning Afghan government and the Ministry of Agriculture, Irrigation and Land's (MAIL similar to the United States Department of Agriculture) inadequate economic resources to support implementation of educational programs to out-lying areas. Rural people derive their livelihoods from agriculture in order to support their families (USAID, 2005).

Afghan agriculture depends on a variety of licit and illicit crops, such as vegetable crops, livestock and poppy production. These venues are the major areas of income generation for rural people. According to the United Nations, Food and Agriculture Organization (FAO, 2005), the economy of the country was hinged on agriculture; it was the means of employment for millions of Afghans. This is supported by Toness (2001), who stated agriculture plays a central role in developing countries because most developing countries have rural based economies whose sustainability is linked to natural resources and the management thereof. Afghanistan is no different.

The United Nations, FAO (2004) reported Afghan agricultural production had decreased by 50%, causing additional people to depend on relief supplies from donor countries.

Based on the rural driven economy, the Ministry of Agriculture, Irrigation and Land (MAIL) needed to support Afghan farmers to increase licit crop production (USAID, 2006a). The branch of the Ministry that provides this service, the Extension Service, needed to be proactive in addressing the issues facing these people (USAID, 2006b).

According to the MAIL's National Development Framework written in January 2004, the Ministry of Agriculture was asked by the Afghanistan Central government to create a sustainable and productive environment for development. This task led the Ministry to seek out non-governmental organizations (NGOs) already on the ground to implement extension-type programs. The government of Afghanistan has been reduced to a facilitator rather than an implementer of agricultural rural-based extension programs. In the MAIL report, the private sector was charged with implementation of programs. Therefore, the MAIL placed farmers' education in the hands of development agencies such as NGOs and United Nations' agencies. The report clarified that the role of government was to regulate, make policy, monitor, evaluate and foster partnerships, while other development agencies, such as NGOs, would work in the role of implementers.

Although Borchardt, et al. (2008) argued reconstruction efforts need to take a cooperative approach among governmental and nongovernmental organizations working in Afghanistan, little is actually known about the effectiveness of Afghanistan's approach to extension. With food security in Afghanistan still a problem despite many organizations working in the agricultural sector, it is important to understand if extension services benefit Afghan farmers by helping to counter the low production and economic hardships facing Afghanistan. Such research may assist organizations with re-strategizing their approaches to providing extension services to farmers in dire need of assistance.

Theoretical Framework

Toness (2001) defined the role of extension as "a field where agricultural professionals play a role in identifying, adapting, and sharing technology that is appropriate to the needs of individual farmers within a diverse ecological and socioeconomic context" (p.25). Communication is an essential part of that role.

According to Rogers (2003), communication is “the process by which participants create and share information with one another in order to reach a mutual understanding” (p. 18).

Extension programs typically focus on a specific type of communication, called diffusion. Rogers defined diffusion as a type of communication specific to the transmission of an innovation. The diffusion process has four basic components: (a) the innovation itself, (b) an individual possessing knowledge of the innovation, (c) an individual unfamiliar with the innovation, and (d) a communication channel connecting the two individuals (Rogers). Characteristics of each of the components affect the successfulness of the diffusion process (Rogers). Of particular interest to this study were the characteristics of the individual (or organization) possessing knowledge of the innovation, the communication channels used, and the success of the diffusion process.

The diffusion process occurs most frequently between two individuals sharing common characteristics. The similarity between individuals is referred to as homophily; its converse is heterophily, or the degree to which interacting individuals are different (Rogers, 2003). Rogers said homophily between individuals is characterized by shared group membership, living or working near each other, similar personal and social characteristics, and shared mutual subcultural language. Homophilous communication is “more likely to be effective and thus to be rewarding to the participants” (Rogers, 2003, p. 19). Rogers noted a problem with the diffusion process is that the individual knowledgeable about the innovation is rarely homophilous with the individual receiving the information. Communications can suffer as a result. In Afghanistan, the re-assignment of extension implementation to NGOs and other development agencies rather than to its own government seems counterproductive when considered in terms of homophily and heterophily. It is unknown if this has affected the effectiveness of extension services in Afghanistan.

Rogers (2003) postulated that mass media channels are the most rapid and efficient communication channels for transferring knowledge about an innovation. Included in this category are radio, television, and newspapers. Interpersonal channels are considered more effective, though less efficient, due to the need

for face-to-face contact. More recently, the Internet has gained in popularity as an interactive communication channel (Rogers). Previous extension research has recommended using a variety of communication channels but also acknowledged the effectiveness of a channel depends upon the audience (Bardon, Hazel, & Miller, 2007; Cartmell II, Orr, & Kelemen, 2006). Bentley, Barea, Priou, Equise, and Thiele (2007) recommended selecting communication channels based on the context and the complexity of the innovation.

The adoption of an innovation can be interpreted as evidence of a successful diffusion process. The goal of many international extension programs is to facilitate the adoption of behaviors that will lead to increased economic benefits for clientele (Finley & Price, 1994; Tonnes, 2001; USDA/FAS, 2007). For example, an extension program may help a community to develop a cooperative to generate increased economic opportunities for local farmers (Swanson & Samy, 2004). Success in the private sector extension is clearly reflected in the use of, and subsequent improvements in, production (Androulidakis et al., 2002). Therefore, tracking increases in production and its counterpart, income, is a useful way to estimate the impact of the adoption of an innovation.

Purpose and Objectives

The purpose of this status descriptive study was to develop an understanding of agricultural extension services as provided by both the public and private sector in Afghanistan.

The objectives of this study:

1. Determine the type of communication channels used to educate farmers in Afghanistan such as mass media, formal trainings, and demonstration plots.
2. Determine the role of the government and NGOs in the provision of agricultural extension services to Afghanistan farmers.
3. Determine signs of improvement in agricultural production as a result of accessing extension services.

Methods

This study consisted of a review of literature, including scholarly journals and documents of government agencies and non-governmental agencies working in the

Afghanistan extension development sector. Content analysis was used as a method to identify systematically the important aspects of Extension services in Afghanistan. Altheide (1985) defined content analysis as “a way of obtaining data to measure the frequency and variety of messages” (p.66). Altheide further stated “content analysis has been used to determine the objective content of written or electronic documents” (p.66).

Finding valuable information on Afghanistan was problematic. A systematic review of non-governmental Web sites such as CNFA, DAI, Oxfam, and Chemonics, and governmental Web sites such as USDA, USAID, and the Afghanistan Ministry of Agriculture, Irrigation and Land helped researchers glean a better understanding of the issues facing the country and its citizens. The literature review spanned from 2000 to 2008; notably, a larger amount of information was available after the fall of the Taliban regime. It was after this time that more governments and non-governmental organizations started to rebuild Afghanistan and its agriculture.

Trustworthiness was obtained through a triangulated review of NGO Web sites, journal articles, Afghan governmental documents, and USAID/USDA documents concerning development in Afghanistan. Erlandson, Harris, Skipper, and Allen, (1993) noted triangulation adds to the truthfulness and credibility of the findings. Two researchers with different development experiences compared governmental documents with information that NGOs published in annual reports and Web-based publications. According to Stake (1995), using data gathered from multiple sources and researchers with different experiences to review data is a theory of triangulation. The documents were reviewed for commonality of the data.

Findings/Results

The literature review was conducted in accordance with the three objectives of this study. The findings are shared for each of the objectives below.

Objective One

Kock and Edwards (2007) found NGO-driven progressive farmer and extension trainings enhanced income generation in the agricultural sector. The authors suggested radio programs, crop specific training, and on-farm

demonstration plots added to the farmers’ ability to increase income. This was buttressed by CNFA (2007), who established demonstration plots as a vehicle for enhancing farmer knowledge concerning current farming practices and provided training to farmers concerning the construction and management of underground vegetable storage units. According to ACDI/VOCA (2008), para-vet trainings benefited farmers in 200 villages and provided the manpower to vaccinate over 136,000 animals.

These findings were supported by USAID. In 2006, USAID reported training programs that created a holistic approach used crop demonstration and radio to increase farmer awareness to new farming practices and new agricultural markets. Due to the extremely high (75%) illiteracy rate in Afghanistan (USAID, 2006), radio has been a very popular media of instruction in Afghanistan. Demonstration plots provided an opportunity for farmers to see what new farming techniques can do for production (ICARDA, 2002).

According to Chemonics (2007), and USAID (2007b), agricultural fairs have also been used to show new farming practices and alternative methods for crop production. The country-wide agricultural fair held in Kabul provided farmers a means to interact with traders and see new farming methods. Chemonics (2007) reported:

some of the most popular exhibits at the fair were demonstrations of agriculture technologies to improve farmers’ harvests — and bottom line. Laser land leveling — a technology used to increase water usage efficiency by up to 30 percent and improve the quality and consistency of commercial produce — was shown off at the fairground demonstration farm. (p. 1)

Objective Two

The MAIL, Policy and Strategy Framework (2004) spelled out responsibilities of both development agencies and the government: “The provision of security, justice and equality, investment in human capital and social safety nets were vested in the Afghanistan government while the private sector engages in production and marketing activities” (p. 3). The government was therefore playing a regulatory role while development agencies were implementing the

extension services to the farmers as inferred from the report.

According to the report of 2004 Food and Agricultural Organization, Regional Conference for Asia and the Pacific, held in Beijing, China, public services in the area of extension education have been dismal compared to the private sector, especially the NGOs (FAO, 2004). It was, therefore, no surprise the Afghanistan government passed that responsibility to the private sector. One reason for this could be that the Afghan MAIL lacked the monies needed to be effective, and therefore relied on NGOs to buttress extension work when working directly with farmers. In support of this, USDA established Agricultural Advisors on Provincial Reconstruction Teams (PRTs) throughout Afghanistan to provide technical and programmatic assistance to NGOs, UN, military, and local people in different geographic regions (USDA, 2007).

Objective Three

According to the World Bank (2007), Afghanistan has experienced economic growth since 2002. The value of non-drug GDP increased by 29% in 2002, 16% in 2003, 8% in 2004 and 14% in 2005. This increase has been attributed to external assistance from the United States and other donor countries. Between 2001-2006, the United States committed over \$12 billion in aid for development in Afghanistan and the international community pledged \$8.2 billion from 2004-2007 (US Department of State, 2007). Some of the money was earmarked for agriculture to help jumpstart the industry. Through this infusion of donor dollars that funded NGO extension programs, Afghan farmers' incomes have increased to almost \$1,000 USD per year (Kock & Edwards, 2007).

CNFA (2007) estimates potato farmers' incomes will increase by 49% after being trained on underground storage. In 2006, the World Bank stated "to enable faster economic growth and rural poverty reduction, agriculture needs to grow at least 5% each year over the next decade" (p. 1). Based on the work of Oxfam's gardening programs, rural Afghan people now have a better diet and will be able to save money on food (Oxfam, 2008). Development Alternatives Incorporated (DAI) stated the organization is in the process of rebuilding the agricultural sector by improving access to markets, inputs, and business services in rural

Afghanistan (DAI, 2006). This was supported by Gesellschaft für Technische Zusammenarbeit (GTZ, 2008) who stated "the Afghans people's economic situation has markedly improved. More wheat is being planted, yields have risen, and cattle breeding has increased" (p. 1). The Food and Agriculture Organization (FAO, 2006) reported "better crop husbandry practices, crop intensification and diversification have improved yields" (p. 3).

Conclusions and Recommendations

This study examined the communication channels used by extension services, which organizations were delivering extension services, and increases in production as evidence of successful extension interventions. Radio had been used to broadcast market reports, on-farm demonstration plots were used to show different cropping methods and seed varieties, and farmer trainings were implemented throughout the country. The Ministry of Agriculture provided oversight of Extension programs, while NGOs worked directly with rural people in program implementation. According to the World Bank (2007), Afghanistan has seen economic growth, which is supported by Kock and Edwards (2007) who found Afghan farmers' incomes have increased to almost \$1,000 USD per year. These types of development work may help the Afghan people migrate out of the economic crisis they are currently facing.

If Afghanistan is going to move forward, it must invest in its agriculture; it must be able to feed its people. Agriculture is a way of life for the majority of Afghans; USAID estimates over 70% of Afghan people derive their incomes through agriculture production (USAID, 2007). This is supported by the Afghan MAIL (2004) report estimating a 6% increase in production and doubling of the production capabilities in the next 12 years will benefit rural Afghans. The report noted "agriculture dominates the Afghan economy and society" (p. 6), thereby supporting the idea that agriculture is extremely important to Afghanistan.

It is important to remember the Afghan government lacks the financial resources to invest heavily in agriculture. Therefore, it relies on donor-supported NGOs to help build the industry. In 2003, USDA invested \$5 million for child nutrition and another \$9 million for education and nutrition; in 2004, USDA invested another \$7 million to promote food security and

\$63 million, in 2005, for rural extension programs (USDA, 2005). The United States is only one of many donors that have invested in Afghanistan; billions of dollars have been spent to support the country in all areas of development.

However, it is important to question the sustainability of foreign government-funded extension services. Each foreign government has its own priorities and funds those projects that fit their concerns (political, social, economical or geographic); if development projects fall outside those concerns, funds may not be available to help support the implementation of other “less important” projects (Margesson, 2007; Parker, 2008). Therefore, it is important that local governments and community members contribute to Extension “development” programs if they plan on providing direction for program design and implementation in the future.

Research about Afghanistan and its agricultural industry is lacking, which creates a void in data collection. Therefore, these researchers recommend future research should investigate how other countries have worked through similar hardships that Afghanistan is facing. There have been studies conducted in Africa, the Middle-East, Asia and former Soviet states concerning extension programming for rural people and how it was implemented. By gaining a better understanding of international extension-type programming and implementation throughout the world, foreign governments and NGOs may be able to design sustainable development projects that may help people in Afghanistan and other developing countries.

Implications

Rogers (2003) said characteristics of each of the components affect the successfulness of the diffusion process. This study examined the characteristics of the individual (or organization) possessing knowledge of the innovation, the communication channels used, and the success of the diffusion process. The findings from this study help to develop an understanding of the diffusion process in Afghanistan.

Rogers (2003) postulated the diffusion process occurs most successfully when individuals share common characteristics. The diffusion process in Afghanistan did not appear

to be negatively affected by assigning responsibility for extension services to the private sector despite the possibility for heterophily to exist. However, the Web sites of many of the NGOs investigated for this study contained little information regarding the location and experience of the staff members; therefore, it is unknown if living conditions simulated those of the farmers. Conversely, the USDA (2007) stated that when hiring Provincial Reconstruction Team (PRT) advisors in Afghanistan the organization looks for people with an agricultural background. In this regard, the USDA staff and Afghan farmers established some degree of homophily which is an asset in the diffusion process (Rogers, 2003).

The success of agricultural development in Afghanistan is hard to measure; the Web sites of NGOs promote positive change, showing yield increases, more income generation for farmers, and new teaching methods used throughout the country. Based on the increases in production and income, the communication channels that were being used seemed to be effective. However, more research needs to be done to fully understand the effects of extension services in Afghanistan. It may take years before signs of agricultural improvement are readily available for the country. If the next generation of farmers continues to apply and adapt to new technologies, agriculture in Afghanistan may prosper. Only time will tell.

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The Use of Micro-grants to Mitigate Gender Inequity in Afghanistan by Empowering Rural Farmers and Agribusiness Entrepreneurs

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Abstract

Gender inequality is a worldwide problem; Afghanistan is no different. Women account for 60% of the population and are the primary agricultural producers and caregivers for their families. However, they are usually the last to receive developmental aid. To increase long-term sustainability in developing countries, NGOs need to design projects that benefit women. This qualitative study describes the outcomes of a micro-grant program targeting Afghan women but also included males. The grant recipients were empowered to increase family incomes, send their children to school, and support community development projects. These were positive indicators of social change in Afghanistan and may represent outcomes with applicability in other developing countries facing similar challenges.

Keywords: Afghanistan, Entrepreneurs, Gender Equity, Micro-grants

Introduction

Gender inequity is a worldwide problem. According to the World Summit Report (2002), 70% of the world's population living in abject poverty are women. They are the poorest of the poor, and comprise two-thirds of the people living on less than one USD a day (United States Agency for International Development [USAID], 2006a). Because they are poor and many cultural issues may prevent women from organizing, millions of women have not benefited from development programs (United Nations Children's Fund [UNICEF], 2008). All people are entitled to basic human rights, including life, equity, dignity, and freedom; women are no different (World Summit Report). According to the World Summit Report, women fall behind men in almost all aspects of life, including health, education, legal rights, nutrition, and equal pay. Gender inequality is an extremely significant debilitating factor in many countries of the world.

The Food and Agriculture Organization (FAO, 2006a) stated that a focus on gender issues was important because the world's poorest people are women living in rural areas of developing countries trying to feed their families through subsistence farming. By focusing on these issues, achievement of the Millennium Development Goals of eradicating hunger and poverty, improving health, education, and gender equity would be attainable (FAO, 2006b). Poor women in developing countries find it more difficult compared to men when providing for their families due to traditional socio-cultural roles. For example, women in developing countries have found it difficult to access inputs for agricultural production (Snapp & Pound, 2008).

Based on the concentration of rural poverty in developing countries, women frequently hold the lowest social and economic status (Committee for Economic Development [CED], 2003; FAO, 2006b). According to Buvinic (1997), women in rural areas live below the poverty line and are harnessed with many economic burdens as abandoned wives, widows, and farmers. Jivetti and Edwards (2008) found that to be the case in western Kenya. The CED (2003) supported this by stating, "In most countries women lack equal access to critical resources - education, health services, physical

and financial capital and natural resources" (p. 9). Moreover, the CED (2003) suggested that increasing the economic participation of women would spur more rapid economic growth and social development. However, both men and women need to participate in development opportunities if a country hopes to create change that is sustainable.

According to the USAID (2000) and CED (2003), women are the "backbone" of the agricultural labor force; they perform the majority of the agricultural work in developing countries but still find it difficult to support their families. Women comprise 67% of the farm labor and produce 60 to 80% of the food (CED 2003; FAO, 2008). "Rural women are the main producers of the world's staple crops – rice, wheat, maize – which provide up to 90 percent of the rural poor's food intake" (FAO, 2008, p.1). Moreover, according to the International Food Policy Research Institute [IFPRI] (2002) and Kock and Edwards (2007), agriculture is the primary economic livelihood of most Afghans: 85% of the Afghan population depends on it to support their families.

The Case of Afghanistan

Afghanistan is working through troubling times and challenges in the aftermath of the Taliban regime (Kock & Edwards, 2007); the country cannot succeed in eradicating poverty unless women are empowered politically, educationally, and economically (IFPRI, 2002). Nevertheless, according to Ghosh (2003), for rural Afghan women, control of their lives is predetermined by kinship arrangements. These arrangements have been harsh on women, since women have been used as raw material to establish ethnic and social prominence. However, "The overthrow of the Taliban opened an opportunity to help Afghanistan's most invisible group – rural women" (FAO, 2002, p.1).

Women in Afghanistan comprise 60% of the population; the majority living in rural areas (FAO, 2002), and 80% of the Afghans are dependent on agriculture (USAID, 2007b). The United Nations Development Fund for Women (UNIFEM, 2008) stated that the average annual income for females was \$402 USD. Research conducted by UNIFEM concluded that Afghanistan ranked second to last in the world on gender-related issues. Hence, this has left

Afghan women in a poor situation to move forward. However, after years of conflict, women are beginning to emerge as social, political, and economic entities (Wakefield & Baurer, 2005).

The male-dominated culture throughout Afghanistan does not allow women to seek employment outside the home; therefore, many women have turned to home-based businesses to support their families (USAID, 2007b). According to the Citizens Network for Foreign Affairs [CNFA] (2007b), women-owned enterprises included canning, textiles, livestock, and poultry production. However, CNFA's research indicated that it was also important to involve men in attempts to improve gender equality. Men are crucial in reconstructing gender relations because of their involvement in the policies and practice of the development work being implemented (Flood, 2008).

According to the CED (2003), female-based businesses account for a substantial percentage of a developing country's economic development. In Afghanistan, women need access to micro-financing to help jump-start their enterprises. The CED (2003) stated that, without access to credit, female farmers cannot purchase the needed inputs to improve productivity. The CED found that women entrepreneurs are frugal, prudent business people and less risky than their male counterparts. This was supported by the USAID (2007b) who has funded thousands of loans, of which 75% went to women.

Conceptual Framework

The conceptual framework for this study was based on the Human Capital Theory posited by Nobel Prize winning author Gary S. Becker (1993). The theorist postulated that economic or educational investment in people enhances economic development. Moreover, Becker stated that the improvement in emotional and physical health adds to economic capability of people. So, by providing local Afghans matching micro-financing for business development the aforementioned conditions stood to be positively affected. In addition, the CED (2003) asserted that improving economic and physical capital for the rural poor would increase household incomes, reduce malnutrition, and improve the well-being of society.

Purpose

The purpose of this qualitative study was two-fold: 1) Gain a better understanding of the gender issues facing Afghan entrepreneurs (women and men); 2) Describe the outcomes of individual matching grants provided by the Citizens Network for Foreign Affairs (CNFA), through the Afghanistan Agricultural Development Project (AADP). The CNFA, AADP is a foreign agricultural development project funded by the United States Department of Agriculture (USDA), Food for Progress program. It monetizes soybeans, soybean oil, and kidney beans to create the funds for lending.

The grant recipients were referred to CNFA by a local Afghan non-government organization (NGO) who provided a variety of small business development trainings, including topics such as bookkeeping, marketing, and value chain development. The grant recipients consisted of male and female entrepreneurs and farmers. The recipients had to show that their businesses had matching equity on par with the grant's value. A total of 459 individuals participated in the project; 165 were women. Businesses developed through this AADP program included food processing, carpet weaving, wool processing, grain and vegetable production, machinery rental, and livestock and poultry production (CNFA, 2007b). This study included interviews with six grant recipients.

Methods and Sources of Data

According to Tomal (2003), interviews can be an important tool for an action researcher. The first step in the interview phase was to prepare the questions that would obtain the information desired by the researcher (Tomal). Six questions surfaced during meetings with the local Afghan NGO (i.e., a partner in the development project) and CNFA staff who supported the business and social aspects of the program. Afghanistan has two official languages; so, the interviewers were fluent in Dari and Pashto (the two official languages in Afghanistan) as well as English. The interviews were recorded and the responses were transcribed into English for the researchers to interpret.

A six question, open-ended instrument was designed to describe the participants' beliefs concerning their business and the effects of the matching grant program. A local Afghan NGO official, who worked in the business

development sector, evaluated the instrument for content and face validity. The questionnaire was written in English and translated into Pashto. To implement the questionnaire, two CNFA staff members conducted the interviews in the homes of the grant recipients, thus, allowing for better rapport. Tomal (2003) stated that building rapport with interviewees allows for increased dialog during the subsequent interviews.

Because of security issues and lack of roads throughout the southern (Kandahar/Nangahar Provinces) and eastern (Gardez Province) regions of Afghanistan, a limited purposive sample of two men and four female grant recipients were interviewed at the completion of the matching micro-grants program. Erlandson, Harris, Skipper, and Allen (1993) suggested that a purposive sample maximizes discovery and the researcher's ability to identify themes. Because many of the people of southern Afghanistan are nomadic and lacked permanent residences (Omran & Leeming, 2005) and due to the Taliban's control of southern and eastern regions, it was imperative that CNFA staff limit their travel to certain areas. Unfortunately, most grant recipients could not be reached for interviews because of safety concerns.

According to USAID, (2006b), illiteracy rates in Afghanistan range from 70 to 90%. So, the CNFA project staff members read each question to the participants in their native language, Pashto. Triangulation methods were implemented to increase trustworthiness of the study; personal interviews, project closeout report, and photos of businesses served as additional data for the study. According to Erlandson et al. (1993), triangulation builds truthfulness which adds to the credibility of a study's findings. However, only the results of personal interviews are reported on in depth in this paper.

Findings/Results

Grant amounts for the project at large varied from \$500 to \$75,000 USD. Over 97% of the grants awarded were defined as small (\$6,000 or less), and less than 3% were large (\$70,000 or more). The grants recipients reported that they were involved in a variety of agricultural businesses. Within our purposive sample, three businesses were value-added businesses (apricot- drying, potato chip manufacturing, and pickle and jam production),

two were sheep production, and one was a farm equipment rental service. The four businesses owned and operated by women were apricot-drying, potato chip manufacturing, pickle and jam production and a sheep producer, respectively. The remaining sheep production business and the farm equipment rental service were operated by men. Due to Afghan culture, males traditionally have more assets than women and are allowed to work outside the home (Grace, 2005). Moreover, because Afghan males have more assets or "equity" and fewer restrictions on their employment, larger grants were given to the male entrepreneurs.

The grants allowed all recipients to increase business assets with each recipient reporting an increase of income. Better or more equipment was purchased in the case of potato chip producer and the farm equipment rental service provider. Both sheep producers were able to increase the number of sheep in their flocks, and, thus, achieve greater profits. The entrepreneur with the apricot-drying business reported her yearly income increased from \$2,500 to \$6,500 USD. Other improvements seen by the grant recipients included an increased customer base and an improved family life. Five of six interviewees were able to send their children to school and purchase the needed books and school supplies for their children's educations due to increased income associated with the grants. One recipient stated that other than primary education, her children were also enrolled in English language and computer classes.

One of the largest grants in the sample (i.e., \$25,000 USD) was received by a male entrepreneur with an equipment rental service. With this funding, he reported the greatest increase of income, grossing more than \$10,000 USD. Also, he purchased the most equipment including tractors, a thresher, and other small machinery. Not only did the grant allow his business to grow but with less overhead he was able to charge lower prices to his customers. He could charge 20% less than other similar providers in his area allowing for an average savings of \$16 USD per customer. He addressed the "societal good" or "multiplier effect" associated with the savings passed on to his customers when he stated that, "these new customers are making more money for themselves."

Obstacles to business success or other hardships were also reported by the women. One woman, a sheep producer, was a widow. Her husband was killed during the Taliban's occupation in her area. She found much difficulty in supporting her large family, including meeting their needs for food and education. The female potato chip manufacturer lamented there were cheaper international competitors to contend with for sales. She also implied that her rent was high and she needed more business education. The dried apricot producer described that the roads for transport of her products were poor and security was an issue. And, the female pickle and jam producer explained her business started slow, selling only to three shops initially. However, she had come to sell her products to 73 shops in Kabul and the surrounding villages. The men in this study reported no business obstacles or hardships.

All six grant recipients expressed their appreciation of the AADP funding. The female business owner of the apricot-drying business said, "I think today we are living in a better house, wearing better clothes, sending our boys and girls to school, taking part in rehabilitation of the village by giving a donation to the village construction group." She continued, "All this is because of CNFA [AADP] grant; it has really changed our lives." The female sheep producer from the Ghazni Province was able to increase her monthly income to \$24 USD through the selling of milk, yogurt, and cheese to other villagers. Before her sons sold bread in the market and made far less than one USD a day. She stated, "raising livestock is a very good source of income for me and now I can make a better future for children and myself." The female pickle and jam producer explained that before receiving the grant, "we [had] started begging for food to feed our children." Her business has grown and her monthly income now exceeds \$360 USD.

The family sizes benefiting from the grant-supported businesses ranged from eight to 38 direct family members. Three of the six grant recipients were able to hire more employees thus increasing the number of secondary beneficiaries even more. The female potato chip manufacturer said that, "besides supporting my own family I also [help] by paying 11 ladies, my employees, I am helping the humanity." The pickle and jam producer had the ability to hire her daughter to work in the business. According to the CNFA's

final report (2007a), female enterprises accounted for the employment of 2,500 Afghan women.

Conclusions

As funding organizations and NGOs plan capacity-building projects in developing countries, it is important to embrace the contribution made by women. Women are a vital and often overlooked resource in developing countries; they are the largest group of agricultural producers in the developing world and the primary caregivers of the next generation (CED, 2003; FAO, 2008). Findings of this study showed that with grants from CNFA, AADP, women supported their children's education, families, and communities when their livelihoods increased. Also, women were capable and eager to own livestock and fruit and vegetable businesses. These were viable and important home-based income generating alternatives for the women interviewed to earn income because they were not allowed to seek employment outside the home (USAID, 2007b).

If more development programs benefiting women are implemented throughout the world, our ability to eradicate poverty and world hunger stands to increase. If NGOs can create programs with a focus on economic diversification including gender, the likelihood of successful development increases (Barajas, Howard, Miner, Sartin, & Silver, 2006). To that end, Borchardt et al. (2008) asserted that, "Economic growth is an essential to any form of long-term stability" (p. 2).

Afghanistan has reached the crossroads (Jones & Pickering, 2008); the achievements reached through many years of international development have positioned the country to empower a large sector of their population—women—and move forward as a nation. Small matching grants can help female entrepreneurs increase their family incomes and provide viable employment for other community members, including females, through food processing and agricultural enterprises.

Without economic development, food security and education will remain out of reach for most Afghans, especially women (IFPRI, 2002). The FAO (2002) stated, "It is clear that Afghanistan's economy is a rural, family economy with women at the heart. We must ensure that they are at the forefront of

Afghanistan's recovery" (p. 2). The USAID (2007a) supported that position: "No society can prosper when half of its population is not allowed to contribute to its progress. Educated and empowered women are vital to the democracy—and important for the development of all countries" (p. 10). There is a strong case to be made that pursuit of private economic opportunities is the foundation of a functioning civil society and participatory democracy (CNFA, 2007a). So, empowering Afghanistan's rural entrepreneurs to shape their local economies, generate sustainable jobs and improve community standards of living directly contributes to the country's stability. International assistance programs such as the CNFA, AADP reported on in this study support that aim.

Recommendations, Applications, and Implications

The description of the grant-making outcomes provide a better understanding of matching micro-grant programs and their impacts on recipients. As international donor countries are demanding results from their "investments" (Kock & Edwards, 2007), more studies similar to this could help document outcomes associated with the objective of such programs. Entrepreneurs of both genders, including the women, were proving successful in their businesses. However, what is the long term impact of the micro-grants? Future studies should be conducted to determine if the businesses were sustainable long-term and additional positive societal changes occurred from the investment of grant monies. Additionally, a comparison between the male and female entrepreneurs for long-term sustainability should be conducted.

According to the CED (2003), micro-credit programs provide women self-employment opportunities that may not be available through traditional means. The CED concluded that women led enterprises depend on less modern equipment and technologies than businesses headed by men; moreover, women are frugal and prudent business owners, and they use their added incomes to support educational opportunities. Findings from this study, although rather limited in number of interviewees, supported that position. So, the development and implementation of similar micro-finance

programs should be considered by donor agencies.

Birdsall, Rodrik, and Subramanian, (2008) stated, "developed countries should not abandon the poor to their plight. If, however, rich countries truly aim to help developing countries achieve lasting growth, they must think creatively about the development agenda" (p. 9). The "empowerment of women is key to raising levels of nutrition, improving the production and distribution of food and agricultural products and enhancing the living conditions of rural population" (FAO, 2006a, p. 3). Moreover, to enhance the status of women, skills training and jobs women can perform at home would strengthen their economic outlook (USAID, 2007b). But many programs designed to work with females in male-dominated societies have fallen short in that category. Accordingly, more studies similar to CNFA, AADP reported on here should be undertaken to better identify and understand the characteristics of successful programs.

The CED (2003) concluded, "We should invest in women because it is good for women—it will improve the quality of women's lives. But, it is good for development in general; it will enhance the impact and effectiveness of international development programs" (p. 16). Moreover, the World Summit's (2002) gender equity paper promoted the idea that both men and women be involved in development programs. The USAID (2006a) supported that concept: "the dynamics of women's and men's relationships as well as the complexities and interrelatedness of their roles in a given culture and social-economic situation must be understood before development solutions can be planned" (p. 23). That phenomenon demands additional inquiry as well.

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Adoption of Improved Maize Production Practices Among Small Scale Farmers in the Agricultural Reform Era: The Case of Western Province of Kenya

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Abstract

Adoption of improved maize production practices among small scale farmers is essential for increased maize production and consequently food security, poverty alleviation and growth in Kenya's economy. This is because small scale farmers contribute to 70% of the maize produced in the country. The ability and willingness of these farmers to adopt improved production practices may have been affected by the introduction of agricultural reforms which stemmed from Structural Adjustment Programmes resulting in cut backs in government expenditure. This placed a greater economic burden on the small scale farmers. The purpose of this study therefore, was to determine the relationship between adoption of improved maize production practices and maize yield among small scale farmers in Western Province in the agricultural reform era. Two hundred small scale farmers were selected through systematic sampling from Lugari, Bungoma, Mt. Elgon and Busia districts which were purposively selected. The respondents were interviewed with the help of interview schedule containing open and closed ended questions. Data was analysed using both descriptive and inferential statistics with the help of Statistical Package for Social Sciences (SPSS). The results revealed that there was a statistically significant relationship between adoption of improved maize production practices and maize yield. The study recommended therefore that for food security to be realised in Western Province in the agricultural reform era, efforts should be made to improve adoption of improved maize production practices.

Key Words: Maize, production, Agricultural reform, small scale farmers, Kenya, Adoption

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Introduction

The Kenya Vision 2030 and the Strategy for Revitalization of Agriculture (Government of Kenya (GOK), 2007; Ministry of Agriculture (MOA) & Ministry of Livestock and Fisheries Development (MLFD), 2004) have underscored the fact that productivity of farmers can be improved through use of modern technologies. Despite the heavy investment by the Kenya government in agricultural extension services, adoption of modern production technologies among the small scale farmers in Western Province engaged in maize production remain low and marginal (Ogada, 2009; MOA, 2006). This has resulted in low maize production in the province and consequently food insecurity in the country since Western Province is one of the country's potential food baskets. This is because Western Province forms part of the 20% arable land in the country and it receives bimodal rainfall. Seventy percent of maize, which is the staple food for most Kenyans, is produced by small scale farmers (MOA & MLFD, 2004).

Maize production among small scale farmers in Western Province and in the country at large may have declined due to agricultural reforms. The reforms which commenced in 1980s and is on-going stemmed from the structural Adjustment Programmes. This led to cut back in government expenditure including removal of subsidies on farm inputs. As a result, greater economic burden was placed on the small scale farmers (Nyangito & Karugia, 2006; Kodhek, 2005; Mochoge & Zziwa, 2004). In addition, the open maize market resulting from the agricultural reforms caused fluctuations in maize returns, exploitation by middlemen and low product prices (Kodhek, 2005). The Agricultural reforms thus pose greater risk for small scale maize farmers who are risk averse to adopt improved agricultural practices (Ogada, 2009). The question arising is whether those agricultural reforms have impacted on adoption of improved agricultural practices among small scale maize farmers in Western Province. Without adoption of improved agricultural practices among small scale maize farmers, maize production may be jeopardised.

This paper therefore, which is partial outcome of a study entitled "Factors affecting involvement of small scale farmers in maize production during the agricultural reform era: The case of Western Province" discusses the

adoption of improved agricultural practices on maize yield among small scale maize farmers in Western Province of Kenya in the agricultural reform era.

Objectives

The specific objectives of this paper were:

1. To determine the relationship between adoption of improved agricultural practices by small scale farmers and maize yield in Western Province in the agricultural reform era
2. To establish the improved agricultural practices adopted by small scale farmers in the study districts in Western Province in the agricultural reform era
3. To determine the relationship between small scale farmers' biographical data and maize yield in Western Province in the agricultural reform era

Definition of Terms

Improved Agricultural Practices:

Farming practices that have been researched on, tried and found to bring about increased crop yield.

Extension Packages: These are improved agricultural practices taught by extension staff to farmers. They include use of certified seed, use of fertiliser and manure for planting and top dressing and correct use of pesticides and insecticides for control of pests and diseases among other practices.

Bag: Shelled maize in a 90kg gunny bag

Methodology

Research Design, Population and Sampling Procedure

Ex-post facto research design was used via a cross sectional survey. This was because the study used naturally occurring treatments on subjects having a self-selected level of the independent variables (Kathuri & Pals, 1993; Borg & Gall, 1993).

The study was conducted in Western Province which is administratively divided into eight districts as shown on Figure 1, with the following agro-ecological zones: Busia and Teso – LM₁ – LM₂; Bungoma: UM₁- UM₄ – LM₃; Kakamega and Lugari: LM₁ – UM₃ - UM₄;

Vihiga: LM₃ – UM₁ and Mt. Elgon. These include tropical Alpine to upper highland zones and lower upper highland to lower midland zones. The Province covers an area of 8436 Km² out of this 6670 Km² has potential for agriculture of which, 3591 Km² is cultivated for

various crops. Rainfall is bimodal. The long and short rains come in March-May and August-November periods, respectively. Annual rainfall ranges from 900mm in Busia to 2100mm in Bungoma annually (MARD, 2002).

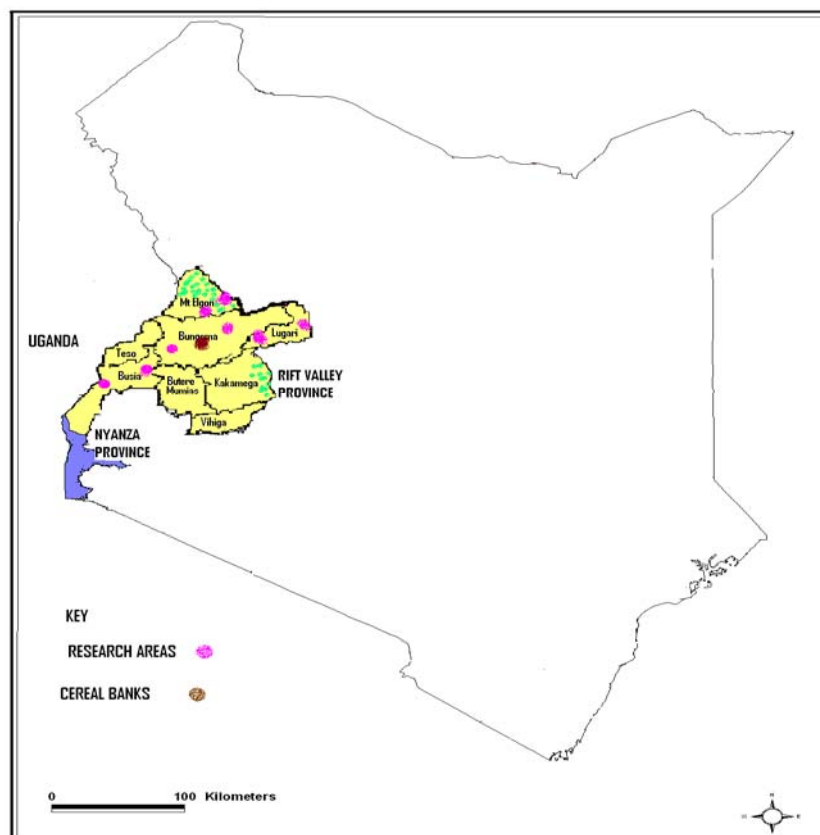


Figure 1. Map of Kenya Showing the Western Province

The target population was made up of small scale farmers in Western Province. The accessible population consisted of 41,809 farm households in Lugari District, 158,370 farm households in Bungoma District, 19,746 farm households in Mt. Elgon District and 136,736 farm households in Busia District (Central Bureau of Statistics (CBS), 2001b).

Busia, Bungoma, Mt. Elgon and Lugari districts were purposively selected to represent Western Province because Busia District had the lowest average maize yields (7 bags per acre) in the province while, Lugari District experienced the highest average maize yield (18 bags per acre) in the province, Bungoma (10 bags per acre) and Mt. Elgon (15 bags per acre) districts

were in-between in terms of maize yield (CBS, 2001b; MOA, 2006). In addition, the four districts represented Western Province in terms of all the Agro-ecological zones that exist in the province and therefore, results obtained could be generalised to the whole province.

Two divisions from each of the four districts were selected by simple random sampling. The study divisions were Bumula and Webuye in Bungoma District; Kaptama and Kapsokwony in Mt. Elgon District; Funyula and Butula in Busia District and Lugari and Likuyani in Lugari District (Figure 2).

For uniformity purposes the respondents were selected from focal areas through systematic random sampling hence ensuring that

they all had been exposed to extension staff. At the time of data collection, the extension staff had trained the farmers in one focal area per division and had moved to the next. The focal area approach which is under the National Agriculture and Livestock Extension Programme (NALEP) aims at improving livelihoods of the poor rural households (MOA

& ML&FD, 2006). In the focal area approach the extension staffs works in one area of approximately 400 farmers per year. The focal area is taken as a demonstration site where farmers from the rest of the division can learn latest technologies (Baiya, 2003). The key informants were sampled purposefully based on their positions of authority.

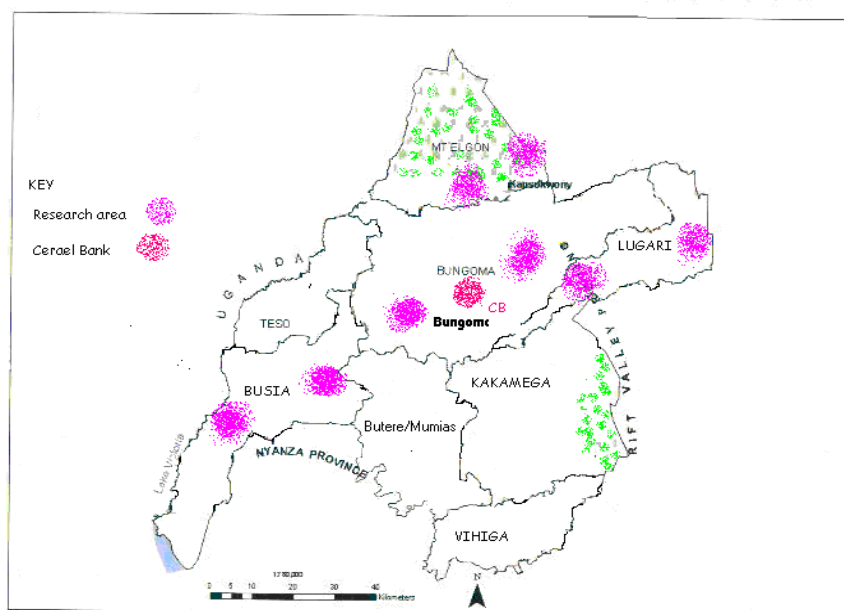


Figure 2. Map of Western Province Showing the Study Areas

The sample size was arrived at using the following formula:

$$n = \frac{NC^2}{e^2} + (N-1)e^2$$

(note: n=sample size; N=population size; C=Coefficient of variation which is $\leq 30\%$; e=margin of error which is fixed between 2-5%). The study sample was calculated at 25% coefficient of variation and 5% margin of error (Nassiuma, 2000).

Twenty five percent coefficient of variation was used to ensure that the sample was wide enough to justify the results being generalised for the Western Province. Higher coefficients of variation were not used to avoid

very large samples due to limitation of research funds. Five percent margin of error was used because the study was an ex-post facto survey, whereby the independent variables could not be manipulated hence necessitating relatively higher margin of error.

The study sample is shown in Table 1. The key informants included the Provincial Director of Agriculture and Livestock Extension, the Provincial Crops Officer, an officer in position of authority in Agricultural Finance Corporation and an officer in position of authority at the National Cereals and Produce Board, Western Province.

Table 1

Total Number of Subjects by Category from which the Sample was Drawn

Category	Number of subjects	Sample size
House hold heads in Busia District		
Men	50,715	25
Women	86,021	25
House hold heads in Lugari District		
Men	23,831	25
Women	17,978	25
House hold heads in Bungoma District		
Men	82,385	25
Women	75985	25
House hold heads in Mt. Elgon District		
Men	8946	25
Women	10800	25
<i>Key informants</i>		4
Total	357,493	204

Instrumentation

An interview schedule containing both open and closed-ended items was developed. The interview schedule administered to the farmers, contained items investigating the adoption of improved agricultural practices by farmers. The first draft of the instrument was circulated to supervisors, experts in extension research and social sciences at Egerton University, to determine clarity and adequacy of the instrument for purposes of ascertaining their construct validity (Jaeger, 1990).

The suggestions given by the experts were then incorporated into the second draft, which was then pre-tested in Lurambi Division of Kakamega District (which had similar characteristics with the selected study districts) to determine its reliability. The pre-testing exercise also helped the researcher to establish the clarity of meaning and comprehensibility of each item in the research instrument, and also to determine the time needed to complete and get the necessary information from the respondents. The reliability for interview schedule could not be calculated since the instruments contained mixed items, hence, no model was suitable for calculating the reliability coefficients.

Data Collection

A research permit was obtained from the Ministry of Education. Since the study focused on focal areas and the assistance of the extension staff in the specific areas was required, permission was sought from the Provincial

Director of Agriculture and Livestock Extension and the Provincial Director of Agriculture, Western Province.

Farmers were interviewed using the interview schedule. Key informants made of the Provincial Director of Agriculture and Livestock Extension, Provincial Crops Officer and one officer each in positions of authority in the National Cereals and Produce Board and Agricultural Finance Corporation in Western Province, were interviewed using an interview guides.

Data Analysis

Measurement of Variables: The dependent variable in this study was maize yield measured in bags per acre obtained by farmers. The independent variable was adoption of improved agricultural practices taught by the extension service and had been fully adopted. Using the Statistical Package for Social Sciences (SPSS) software, analysis was performed for:

1. Descriptive statistics to compute frequency distributions, means, percentages
2. Correlations, multiple regression and stepwise linear regression to determine the relationship between maize yield and improved agricultural practices adopted.
3. Qualitative data from key informants was narrated.

Results and Discussion

Most of the respondents (69%) have land acreages of less than 3 acres; this implies that they grow maize on less than three acres of land. According to the key informant from Agricultural finance corporation, farmers who grew maize on less than five acres of land were not given seasonal loans, hence these respondents could not qualify for seasonal loans unless they formed groups and applied for loans as a group. These may have affected their ability to adopt improved practices such as planting with artificial fertilisers or manure, top dressing the maize and application of pesticides among others. This may have resulted in the low yields realised by the respondents. The results also revealed that only 20.9% of the respondents adopted all the extension packages passed by the extension staff, while 40.8% adopted only half of the extension packages passed.

The results further revealed that 61.4% of the respondents produced less than 10 bags of maize per acre, which is way below the expected average of 25 bags per acre. This was not adequate for feeding the families all the year round leading to food insecurity as reported by 60% of the respondents who were interviewed.

The level of adoption of improved agricultural practices by the farmers per district was determined as the fraction of the extension packages adopted in relation to the practices taught to the farmers (Table 2). Adoption of improved agricultural practices/ extension packages in this case meant that the farmer had gone through the adoption process that is awareness, interest stage and had finally accepted to practice the extension package taught.

Table 2

Various Levels of Adoption of Improved Agricultural Practices per District

Extension packages passed and adopted by farmers	BUNGOMA (%)	LUGARI (%)	MT. ELGON (%)	BUSIA (%)
None	22.4	28.2	34.5	23.5
Adopted ¼ of packages passed	12.0	1.7	5.2	0.0
Adopted ½ of packages passed	19.0	6.7	13.8	35.6
Adopted ¾ of packages passed	19.0	6.7	20.7	23.7
Adopted all of packages passed	27.6	56.7	25.8	17.2
TOTAL	100.0	100.0	100.0	100.0

Table 2 shows that Lugari District had the highest percentage (56.7%) of respondents who adopted all the packages passed to them by the extension staff and Busia District had the lowest (17.2%) percentage of respondents who had adopted all the packages passed to them. Mt. Elgon and Bungoma districts had 25.8% and 27.6% of respondents who had adopted all the packages passed to them by the extension staff, respectively. General Linear Model run revealed that respondents from Lugari District realised significantly higher yields than the respondents from Bungoma, Busia, and Mt. Elgon districts, as shown in Table 3.

Lugari District realised higher yields with 41.7% of the respondents harvesting more than twenty bags of maize per acre, while Busia District had no respondent harvesting more than twenty bags of maize per acre. Bungoma and Mt. Elgon districts had 10.5% and 5.1%, respectively, of the respondents harvesting more than twenty bags of maize per acre. This implied that farmers who adopted all the improved agricultural practices also realised the highest yields.

Table 3
Multiple Comparison of Maize Yield between the Study Districts

(I) District	(J) District	Mean Difference (I-J)	Significance
Lugari	Bungoma	1.7965*	.000
	Mt. Elgon	1.2977*	.000
	Busia	2.2904*	.000
Bungoma	Lugari	-1.7965*	.000
	Mt. Elgon	-0.4988*	.000
	Busia	0.4939*	.000
Mt. Elgon	Bungoma	0.4988*	.031
	Lugari	-1.2977*	.000
	Mt. Elgon	0.9927*	.000
Busia	Bungoma	-0.4939*	.032
	Lugari	-2.2904*	.000
	Mt. Elgon	-0.9927*	.000

One of the reasons why farmers would adopt most or all the practices passed to them were if the extension staff to farmer ratio was low and therefore, the extension staff were able to follow up the practices taught. Furthermore, Matthews-Njoku et al. (2009) stated that adoption and utilisation of agricultural technology by rural farmers is largely dependent on the relevance and effectiveness of information dissemination and the ability of extension agents to persuade the farmers. However, this may not be the reason why more respondents in Lugari District adopted all the improved agricultural practices because Mt Elgon had the lowest extension staff to farmer ratio (1:459), while Bungoma District had the highest ratio (1:1,508). Lugari had extension staff to farmer ratio of 1:597 and Busia District had extension staff to farmer ratio of 1:1,341.

The higher levels of adoption of improved agricultural practices exhibited in Lugari District may have resulted from the fact that most of the respondents (83.3%) relied solely on farming, as compared to the 61%, 68% and 77.5% of the respondents from Busia, Bungoma and Mt. Elgon districts respectively. In addition, more respondents (71.7 %) had more land (61-100%) under maize as compared to 32.8%, 3.4% and 3.3% respondents from

Bungoma, Mt. Elgon and Busia districts, respectively. Furthermore, relatively more respondents (53.5%) from Lugari District had secondary school level education and above as compared to the 40.4%, 22.6% and 21.1% respondents from Bungoma, Mt. Elgon and Busia districts, respectively.

Though there was no statistically significant relationship between the level of education and extension packages adopted by farmers, cross tabulation of the data revealed that more farmers with higher education (masters- 100%, college/ university-50%, secondary school-46.5%) adopted either three quarters or all the improved agricultural practices passed by extension staff as compared to 28.5% and 30.8% of farmers with primary and no formal education, respectively, as shown in Table 4.

The difference in education levels among farmers within and between districts implies that information on improved agricultural practices should be packaged differently to ensure that all the farmers understand and adopt the packages. It might also help if the level of education in the different districts would be considered when choosing the teaching methods to be used to pass improved practices to the farmers.

Table 4

Cross Tabulation of Education Level against Extension Packages Adopted

Education level	Improved agricultural practices adopted (%)					
	NA	None	One quarter	Half	Three Quarters	All
No formal education	19.2	7.7	11.5	30.8	15.4	15.4
Primary	26.7	6.0	24.1	14.7	14.7	13.8
Secondary	23.9	2.8	11.3	15.5	9.9	36.6
College/university	33.3	0	0	16.7	33.3	16.7
Post graduate	0	0	0	0	0	100

A key informant from the Ministry of Agriculture proposed that the reason for a high number of farmers in Lugari District adopting all the improved agricultural practices passed to them, could be because farmers in Lugari District may be commercial minded. This, the informant attributed to the fact that, the district initially was made up of large farms owned by white settlers; it was subdivided and sold in 1970s. Since the occupants had bought the land, they desired to make maximum profit from the land, as opposed to farmers from the other districts who had inherited small land parcels which were always used for subsistence farming. The informant reported that, the zeal of the farmers in Lugari District was evidenced by the fact that many farmers attended and participated in demonstrations organised by the Ministry of Agriculture and other extension service providers. This encouraged the service providers to carry out more demonstrations in the district.

The results further revealed that relatively few respondents from Busia District used fertiliser for planting (54.2%), top dressing (39.0%) and planted certified seed (32.2%) as shown in Table 5.

On the contrary, more respondents (37.3%) from Busia District as compared to 3.4%, 1.7% and 0% respondents from Bungoma, Lugari and Mt. Elgon districts, respectively, planted their own seeds which they had selected from the maize that they had harvested the previous year as shown in Table 5. The failure of farmers in Busia District to plant certified maize seed, and to plant and top dress their maize with fertiliser is worrying since the soils in the district like in most parts of Western Province is low in plant nutrients (Woomer & Mukhwana, 2004).

According to a key informant in the Ministry of Agriculture, failure by farmers in

Busia District to use fertiliser and certified seed may have been due to the sparse distribution of input stockists in the District. This is confirmed by CNFA and AGMARK (2005) who suggested that permanent stockist to farmer population ratio in Busia District is 1:12,625 as compared to 1:4,333; 1:5,252 and 1:7,272 farmer to permanent stockists in Mt. Elgon, Bungoma and Lugari districts, respectively.

Most of the farmers in Lugari District planted (91.7%) and top dressed (93.3%) their maize with fertiliser. In addition, a majority (93.3%) of the respondents from Lugari District planted certified seed. A key informant in the Ministry of Agriculture reported that more farmers in Lugari District have access to input stores. These differences between Lugari District and Busia District could, in part, explain the differences in maize yield between the two districts. A relatively high percentage of farmers from Busia District said that they could not use fertiliser for top dressing (51%) and planting (38.5%) because they lacked funds and that the fertilisers were expensive. Lack of finance as a hindrance to adoption of improved agricultural practices among small scale farmers has also been supported by Matthews-Njoku et al. (2009). Generally, respondents from Busia District did not adopt most of the recommended practices necessary for improving maize production yet they realised the lowest maize yields.

Lack of finance could be due to the fact that high percentages (61%) of farmers in Busia District live below the poverty line (CBS, 2001a). Furthermore, there were few financial institutions in Busia District that lend to farmers. Besides, Agricultural Finance Corporation did not exist in Busia District. A key informant from the corporation said that Busia was not one of the areas gazetted to benefit from the scheme.

Table 5
Percentage of the Respondents in the Study Districts Who Adopted Various Improved Maize Production Practices

	BUNGOMA		LUGARI		MT. ELGON		BUSIA	
	YES	NO	YES	NO	YES	NO	YES	NO
Use of fertiliser for planting	70.7	29.3	91.7	8.3	84.5	15.5	54.2	45.8
Use of fertiliser for top dressing	58.6	41.4	93.3	6.7	58.6	41.4	39.0	61.0
Use of manure	77.6	22.4	61.0	39.0	37.9	62.1	69.5	30.5
Use of certified seed	37.9	62.1	96.6	3.4	87.9	12.1	32.2	67.8
Use of local seed from neighbouring country	15.5	84.5	0	100	0	100	11.9	88.1
Use of local seed from local market	12.1	87.9	3.3	96.7	8.6	91.4	52.5	47.5
Use of local seed from neighbours	15.5	84.5	18.3	81.7	8.6	91.4	6.8	93.2
Use of own seed from previous harvest	3.4	96.6	1.7	98.3	0	100	37.3	62.7

Generally, most of the respondents from the study districts used manure to plant their maize, except for Mt. Elgon District where 37.9% of the farmers interviewed did not plant maize using manure. The respondents from Mt. Elgon District who did not use manure claimed that they lacked materials for preparing the manure.

Though few respondents from Busia, Bungoma and Mt. Elgon Districts adopted all the packages passed to them, most of them (66.7%, 62.1%, 69.0% and 83.1%) in Lugari, Bungoma, Mt. Elgon and Busia districts, respectively, reported that the adoption of improved maize production practices resulted in increased production. In addition, most of the respondents in the study districts said that they believed that small-scale farmers would easily adopt improved agricultural practices advocated for by extension staff because the practices were easy to adopt.

Conclusions

Adoption of improved agricultural practices by farmers significantly influenced the variance in maize yield, with the farmers who top dressed their maize realising the highest yields. In addition, most of the respondents reported that adoption of improved maize practices resulted in increased production and that small scale farmers were able to adopt these practices because they were easy to adopt.

The study further concluded that farmers from Lugari District realised high maize yields in Western Province as compared to the other study districts. The reasons for high maize yield could be because most farmers from Lugari District:

- Had attained secondary school education and above and therefore, were able to understand and adopt the improved agricultural practices passed by the extension staff.
- Had farming as their sole occupation and were not involved in other forms of employment.
- Adopted all the improved agricultural practices passed by the extension staff.

Recommendations

1. Efforts should be made in Western Province to encourage farmers to adopt improved agricultural practices in order to improve maize production.
2. The education level of the farmers should be considered when coming up with extension packages and methods to ensure maximum adoption of the packages passed.
3. The farmers should be facilitated so that they can adopt improved agricultural practices by providing them with soft loans so that they can be able to buy inputs. In addition, more input stockists with knowledge on agricultural production should be licensed so that more farmers have access to the inputs and to stabilise input prices.

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**Citation Structure: An Analysis of the Literature Cited in the
Journal of International Agricultural and Extension Education from 1997 to 2006**

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Abstract

The Journal of International Agricultural and Extension Education (JIAEE) has been an outlet of international agricultural development and education publishing and research dissemination and publishing. The purpose of this study was to assess ten-years of JIAEE to determine literature cited. The study used a quantitative content analysis design. Analyzed in this study were 144 research articles published in JIAEE issues I and III, from 1997 through 2006. There were 2,286 cited literature works identified in the journal. The average number of citations per article was approximately 20. Cited works from premier agricultural education journals were tracked for citation frequencies, in terms of author(s) and year of publication. A total of 234 references were made to premier journals in agricultural education. Citation analysis indicates that JIAEE relies heavily on books published prior to the 1990s. Published articles also cited other journals and conference proceedings produced within the international agriculture arena. JIAEE does not exhibit compactness, indicating that it reaches past its citation boundaries and into interrelated areas of other disciplines. However, it does exhibit weak self-identity meaning it does little to build upon research previously cited in JIAEE.

Keywords: cited literature, citationology, content analysis, Extension, agricultural education

Introduction

In 1984, agricultural education faculty members interested in international development organized the Association for International Agricultural Education (Meaders, 2009). Now, twenty-five years later, this organization is named the Association for International Agricultural and Extension Education (AIAEE). In 1994, AIAEE published the first issue of the *Journal of International Agricultural and Extension Education (JIAEE)*. *JIAEE* has been a primary outlet for disseminating research, developmental activities, and publishing in international agricultural development and Extension education (Edgar, Rutherford, & Briers, 2008d).

During *JIAEE's* lifespan, minimal research has focused on assessing the content of the journal. However, a number of researchers have examined various publishing and research aspects within the agricultural education profession. In 1994, research indicated the explicit need to analyze citation characteristics in agricultural education (Radhakrishna, Eaton, Conroy, & Jackson). The research further noted "a number of researchers in various scientific disciplines have considered citation structure as a good indicator of the nature of scientific activity" (p. 61). Also, quoting additional experts whom indicated analyses of citation structures "characterize a field of study, define its boundaries, and explain how a discipline is interrelated with other fields of study" (p. 61). An indication of scholars' behavior is citation use because it reflects an author's commitment to earlier works. The frequency of cited literature can provide a framework of important references and can be a way for researchers to identify a specific author's work and their relation/commitment to earlier research (Garfield, 1998).

Research identified a need to review previous literature in an effort to track citations and identify a sense of a disciplines research agenda (Miller, Stewart, & West, 2006). In 2007, the agricultural education discipline published a *National Research Agenda [NRA]: Agricultural Education and Communication 2007-2010* (Osborne, n.d.). Within the *NRA* international agriculture was noted as a component of the large umbrella of the discipline. Because international agriculture is a unique field of study that supports its own inquiry and the research and scholarly endeavors

of other disciplines, it is important to understand citation structures of research articles in the profession. Does international agriculture and Extension education primarily cite works created in the field, or does it rely on other disciplines as literary staples?

In 1994, a content analysis of the *Journal of Agricultural Education (JAE)* indicated the agricultural education discipline appeared to have a strong self-identify (building on other researchers work within the discipline of agricultural education) and compactness (citing from few "core" journals) (Radhakrishna et al.). However, a 1995 study indicated agricultural education should expand their focus to include other areas of research interests for professionals in the field (Radhakrishna). With this expressed need and the creation of the *NRA* it is important to understand how research journals, identified as premier in the discipline, are influencing the field.

JIAEE was identified as the premier international agricultural research journal in agricultural education (Edgar, Briers, & Rutherford, 2008b), and it should be examined to determine the level and depth of literature citations (Edgar, Briers, & Rutherford, 2008a). It is also important to determine how *JIAEE* cites itself and other identified premier agricultural education journals: *JAE*, the *North American Colleges and Teachers of Agriculture Journal (NACTA)*, the *Journal of Extension (JOE)*, the *Journal of Applied Communications (JAC)*, and the *Journal of Leadership Education (JOLE)*. Because citation structure has been used to characterize a field of study (Shinn, Wingenbach, Lindner, & Briers, 2009) and explain how a discipline is interrelated to other fields of study (Narin, Carpenter, & Berlt, 1972), it is important for researchers to be familiar and aware of literature previously cited in *JIAEE*.

Analyzing literature citations adds to understanding and the identification of the literature base. In an effort to better understand where international agriculture and Extension education is securing information a content analysis can be used to analyze literature cited. To better understand the scope of international agriculture and how it supports the larger umbrella of agricultural education *JIAEE* should be analyzed. Since 1994, little to no research has focused on work cited in the discipline. If international agricultural and Extension education researchers want to remain

progressive and determine their research impact and scope it is crucial to examine cited works used in its premier journal. This research answers the call from Radhakrishna, Eaton, Conroy, and Jackson (1994) to review citations in [premier] journals at least every ten years. Citation research allows a discipline to determine where “changes have taken place as a result of research and development efforts in the profession” (Radhakrishna et al., 1994, p. 64).

Citations can be used as indicators of scholars’ behavior because it reflects an author’s debt to earlier works. The frequency of cited literature can provide a framework of important references and can be a method for researchers to identify an author’s research focus and work and their commitment to specific lines of inquiry and other researchers in the field. Tracking cited literature in *JIAEE* is needed to better understand how international agricultural and Extension education is enhancing the agricultural education discipline.

Conceptual Framework

The future of international agricultural and Extension education depends on the acquisition and application of new knowledge via research (Dyer, Haase-Wittler, & Washburn, 2003). The conceptual framework of the study was grounded in work by numerous scholars in international and agricultural education. “Several researchers have completed various components of journal analyses in agricultural education: familiarity and quality of journals and importance of faculty publishing” (Edgar, Edgar, Briers, & Rutherford, 2008c, p. 4); research theme areas (Buriak & Shinn, 1993; Dyer et al., 2003; Edgar et al., 2008a; Edgar, Briers, & Rutherford, 2008d; Miller et al., 2006; Moore, 1991; Radhakrishna & Xu, 1997; Silva-Guerrero & Sutphin, 1990); prolific authors (Edgar et al., 2008a; Edgar et al., 2008b; Edgar, Edgar, Briers, & Rutherford, 2008c; Harder & Roberts, 2006; Radhakrishna & Jackson, 1995; Radhakrishna, Jackson, & Eaton, 1992); statistical methods used (Bowen, Rollins, Baggett, & Miller, 1990; Dyer et al., 2003; Edgar et al., 2008b; Edgar et al., 2008c; Mannenbach, McKenna, & Pfau., 1984), and cited literature (Edgar & Edgar, 2009; Moore, 1991; Radhakrishna et al., 1994; Radhakrishna, 1995; Miller et al., 2006). Conceptually this study focused on cited literature. Citationology, the theory and practice of analyzing citations, allows a discipline to

determine reference topology (Garfield, 1998, p. 69).

Purpose and Objectives

The purpose of this study was to review research published in *JIAEE* from 1997 to 2006, and examine the historical record of the journal to provide insight into its cited works. The objective was to describe and synthesize frequently cited literature in *JIAEE* during the ten year period by identifying: (a) premier journal articles (represented by author(s) and year); (b) books/texts; (c) journals; (d) proceedings, conferences, and meetings; (e) other works (dissertations, Extension and university manuscripts, newspapers, etc); and (f) WebPages.

Research Methods and Procedures

This study employed a quantitative content analysis design. Research methods involving content analysis has existed for decades (Weber, 1990). Discussed in previous literature, “content analysis can be used to give researchers insight into problems or hypotheses that can then be tested by more direct methods. Content analysis is a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson, 1952; Krippendorff, 1980; Weber, 1990)” (Edgar et al., 2008c, p. 5).

This study maintained content validity by using previous research as a guide. The research frame was feature articles published in *JIAEE* issues I and III from 1997 to 2006. As previously discussed:

The principal investigator and a peer independently reviewed the material and formed a checklist of information required during the review of each journal article. The researchers compared notes and reconciled differences on their initial checklists via negotiations. Researchers used a consolidated checklist to independently apply coding. The researchers then checked for agreement in coding; if reliability was not acceptable, then the previous steps were repeated. Once reliability had been established, coding was applied on a large-scale basis. The final stage was a periodic quality control check (Weber, 1990). Inter-coder

reliability was completed with at least 10% overlap for the reliability test. Final reliability was calculated using a random sample of 5% of the analyzed articles. Reliability was assessed using Spearman's rho statistical analysis. Spearman's rho is a statistical calculation that takes two rankings and produces a numerical relation from 1 to -1 (a score of 1 means that the lists are identical, a -1 means that the lists are reversed, and 0 (zero) score means that there is no relation whatsoever between the two lists). Reliabilities met or exceeded the minimum standard of .70 (Bowen et al., 1990; Tuckman, 1999 as cited by Edgar et al., 2008c, p. 6).

Findings

All research feature articles ($N = 144$) published in *JIAEE* from 1997 to 2006 were analyzed for cited literature. A total of 2,286 cited works were identified. The average number of citations per article was approximately 20. Premier agricultural education (AGED) journals were tracked for their cited literature, in terms of author(s) and year of publication. A total of 234 references were made to premier AGED journals, representing 10.24% of the total cited literature in *JIAEE*. There were 65 cited works from previous publications of *Journal of Agricultural Education (JAE)*. Five groups of authors were identified as the most frequently cited *JAE* authors in *JIAEE*, referenced 4.6%. These referenced authors were: Chizari, Karbasioun, and Lindner (1998); Findlay (1992); Ibezim and McCracken (1994); Lindner and Dooley (2002); and Lindner, Murphy, and Briers (2001). Additional frequently referenced *JAE* articles, identified by the author(s) and year of publication, cited 3.1% or more are identified in Table 1.

Table 1

Frequently Cited Journal of Agricultural Education Authors Referenced in JIAEE 1997–2006 (n = 65)

Journal Author(s) and Year of Publication	<i>f</i>	<i>P</i>
Chizari, M., Karbasioun, M., & Lindner, J. R. (1998)	3	4.6
Findlay, H. J. (1992)	3	4.6
Ibezim, D. O. & McCracken, J. D. (1994)	3	4.6
Lindner, J. R. & Dooley, K. E. (2002)	3	4.6
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	3	4.6
Chizari, M., Lindner, J. R., & Zoghie, M. (1999)	2	3.1
Clason, D. L. & Dormody, T. J. (1994)	2	3.1
Dyer, J. E. & Osborne, E. W. (1996)	2	3.1
McCormick, D. F. & Whittington, M. S. (2000)	2	3.1
Miller, L. E. (1998)	2	3.1
Waters, R. G. & Haskell, L. J. (1989)	2	3.1

There were 107 citations referenced works from previous *JIAEE* articles. Acker and Scanes 2000 and 1998 articles were the most frequently cited *JIAEE* articles in *JIAEE*, being cited in almost

5% of all the articles. Table 2 contains a list of frequently cited *JIAEE* articles cited 1.9% or more.

Table 2

Frequently Cited Journal of International Agricultural and Extension Education Authors Referenced in JIAEE 1997–2006 (n = 107)

Journal Author(s) and Year of Publication	<i>f</i>	<i>P</i>
Acker, D. G. & Scanes C. G. (2000)	5	4.7
Acker, D. G. & Scanes, C. G. (1998)	5	4.7
Bruening, T. H. & Frick, M. (2004)	4	3.7
Duffy, S., Toness, A., & Christiansen, J. (1998)	3	2.8
Pezeshki-Raad, G., Yoder, E. P., & Diamond, J. E. (1994)	3	2.8
Sammons, S. & Martin, R. (1997)	3	2.8
Acker, D. G. (1999)	2	1.9
Akpan, M. & Martin R. A. (1996)	2	1.9
Bruening, T. H. & Shao, X. (2005)	2	1.9
Martin, R. A. & Rajasekaran, B. (1994)	2	1.9
Place, N. T., Evans, D. E., Andrews, M. P., & Crago, N. E. (2000)	2	1.9
Radhakrishna, R. B. & Dominquez, D. (1999)	2	1.9
Redmann, D. H., Schupp, A. R., & Richardson, W. B. (1998)	2	1.9
Wallace, I. R. (1999)	2	1.9

There were 49 citations referencing works from the *Journal of Extension (JOE)* represented in *JIAEE*. Miller and Smith (1983) article was the most frequently cited. The article was referenced

in 18.4% of the identified *JOE* articles. Table 3 contains a list of frequently cited *JOE* articles, identified by the author(s) and year of publication, referenced 4.1% or more.

Table 3

Frequently Cited Journal of Extension Authors Referenced in JIAEE 1997–2006 (n = 49)

Journal Author(s) and Year of Publication	<i>f</i>	<i>P</i>
Miller, L. E. & Smith, K. L. (1983)	9	18.4
Barao, S. M. (1992)	2	4.1
Bloome, P. (1993)	2	4.1
Ludwig, B. G. (1999)	2	4.1
Ludwig, B. G. (1993)	2	4.1

There were eleven referenced articles to the *North American Colleges and Teachers of Agriculture (NACTA)* Journal. Two *NACTA* articles: Mason, S., Eskridge, K., Kliewer, B., Bonifas, G., Deprez, J., Medinger Pallas, C., & Meyer, M. (1994) and Newcomb, L. H. & Clark, R. W. (1985) were referenced twice (27.3%). The remaining seven *NACTA* authors were each referenced once.

There were two referenced works to the *Journal of Applied Communications (JAC)*. The cited articles were Buchili, V. & Pearce, B.

(1974) and Suvedi, M, Campo, S., & Lapinski, M. K. (1999) (50%).

The *JIAEE* content analysis yielded no citations to the *Journal of Leadership Education (JOLE)*.

In *JIAEE*, there were 234 citations referencing the six premier agricultural education (AGED) journals as identified by Edgar et al. (2008a). An important component of this research was identifying how *JIAEE* was citing other journals in the large umbrella of the agricultural education discipline. The most

frequently cited referenced premier AGED journal article was produced by Miller and Smith (1983) for their work published in the *JOE*. Of all the referenced work from premier

AGED journals, their work was cited almost 4% of the total articles. Table 4 contains a list of frequently cited premier AGED journal articles, by author(s) and year, cited 1.3% or more.

Table 4

Frequently Cited Premier AGED Journal Authors Referenced in JIAEE from 1997–2006 (N = 234)

AGED Journal Author	Journal	f	P
Miller, L. E. & Smith, K. L. (1983)	<i>JOE</i>	9	3.8
Acker, D. G. & Scanes C. G. (2000)	<i>JIAEE</i>	5	2.1
Acker, D. G. & Scanes, C. G. (1998)	<i>JIAEE</i>	5	2.1
Bruening, T. H. & Frick, M. (2004)	<i>JIAEE</i>	4	1.7
Chizari, M., Karbasioun, M., & Lindner, J. R. (1998)	<i>JAE</i>	3	1.3
Duffy, S., Toness, A., & Christiansen, J. (1998)	<i>JIAEE</i>	3	1.3
Findlay, H. J. (1992)	<i>JAE</i>	3	1.3
Ibezim, D. O. & McCracken, J. D. (1994)	<i>JAE</i>	3	1.3
Lindner, J. R. & Dooley, K. E. (2002)	<i>JAE</i>	3	1.3
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAE</i>	3	1.3
Pezeshki-Raad, G., Yoder, E. P., & Diamond, J. E. (1994)	<i>JIAEE</i>	3	1.3
Sammons, S. & Martin, R. (1997)	<i>JIAEE</i>	3	1.3

The 10-year content analysis of *JIAEE* identified 886 cited books and texts. Books with multiple edition and publication dates are noted in the following table. The most frequently cited book was Rogers' (1995) *Diffusion of Innovations*, which was cited in 0.9% of the total books referenced. Additional frequently cited books and texts identified 0.34% or more, in *JIAEE* from 1997-2006, are identified in Table 5. Noteworthy is the numerous texts referenced from the 1990s or earlier.

JIAEE cited additional journals, other than those identified as premier AGED journals, 447 times. There was a tremendous amount of variation within the journal sources referenced. *South African Journal of Agricultural Extension* was the most frequently cited journal of all journal citations in *JIAEE*, this journal was referenced 3.13%. A list of frequently cited journals identified 1.12% or more (excluding the premier AGED journals) are identified in Table 6.

Table 5

Frequently Cited Books and Texts Referenced in JIAEE from 1997–2006 (N = 886)

Book and Text	<i>f</i>	<i>P</i>
Rogers, E.M. (1995; 1983). <i>Diffusion of innovations</i> (4th ed.). New York: The Free Press.	8	0.90
Dillman, D. A. (2000; 1987; 1978). <i>Mail and internet surveys: The tailored design method</i> (2nd ed.). New York: Wiley & Sons.	7	0.79
Davis, J. A. (1971). <i>Elementary survey analysis</i> . Englewood, NJ: Prentice-Hall.	6	0.68
Lincoln, Y.S., & Guba, E.G. (1985). <i>Naturalistic inquiry</i> . Beverly Hills: Sage.	6	0.68
Seevers, B., Graham, D., Gamon, J., & Conklin N. (1997). <i>Education through Cooperative Extension</i> . Albany, NY, Delmar Publishers.	5	0.56
Van den Ban, A. W., & Hawkins, H. S. (1988). <i>Agricultural Extension</i> . New York, NY: John Wiley & Sons, Inc.	5	0.56
Cohen, J. (1988). <i>Statistical power analysis for the behavioral sciences</i> (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.	4	0.45
Kerlinger, F. N. (1986). <i>Foundation of behavioral research</i> . New York: Holt, Rienhart, and Winston.	4	0.45
Patton, M. Q. (1990). <i>Qualitative evaluation and research methods</i> (2nd ed.). Newbury Park, CA: Sage.	4	0.45
Argyris, C., & Schön, D. A. (1996; 1978). <i>Organizational learning II: Theory, method, and practice</i> . Boston: Addison-Wesley.	3	0.34
Ban, A. W., & Hawkins, H. S. (1988). <i>Agricultural Extension</i> . England: Longman Scientific & Technical.	3	0.34
Chambers, R. (1997). <i>Whose reality counts? Putting the last first</i> . London: Intermediate Technology Publications	3	0.34
Knowles, M. S. (1980; 1970). <i>The modern practice of adult education: From pedagogy to andragogy</i> . Chicago: Association Press, Follett Publishing Company.	3	0.34
Swanson, B. E. (Ed.) (1990). <i>Report of the global consultation on agricultural extension</i> . Rome: Food and Agriculture Organization of the United Nations.	3	0.34

JIAEE cited proceedings, conferences, and/or meetings 194 times. The most frequently referenced proceeding, conference, and/or meeting was the *Association for International Agricultural and Extension Education Conference*. The conference was referenced 14.3% in all of the proceedings cited. Table 7 contains additional frequently cited proceedings, conferences, and/or meetings identified 1.0% or more, in *JIAEE* from 1997 to 2006.

The 10-year analysis of *JIAEE* identified other works cited 399 times. The most

frequently cited works were unpublished doctoral dissertations referenced 13.3%. Additional other works cited 1.3% or more, in *JIAEE* from 1997 to 2006, are identified in Table 8.

JIAEE from 1997 to 2006 cited WebPages 126 times. *JIAEE* relies heavily on citations from non-profit (.org) (37.3%) and education (.edu) (13.6%) WebPages. Additional cited WebPages referenced 2.3% or more are identified in Table 9.

Table 6

Frequently Cited Journals Referenced in JIAEE from 1997–2006 (N = 447)

Other Journals	<i>f</i>	<i>P</i>
<i>South African Journal of Agricultural Extension</i>	14	3.13
<i>Journal of Agricultural Education and Extension</i>	11	2.46
<i>World Development</i>	10	2.24
<i>Journal of Applied Psychology</i>	8	1.79
<i>Australian Journal of Experimental Agriculture</i>	6	1.34
<i>Educational and Psychological Measurement</i>	6	1.34
<i>European Journal of Agricultural Education and Extension</i>	6	1.34
<i>Journal of Teacher Education</i>	6	1.34
<i>Rural Sociology</i>	6	1.34
<i>Academy of Management Journal</i>	5	1.12
<i>Agricultural Systems</i>	5	1.12
<i>Agricultural Science</i>	5	1.12
<i>Journal of Extension Systems</i>	5	1.12
<i>Journal of Sustainable Agriculture</i>	5	1.12
<i>Research in Higher Education</i>	5	1.12
<i>Review of International Co-operation</i>	5	1.12
<i>Training and Development Journal</i>	5	1.12

Table 7

Frequently Cited Proceedings, Conferences, and/or Meetings in JIAEE from 1997–2006 (N = 194)

Proceeding, Conference, and Meeting	<i>f</i>	<i>P</i>
Association for International Agricultural and Extension Education Conference	28	14.3
Australian Institute of Agricultural Science	4	2.1
National Agricultural Education Research Conference	4	2.1
Proceedings of the New Zealand Society of Animal Production	3	1.5
Annual Teagasc National Dairy Conference	2	1.0
Forestry Education workshop	2	1.0
International Rangelands Congress	2	1.0
International Workshop on Transforming Agricultural Extension in Africa	2	1.0
Proceedings of a SACCAR/CIDA Workshop of Deans of Faculties of Agricultural Sciences and Representatives of Agribusiness in SADC Countries	2	1.0
Report of the Islamic Republic of Iran on Forestry Development and Key Events	2	1.0

Table 8

Frequently Cited Other Works Referenced in JIAEE from 1997–2006 (N = 399)

Other Works	<i>f</i>	<i>P</i>
Unpublished Doctoral Dissertation	53	13.3
Unpublished M.S. Thesis	34	8.5
Unpublished Manuscripts or Reports	33	8.3
Extension Manuscript	29	7.3
University Manuscript	28	7.0
Food and Agriculture Organization Manuals	27	6.8
Annual or Final Reports	24	6.0
Census/Government Documents	23	5.8
ERIC Documents	21	5.3
National Research Reports	18	4.5
Newspapers	16	4.0
Magazines	10	2.5
World Bank Research Reports	10	2.5
Manuscript Submitted for Publication	5	1.3

Table 9

Frequently Cited WebPages Referenced in JIAEE from 1997–2006 (N = 126)

WebPages	<i>f</i>	<i>P</i>
.org	47	37.3
.edu	17	13.5
.com	16	12.7
.gov	11	8.7
.net	6	4.8
.ie	5	4.0
.br	4	3.2
.ca	3	2.3
.int	3	2.3
Other (.ac.nz; .ac.uk; au; .gc.ca; go.tz; .html; .mx; .nk; .nl; .ul.pt)	14	11.1

Conclusions

“Journal analysis can provide a means of assessing key factors that usually indicate the research and publishing characteristics of a profession” (Radhakrishna et al., 1994, p. 64). This study was an attempt to identify the characteristics of literature cited in the *Journal of International Agricultural and Extension Education*. As stated by Miller et al. (2006), there is a need to track citations and review literature to gain a clear sense of a disciplines research agenda. This study highlights an in-depth look into the citation habits of

researchers associated with the premier international agricultural and Extension education research outlet (*JIAEE*) during a ten year period. Radhakrishna et al. (1994) and Garfield (1998) indicated that by identifying a discipline’s cited literature base, a framework could be developed to define and characterize a field of study and help explain the disciplines interrelatedness to other fields of study (Shinn et al., 2009). This study was an attempt to identify the cited literature base in *JIAEE* and determine its self-identity and compactness.

All research feature articles ($N = 144$) published in *JIAEE* issues I and III from 1997 to 2006 were analyzed for cited literature. There were a total of 2,286 cited works identified. The average number of citations per article was approximately 20. In articles published in the *JIAEE*, from 1997 through 2006, there is evidence that the discipline pulls from a breadth of research works. This study identified approximately 10% of the total literature cited was from works published in identified premier agricultural education journals (Edgar et al., 2008a). However, premier journals such as *NACTA*, *JAC*, and *JOLE* were under-represented or not cited in the literature. Of the 234 literature citations to premier AGED journals, *JIAEE* represented 45.7% of these total citations thus representing 4.68% of the total cited works. This study concludes that *JIAEE* exhibits weak self-identity, meaning it does little to build upon research previously cited in *JIAEE*. However, it does not exhibit compactness, indicating that it reaches past its citation boundaries and into interrelated areas of other disciplines as noted by the breadth of research citations.

Premier agricultural education (AGED) journal articles were tracked by journal author(s) and year of publication. There were 65 citations from previous research in the *Journal of Agricultural Education (JAE)*. There were five groups of *JAE* authors identified as the most frequently cited authors in *JIAEE*, being referenced 4.6%. These referenced authors were: Chizari, Karbasioun, and Lindner (1998); Findlay (1992); Ibezim and McCracken (1994); Lindner and Dooley (2002); and Lindner, Murphy, and Briers (2001).

JAE was identified, in previous research, as the premier journal in agricultural education (Edgar et al., 2008a; Edgar & Edgar, 2009). Within cited literature represented in *JIAEE*, *JAE* was referenced about half as much as *JIAEE*. Does this have implications for the international agricultural and Extension education profession? It does imply that *JIAEE* authors rely most heavily on itself and *JAE*, followed by *JOE* for literary works (when looking specifically at identified premier AGED journals). *JOE* was previously identified as the third most premier journal in the agricultural education discipline (Edgar et al., 2008a). In this study, *JOE* research was cited less than *JAE*. Because of *JOE*'s potential implications and influence on *JIAEE* research and publishing,

should we as international agricultural and Extension education researchers and practitioners strive to cite from this source more frequently? Similarly, *NACTA* and *JAC* and *JOLE* were also minimally cited in articles published in *JIAEE*. It is further concluded that research published from these journals are not used with emphasis or, perhaps, thought.

Approximately 18% of the total number of citations from *JOE* stem from a single article by Miller and Smith (1983) regarding non-response research methodology. This same article was identified as the most frequently cited premier agricultural education journal article represented in *JIAEE* citations. When looking at *JIAEE* citations of its own published works, there were not predominate works identified. This may be due to relatively few researchers producing articles that cover the breath of international agriculture and development and international Extension education.

The 10-year analysis of *JIAEE* identified 886 cited books and texts. The most frequently cited book was Rogers' (1995) *Diffusion of Innovations*, which was cited in almost 1% of the total book references. Books and text citations are dominated by research methods with six of the fourteen most frequently cited books focusing on research. Coinciding with this finding, the most common citations from *JOE* and *JAE* were research methodology citations. Additionally, a large percentage of cited books also focus on Extension and adult education (five of the fourteen most cited books). Conversely, there is a tremendous amount of variety in cited books within *JIAEE*. This variety is an indication that there are multiple books being cited on a single construct of knowledge. The majority of cited books were from the 1990s or earlier and this may be affecting the literature relevance of international agricultural and Extension education and development.

Additional journals, other than those identified as premier AGED journals, were referenced 447 times. The most frequently cited journal was the *South African Journal of Agricultural Extension*; referenced 3.13% in the total journals cited. References to the *Journal of Agricultural Education and Extension* (2.46%), *World Development* (2.24%), *Journal of Applied Psychology* (1.79%), *Australian Journal of Experimental Agriculture* (1.34%), *Educational and Psychological Measurement* (1.34%),

European Journal of Agricultural Education and Extension (1.34%), *Journal of Teacher Education* (1.34%), and *Rural Sociology* (1.34%) indicate *JIAEE* research authors are using multiple international agriculture, agriculture development, and specialized construct (teacher education, measurement, sociology) journals to build on knowledge domains.

Following suit, citations referring to conference proceedings and/or meetings are diverse. With the most frequently cited conference being the Association for International Agricultural and Extension Education (AIAEE) Conference (14.3%); followed by the Australian Institute of Agricultural Science and the National Agriculture Education Research Conference (2.1%). There is a large frequency gap between the most frequently cited conference and the remaining conference citations. However, since AIAEE is the conference that most closely relates to the *JIAEE* this finding may have been anticipated. Similarly, unpublished doctoral dissertations (13.3%) and unpublished masters theses (8.5%) were the most referenced other works. It is unclear whether these unpublished dissertations and theses are being published later as research articles. What implications does this have for international agricultural education, development and Extension research? *JIAEE*, from 1997 to 2006, cited WebPages 126 times. The most frequently cited WebPages were .org sites; referenced 37.3%. The discipline relies heavily on citations from non-profit (.org) (37%) and education (.edu) (13.5%) sites. How these WebPages are being used has not been determined; however, it is encouraging that the majority of citations are from Web-based extensions associated with trustworthy information.

Citation analysis indicates that *JIAEE* relies heavily on books, journals, conference proceedings and other literacy works that cover an expansive breath of works both in and out of the international agriculture, Extension and development arena. *JIAEE* does not exhibit self-reliance, indicating that its authors reach past its citation boundaries, and into interrelated areas and disciplines. Additional replications of this study should continue to assess progress *JIAEE*. Research should be conducted to determine if/how this (premier) journal is being cited in other fields of study.

Literature citations characterize a field of study. Furthermore, they define a discipline's limits and clarify the interrelatedness with other fields of study (Radhakrishna et al., 1994). *JIAEE* exhibits an expansive cited literature (citationology) reach focusing on multiple disciplinary areas and fields of studies. It also exhibits connectedness to most of the identified premier journals in agricultural education. Because of the nature of international agriculture, extension, development and research, it is often necessary for researchers to expand into multiple research outlets, in an effort to find the best "suitable" outlet for their diverse works. This necessity to publish in other venues may be helping to eliminate compactness in the *Journal of International Agricultural and Extension Education*. It can be assumed, due to the lack of compactness, that international agricultural education, Extension, development and research is offering discovery in other fields of study. However, the non-compactness of the citation structure in *JIAEE* reveals limited published works from within itself and creates weak self-identity.

Recommendations

Based on the findings of this study recommendations include:

1. Further research should be completed to determine the depth of *JIAEE* citations in other identified premier journals in agricultural education in an effort to further identify the scope and influence of *JIAEE* on the agricultural education discipline and its literary works.
2. Further research should be completed to better determine how various cited books influence international agricultural development and research. It would also be important to determine if cited books are seminal or out-of-date works.
3. It may prove valuable to determine if conference proceedings, doctoral dissertations, and master's theses progress to permanent literature published in *JIAEE*.
4. Additional research should be completed to determine if this (premier) journal is being cited in other fields of study.
5. Expanding the quantity of research articles produced annually in *JIAEE* and

encouraging international agricultural researchers to cite from previous articles in *JIAEE* could help the identified weak self-identity.

6. This study should be replicated at a ten year cycle to assess progress in the *Journal of International Agricultural and Extension Education*.
7. Additional research should focus on determining what drives citations in international agricultural education, Extension, development and research. Is it primarily *who* citers know (social structure) or *what* they know (intellectual structure)?

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**Exploring the Leadership Behaviors of Community Leaders
in northeastern North Carolina**

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Abstract

Understanding and addressing the leadership needs of communities is important to program development of Cooperative Extension. As an initial step in the development of an instrument that could measure the effectiveness of leadership development programs upon the leadership skills of community leaders, the researchers used data from focus groups and interviews to assess community leaders' practices and behaviors as related to Kouzes and Posner's framework (2007). The themes identified provide strong evidence of leadership practices and behaviors of community leaders. The findings suggest that the Kouzes and Posner's instrument, the Leadership Practices Inventory (LPI), can be modified to become an assessment tool for use with community group leaders.

Keywords: leadership, community leaders, focus groups

Introduction

Can the effectiveness of leadership development programs upon the leadership skills of community leaders in rural communities be measured? If so, the implications of such measurements could have far reaching impact upon leadership programs undertaken by Extension agents in rural areas in the United States and in countries throughout the world. The authors assumed that measurements of the validity and impact of such programs are possible and undertook to develop and test an instrument for that purpose. As an initial step in the development of such an instrument, two groups of self-identified leaders in 12 rural counties in northeastern North Carolina in which agribusiness predominates were interviewed. This article discusses those interviews and the implications of the information gleaned from them upon the development of an instrument based upon Kouzes and Posner's framework (2007).

The Need for an Assessment Instrument

The current perception that leadership development programs are important to communities in both the United States and internationally is well established (Hustedde & Woodward, 1996; Ricketts & Morgan, 2009; Tackie, Findley, Barharanyi & Pierce, 2004). Over the past 15 years, various researchers, including Cooperative Extension, have created or examined numerous leadership-development programs with the goal of enhancing community development and sustainability (Earnest, Ellsworth, Nieto, McCaslin & Lackman, 1995; Schauber & Kirk, 2001; Tackie, Findley, Barharanyi, & Pierce, 2004; Walker & Gray, 2009). Increasingly, those sponsoring as well as those conducting such programs have expressed interest in ascertaining whether tests or assessment techniques exist to measure the effectiveness of leadership programs. A review of the relevant literature indicates that scant attention has been given to the development of an instrument specifically designed to test the impact of leadership development programs upon the leadership behaviors and practices of community leaders.

In 2004, the Extension agents conducting the *Community Voices Leadership Development Program (CV)* sought to assess the

past effectiveness of their ongoing program. The CV program is a multi-year community leadership development program developed by the Cooperative Extension Program and other collaborators with funding from the W. K. Kellogg Foundation (Callaway, Arnold & Norman, 1993). "The goal of the CV program is to increase the number of leaders in various rural, limited resource areas, including North Carolina, and to increase the leadership skills of those leaders to the extent that they become involved in community decision-making" (Walker & Gray, 2009). As an initial phase of the CV program, several hundred community leaders in twelve counties in northeastern North Carolina were recruited to participate in a leadership program. Grouped by the communities they represented, these leaders met on a periodic basis over a six-month period. Each group chose a project they wished to promote in their communities, received training and input from various educational modules planned and implemented by the program providers, and then implemented to conclusion the project they had selected. The sponsors of the CV program wanted to know whether leadership training had an impact on leaders.

In 2005 as an initial step in assessing the impact of the leadership training developed and implemented through Extension, the researchers conducted a study of community leaders in northeastern NC who had participated in the CV program and of community leaders who had not. The study consisted of two components. First, the CV program participants took part in independent focus groups conducted by the researchers. Secondly, the researchers conducted one-on-one interviews of both CV program participants and non-participants. Non-participants of the CV program were included in the interviews to assure that leadership behaviors of community leaders were fully explored.

Purpose and Objectives

The purposes of the study were to determine the typical leadership behaviors or practices of rural leaders and the language they used to describe these behaviors or practices. Prompted by questions from the interviewers, the target population identified themes about leadership. The researchers theorized that if common leadership themes could be identified,

an instrument measuring the effectiveness of leadership development programs could be developed. The information gathered from the focus groups and interviews and the implications of that information upon the potential development of an assessment tool are discussed below.

Methods

To understand fully the methods used in this study, a review of the fundamental aspects of focus groups and interviews is helpful. According to Krueger and Casey (2000) a focus group is “a carefully planned series of discussions designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment” (p.5). Focus-group data collection is qualitative in nature and may provide the “big picture” about a construct, while interviews allow for greater exploration of the topic of interest, using open-ended questions followed by questions seeking more in-depth answers or clarification (Babbie, 2007; Creswell, 2003). Used in tandem, both methods can help to identify variables to measure the construct of interest.

Focus groups provide insight about a topic of interest by allowing participants freedom to say anything they would like about the topic. The researcher is interested in the content, but also the meaning behind the words. Because focus groups are social in nature, the public aspect of the interaction shapes the data and the information obtained reflects the “combined local perspective” (Allen, Grudens-Schuck & Larson, 2004, p. 2). Participants are selected because of their similarity to other participants with a goal of producing an atmosphere where conversation is easy and ideas are not censored (Allen, et al, 2004). Finally, focus groups work best when topics are of interest to the group, but are not “hot” topics; that is, topics that tend to create conflict.

Recently, focus groups have been used in the study of international agriculture and extension to examine the attitudes and beliefs of persons in Mexico (Tuttle, 2007), Costa Rica (Dragon & Place, 2006), the U. S. Virgin Islands (Mwaijande, Miller, Wailes, & Peterson, 2009) and the United States (Benavente, Jayaratne, & Jones, 2009). The themes that emerge from focus groups may be the foundation for additional research.

While focus groups tend to reflect the perspective of the group, a qualitative interview reflects the perspective of an individual. “A qualitative interview is essentially a conversation in which the interviewer establishes a general direction for the conversation and pursues specific topics raised by the respondent” (Babbie, 2007, p. 306). Interviewers may be “mining” for information while asking respondents to elaborate on a particular topic of interest through guided conversation (Babbie, 2007).

Data Collection

As indicated, data were collected using both focus groups and interviews. During the spring/summer of 2005 Cooperative Extension agents organized two focus groups consisting of members of community groups who had participated in the CV program. The first focus group had 9 participants and the second had 15. Individual interviews were held with 12 leaders who had been active in their respective communities over time, some of whom had participated in the CV program and others who had not. None of the persons who were individually interviewed had participated in the two focus groups. The two data-collection methods were used to confirm that the focus group data represented the behaviors/practices of community leaders and that the CV participants were not presenting unique behaviors as a result of having gone through specific training. The focus groups and interviews followed a systematic interview guide with a focus on two broad areas: What influenced successful community leadership and what are the actions and behaviors in which rural community leaders are likely to engage?

A trained facilitator conducted the focus groups informally in comfortable settings, such as community centers located in the residents’ home county (Miles & Huberman, 1994). The facilitator was well-versed in community work, knew how to encourage participation from each person, and knew the goals of the project. During the focus group sessions, the facilitator created an atmosphere that encouraged participants to freely express different opinions and indicated that there were no “right or wrong” answers. The facilitator asked both focus groups the same questions with questions moving from general to more specific, such as “What would you like to see your community

become in the future?” and “How are you able to get people to work with you on your vision for the community?” Focus groups lasted approximately 1.5 hours. All sessions were audio taped with the participants’ consent. Transcripts of the sessions were produced. An abridged transcript of useful information that reflected behaviors or actions was made (Kruger, 1998). A person not present at the focus group transcribed the audio tapes and the

two researchers who were present during the focus group sessions compared the tapes with the transcripts (Kruger, 1998). Coders reviewed the transcripts and highlighted any sentences that included behaviors or actions developed from the review of literature provided by the researchers. See Table 1. Coders also listed any actions or behaviors that were not previously provided.

Table 1

Partial List of Leadership Behaviors/Actions Identified by Researchers from Review of Literature on Leadership Practices

Behaviors/Actions of Leaders
Keeps commitments
Gets along with peers
Monitors progress of group
Achieves goals
Affords latitude in accomplishing group goals
Shares leadership philosophy with group
Encourages professional growth of group
Sees change as positive
Demonstrates confidence in others
Manages large projects by setting milestones
Takes calculated risks
Treats people fairly

Researchers conducted interviews of 12 people using an interview schedule of questions for each interview. Interviews were approximately one hour long. The same procedure used for the focus groups was used for the interview including audio taping the interviews, producing a transcript, defining useful information, and coding the transcript. Coders identified the behaviors or actions developed from the review of literature provided by the researchers.

The researchers used the qualitative data gathered from the focus groups and interviews to identify and confirm leadership themes. The data were content analyzed to identify the themes/best practices. The researchers compared these themes to the practices previously identified in the review of literature.

In order to assure the truthfulness of the results, control measures were implemented throughout the study. An external reviewer evaluated the methodology prior to

implementation of the study and another external reviewer evaluated the raw data (transcripts), abridged transcripts, researcher notes, and the coded abridged transcripts (Given, 2008). Abridged transcripts were read, analyzed, and coded independently by multiple researchers to ensure data accuracy. A total of 14 transcripts were coded using a number code for each leader. The external reviews and independent coding by the researchers provide an audit trail.

The theoretical framework for analysis of the data was Kouzes and Posner’s (2007) leadership practices and behaviors. This framework was used because the research of Kouzes and Posner is based on a broad and geographically diverse sample of leaders (for a review of this work see Posner and Kouzes, 1988, 1993 and Kouzes and Posner, 2007); it is widely used in adult education settings (Bolton & Spence, 2006; Earnest, et al, 1996; Long, 1991); and the practices and behaviors identified reflect many of the behaviors observed by the

researchers as they work with adult leaders. The five key practices identified by Kouzes and Posner (2007) are: Challenging the Process, Inspiring a Shared Vision, Enabling Others to Act, Modeling the Way, and Encouraging the Heart.

Leaders who challenge the process are innovative in their approaches to community projects; they are willing to experiment and take risks, always recognizing that they may experience failure and there may be barriers to innovation. Leaders understand that both failures and barriers require perseverance. They are willing to rethink approaches and seek new ways of doing things in search of best practices. They also stay informed so that as opportunities arise, they are positioned to take advantage of them (Kouzes & Posner, 2007).

Inspiring a shared vision reflects the belief that leaders make a difference, that they are so passionate about their dreams for the future that they fire the imagination of others to share in that vision. Leaders who enable others to act seek to build strong collaborative efforts by getting people involved and building strong working groups of community citizens. They are both coaches and cheerleaders for the members of their community groups, always being mindful of the important contributions of each group member, and treating each person as a valuable member of the team. According to Kouzes and Posner (2007) leaders who model the way “establish principles concerning the way people (constituents, colleagues, and customers

alike) should be treated and the way goals should be pursued. They create standards of excellence and then set an example for others to follow. Because the prospect of complex change can overwhelm people and stifle action, they set interim goals so that people can achieve small wins as they work toward larger objectives. They unravel bureaucracy when it impedes action; they put up signposts when people are unsure of where to go or how to get there; and they create opportunities for victory” (Kouzes and Posner, 2007, p. 4). Leaders encourage the heart by keeping hope alive in their groups often in the face of disappointment and uncontrollable circumstances. To keep hope alive, leaders must recognize the contributions of individuals, celebrate accomplishments, and share the rewards of the groups’ efforts. Leaders make people feel heroic.

These five practices served as the major categories (themes) under which related actions and behaviors from the transcripts were grouped. This grouping allowed the researchers to determine whether the practices and behaviors previously identified for persons in business organizations were mirrored by leaders working in community groups. A partial list of the practices of the leaders interviewed in this study and the outcomes they had achieved grouped according to Kouzes and Posner’s (2007) framework is presented below (see Table 2). This list establishes that many of the interviewed leaders exhibited behaviors consistent with Kouzes and Posner’s framework.

Table 2

Key Practices and Community Outcomes Identified by Community Leaders Organized according to Kouzes and Posner Model, Twelve-County Area, North Carolina, 2005 (N=36)

Leadership Behaviors/Practices	Outcomes
Challenging the Process	
Training non-traditional leaders	Began to see themselves as leaders Recognized existing resources and developed new ones Recognized skills/developed new skills Broadened their view of "community"
Persistence	Dogged determination to succeed Acknowledged barriers and moved on
Staying informed	Facilitated better outcomes for community Became more proactive
Inspiring a Shared Vision	
Providing direction for group	Organized community groups
Assessing needs & sharing goals	Built Community Centers
Developing mission statements and action plans	Facilitated economic development for community Solved traffic issues Obtained grant money Identified challenges differently
Enabling Others to Act	
Implementing Action Plans	Provided greater breath of housing options Provided greater educational opportunities for children Fostered greater political involvement Fostered greater volunteerism and involvement Helped people get things done/built team concept
Modeling the Way	
Serving as mentors	Served on Town Council Provided impetus for development of park Mentored others to become active politically Helped people assess strengths Helped people through training Fostered networking Coached future leaders and set examples for others
Encouraging the Heart	
Recognizing contributions	Acknowledged importance of each group member Valued every group member's contributions Valued diversity Celebrated accomplishments Nurtured people Provided recognition

Results and Findings

Challenging the Process

For many leaders of community groups, challenging the status quo involved seeking leadership training for their group, as well as looking differently at the resources within the community, while looking both inside and outside their communities for resources. Leaders viewed leadership training as a resource. One leader explained that leadership training provided a turning point in his perceptions about himself and what his community could accomplish. He said, "It was in going through the training [community members] realized that they really did have something to offer and we really are leaders and these are some things that we can do to enhance our skills." He went on to say that as people from many communities got together for training they began to realize a sense of community. "Even though some of those folks knew each other or knew of each other they may not have interacted with each other the way they did while going through the training." He indicated that leaders began to realize the common issues that cut across communities and a new sense of community developed. He said that they realized the "resources that they had among themselves and the resources that they had in the community that they hadn't really thought much about" and that it pulled the community together and enhanced the leaders' leadership skills. The leadership training not only provided an opportunity to learn about leadership, but also gave community groups a chance to interact in ways in which they had not interacted previously resulting in a more cohesive community with members who were more aware of the resources in the community.

Another leader expressed the importance of finding appropriate resources for projects his community group had identified as their focus for the year. "After we know what we want to do, the next step is the resources. So [we] seek out the resources, not necessarily in the county, but outside the county too." One leader expressed this idea by saying, "What we found when we sat down and identified issues in the community and everybody gets on board, then they realized that we have resources right here and there are other resources that we need to find and [we] garnered those and went to

work." Leaders recognized that resources may not be available in the rural counties in which they live, but they sought to remedy this problem by seeking resources elsewhere. One leader expressed this idea by saying, "The actual dollars to get the project done and pretty much most of the things that have been done have been a matter of getting grants outside the community, actual funding outside of the community."

Leaders also expressed the need for dedication and perseverance as they seek to address the needs within their communities. One leader expressed this idea by saying, "When you're planning something you can't give up, you have to keep pushing it." Many leaders recognize that they have not always been successful in their efforts and there are barriers, but they learned from those experiences. An example of this is expressed by a leader:

[There are] obstacles within communities for instance like transportation and being in rural areas and having access to resources. Even doing a survey or interview in a rural area can be a barrier. Trying to find an area to hold group meetings or get people together can be a barrier in a rural area.

She went on to say that understanding what the barriers have been in the past makes it easier to plan a different approach. She said, "One thing is recognizing what you are up against and then learning from those past stumbles."

Leaders recognized the importance of staying informed and understanding what the resources are and reported the importance of staying connected to Cooperative Extension. One leader said, "I stay well informed about what is going on in my community and what may impact my community. The Extension Office is one resource." Another leader stressed the importance of staying informed about what is happening at the various government levels.

You have to know what's happening over in [name of state capital]. We went to the county commissioners in unison and got them to develop an effective [name of the committee]. So many people went through that the

commissioners had a meeting and people could not even get into the board meeting because of the number of people outside trying to get in demanding that something was done.

Staying informed allowed leaders to challenge the status quo and facilitate new approaches to community issues.

Inspiring a Shared Vision

Community leaders viewed shared vision as a critically important dimension of leadership. One leader who had recently organized a community group said, "Getting people to see that you're headed somewhere instead of staying in the same place [was instrumental in getting the group organized]." Another leader expressed the importance of a shared vision in this way: "A group or organization all has to have the same focus on what you're trying to work towards. And everybody has to be into it." One leader used an example to illustrate the importance of a shared vision for his community: "The community had a goal. They wanted their own building. ... They brought the land. You have to want to do something. It doesn't take a lot to do something."

Leaders indicated that their groups established a mission statement and then set goals based on their mission. One leader who shared his groups' perspective indicated, "We saw how important a mission statement is and you should follow that and that's what you represent. Also about the vision and the goals that you set and that everybody plays a part. It's not an 'I' or a 'you' thing; it's a 'we.'"

Leaders recognized that arriving at a shared vision was only one part of the process of moving their communities in the direction they wanted to go. Leaders developed formal plans of action. One leader explained this step. "Action plans had been written up and carried out. We set out goals and objectives of what we would do." Leaders indicated that arriving at a shared vision was a process starting with identification of the issues that particular group wanted to address. One leader expressed that idea by saying: "I would say that number one we realized that the only way you can get a problem solved is to identify the problem first."

Leaders reported that the vision for the community came about as a result of conducting a needs assessment. One leader commented:

Basically when we started the CV training and going through the curriculum, one of the focuses [we] understood was we're going to have a project, one central thing that we're going to work on out of this. That kind of came with brainstorming discussions to focus on what our needs are. It really came out of a needs assessment of what do we have in our community, what do we need in our community. So that was basically the basis for it, kind of a needs assessment, brainstorming, and then also talking to other people in the community outside of the Community Voices group.

Leaders reported that their groups arrive at a shared vision through consensus. One leader said: "You will find that there will be several ideas that will be thrown out, but then they will just calmly come to a consensus without even listing what should come first, second, or third." Another leader explained the consensus approach in this way:

Well sometimes in a meeting if you had one group that thought one way and one thought another they could eventually see both of them were probably more on the same track than they had thought and maybe there wasn't as big a difference as they...had thought. They could buy into each other's philosophy or ideas. By continuing to expound on what they thought and how they felt about it and then they saw that there just wasn't that big a difference. It was just a matter of interpretation or how they were saying it.

Some community leaders expressed their visions in very broad terms, such as a leader who said, "And the vision is that if we can continue to empower people, we can have some economic development for our community." Other leaders talked about the vision of some community groups in very specific ways, such as the following leader's examples:

[The] initial project was actually getting a stoplight in that community, but it's a township and it's very small. It's probably a thousand [people] in the city limits or town limits...and there had been several accidents and fatalities in that area and that was one of the need[s] and they got all of the resources and made it happen. I think there were a lot of emerging leaders, but [they] did not consider themselves leaders, but [they] were anxious to make some things happen. They really got involved in that community and formed organizations. They have expanded and are continuing to do so. They have written and received several grants.... They have taken the concession stand and renovated that and added a community center. They have organized a 4H club, after school program, meals on wheels for senior citizens. They are a site for the local library and they have various programs throughout the year for the young people and senior citizens. They have monthly activities in addition to their meals program and tutoring....

Other leaders reported that their community groups had operated with a shared vision for some time. "We always had a shared vision. It's not just one person having a vision and 'do as I say.' It's always a 'we.' It's not an 'I' piece. It's always we." Other leaders reported that having a shared vision was something new. One leader commented that "It's an attitudinal change when we hear the concept of shared vision...Community Voices really clues in on the fact that it has to be shared in order to work in a community."

Enabling Others to Act

Another dimension of leadership at the community level is enabling people to contribute their skills and abilities to community projects. Many leaders described various action plans implemented through community groups. Often the underlying focus was to help the community with issues, such as housing, education, or political action. One leader indicated that his community group "focused mostly on housing, some going on to homeownership. That was a good action plan." Other leaders had more politically oriented action plans. "[Our]

community focused more on a political engagement. [We] developed a plan where we would get someone on the town council etc., and that it would be a continuum." Other leaders thought the important aspect of the plan was group engagement. One leader's comment about his groups' action plan captures this idea: "Unless you can keep the group and the members fired, they will drift apart. So you must have something at all times that's working and something that everybody can be involved with."

Other action plans focused on volunteerism as a way to improve their communities. One leader said that her groups' goal was to get more parents involved in their children's activities. A community leader described the focus of her community group as,

I see [community group name] as having a concern and trying to help families make a commitment to education, to focus on youngsters and some of these [youngsters], went on to the Community College and a couple of them have gone to [a regional university] and another went to [a private college name]. These were families with children that were living in public housing and they will say that we really did a lot. We're still seeing the results [of our efforts].

Community leaders saw themselves in different roles. One leader saw her role as someone who helped others identify what contribution they want to make to the community. She expressed her role as:

I do a lot of reflective listening and extracting information and as I hear them say [what they want to do]. I help lift out that goal sometimes for participants who may or may not know what they want to work on. I listen for their passion. I listen to hear what it is that they want to do and lift up something that is doable short term [to get them involved].

Other leaders are primarily facilitators. One said, "My role is getting people together and helping them realize that they can get some things done and that they can be a leader."

Another leader saw her role as “number one is getting more people to be involved.” Many of the community groups had gone through leadership training and referred to the training as they talked about the dynamics of their specific community group. One leader of a long standing community group said “Leaders see themselves as part of the team and not outside of the team with all the answers; seeing the group having more [of a] shared vision.” One leader witnessed the development of a team and some of the activities of that group.

In the training sessions consensus was reached... by the participants as to their commitment to the training and with that consensus and commitment I could see more of the participants week by week becoming a part of a group that was less self-appointed or autocratic with leadership being from within the group or the communicating within the group....Some of the participants never had attended commissioners meeting[s] or a town board meeting, some of them began to do that.

Leaders were mindful of treating team members well and encouraging them to move forward with their community work. One leader said, “Everybody in the group must feel that they are important and they are contributing something.” Another leader expressed it this way: “There’s a certain amount of loyalty that a person develops [for the group].” Another leader said, “You got a few people that will work on anything you ask them to do. Let them go, let them do.” Yet another leader expressed the idea this way: “So you need people that are willing to work, willing to meet people, love people, regardless of what kind of attitude they get from people.” Many leaders expressed the concept of relationships of mutual trust and respect among the members.

Modeling the Way

Modeling the way is reflected in the behaviors of community leaders. To illustrate the importance of modeling behavior to develop future leaders, one leader used the following example of a man who had served on the town council:

I think he has been very influential in influencing other younger people....that he networks with who have become active politically and this is in a very small community, but they have run for town council and have been elected and I think that is a spin-off of his influence. I kind of suspect that the gentleman there, he and his wife that were participating in the Community Voices training, influences the community to attend the meetings and influences the younger people to become more active politically.

This leader believed that the elderly gentleman had high standards and that people mirrored his standards when they became involved in the work of the community.

One leader who has gone on to coach and mentor other leaders believes that one important aspect of community leadership is relationship building. She explains this as follows:

Building that relationship and understanding how you meet leaders where they are at their own field level and help them to really assess what their strengths are. What are their skills before one decides to help them with their areas of challenges or training needs and helping them to see where they are. I think that process helps them when they go back into their communities to say, ‘What are the strengths in my community?’ and then ‘What are the needs in my community starting from a strength-based assessment?’ I think that coaching leaders who then can go back and coach other parents and coach other leaders has been a great revelation in this program....Money may not be available, but pulling people together and saying ‘how can we solve our problem?’ I’ve seen a great deal of ... people taking ownership in their own communities. I think one of [the] greatest changes that I’ve seen is an understanding of how important coaching is in building relationships with leaders before you do anything.

Other leaders stressed the importance of networking. Leaders must know people in other leadership positions who can implement change. One person described a leader in her community as “an advocate for her community [who] has developed relationships with the town council and found out who her senator was in her community...She has now developed a relationship where she follows his agenda.” Other leaders thought that modeling included being forthright about their leadership views. One leader said: “People know what I think about leadership because I tell them. They know I’m going to do what I say I’ll do. You got to set the example. You can’t expect people to follow if they got no idea where you’re going.”

Leaders recognize the value of interaction with other groups. Throughout the interviews and focus group sessions, leaders talked about networking. Because many of the leaders had gone through leadership training, they felt that the networking that resulted during the training and the relationships formed to enable collaboration after the training enhanced their community work. A leader said: “Because people came from [one end of the county to another] for the training, later on then that meant that those communities networked and were able to come together and bring good ideas together.” The networking during leadership training led to subsequent discussions as illustrated by this leader’s comment: “[We] saw where things would be improved in the community and [we] talked within the group and outside the group.” As leaders mature in their community work, they may move to state leadership positions, resulting in a network that began locally now having a broader reach. One leader said: “Not only networking in the community, now they get to work together at another level, the state level.”

Encouraging the Heart

Encouraging the heart is the final dimension of leadership behaviors identified by Kouzes and Posner (2007). Leaders acknowledged the importance of recognizing people who help accomplish community goals. One leader’s comments express this idea.

I let people know how important they are to the group. It’s just as important that someone makes sure that the facility is available, open and set-up and

accommodating as it is to have someone to get up in front of the group. I don’t care how good a person you are in talking if you don’t have someplace to take people to talk to them you still don’t have anything. It’s just as important to have somebody to sit at home and call around and make sure people come out because if you don’t have anybody to talk to, then how effective are you going to be? Everybody has a role.

Leaders acknowledged the importance of annual ceremonies to recognize the good work of people in the community. “The one thing that they did was that they had reunions every year and brought people together. You feel a connection.” One leader thought that bringing people together was as important as anything that she did because it made people feel good about their work in the community.

Bringing people out to participate and to be a part of building stronger communities and making things better and improving themselves encourages people. [People need to know] that we are all important, that we are all needed to make it work and people buy into it.

The leaders who were interviewed for this study thought that praising people for a job well done and routinely expressing appreciation and support to group members were important roles for leaders. One leader said it best when she said, “One of my most important jobs is to continue to nurture people to be leaders. Nurturing includes appreciation, recognition, and some at-a-boys along the way.”

Conclusions and Implications

Although Kouzes and Posner’s (2007) research focused on leadership in organizations, the content analyses of the focus groups and interview data from this study revealed a relationship between leadership practices and behaviors of the community leaders and the five themes developed by Kouzes and Posner (see Table 2). The themes that seem more closely aligned with the behaviors and practices of community leaders were Inspiring a Shared Vision, Enabling Others to Act, Modeling the Way, and Encouraging the Heart. The leaders

were less likely to talk about ways in which they “Challenged the Process,” but for each of the five practices, community leaders provided strong evidence that they engage in these behaviors as they work in their respective communities. Based on this study, one can infer that an assessment tool that measures a leadership program participant’s understanding and acceptance of these behaviors would be an effective tool for measuring the impact of a leadership development program.

These findings provide a first step in the development of such an assessment instrument. The findings suggest that the Kouzes and Posner’s instrument, the Leadership Practices Inventory (LPI) can be modified to become an assessment tool for use with community group leaders. Such an instrument would focus on the behaviors or actions of leaders in community settings and would enable program facilitators to measure the impact of their programs on the leaders they serve. The researchers have obtained permission from Kouzes and Posner to modify the LPI for use with community leaders and have undertaken to develop such an instrument. The modified instrument has been used and tested, but additional testing is required to assure that the modified instrument is psychometrically sound.

Recommendations

Additional studies of differences between community leadership in other regions and other countries would be helpful. Kouzes and Posner’s (1988, 1993, & 2007) Leadership Practices Inventory (LPI) has been used in many countries and translated into several languages. A modified version of the LPI specifically reflecting behaviors/actions of community leaders could help Extension personnel and other leadership program developers in the US and other countries measure the impact of their programs as well as the development of leaders going through their programs over time. Additionally, specific factors that are unique to certain areas, such as geographical factors or proximity to large urban areas could be evaluated. Research is needed on the unique leadership needs for rural citizens that can be the foundation for program development through Extension or other community-focused groups.

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Factors Affecting the Global Mindedness of Extension Agents: Implications for Building Global Awareness of Extension Agents

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Abstract

Because of the profound effect that globalization has on our society the Cooperative Extension Service of the United States has been challenged to develop programs that help people deal with the impacts of globalization. The purpose of this study was to determine the level of global mindedness among Extension agents in North Carolina and to determine whether their global mindedness varies with their demographic characteristics and international travel experience. This study found that the typical Extension agent from North Carolina has a moderate to high level of global mindedness. This study found that the level of Extension agents' global mindedness varies with their age, levels of education and gender. This study revealed that Extension agents with international experience were more globally minded compared to the Extension agents without any international experience. This study found a weak positive relationship between the length of time Extension agents have spent abroad and their global mindedness. This study is useful to determine the global mindedness of Extension agents and identify the factors associating their global mindedness.

Keywords: Extension globalization, international experience, global mindedness, professional development

Introduction

Globalization is a force that continues to unify the people of the world and make us more dependent on each other. As this trend continues, Extension systems around the world must be prepared to adapt for this change. We are all affected by what is now termed the global economy or globalization. "Globalization is a force which individuals, organizations, businesses, and governments must meet" (Lundy, Place, Irani & Telg, 2005, p. 49). Advances in communication and transportation have created this global marketplace from which we have all benefited (Betancourt, 2000). The global interdependence of international trade has been widely recognized. (Selby, Peters, Sammons, Branson, & Balschweid, 2005). Globalization is a complex idea that means different things to different people and that the term is often used but not well defined or understood (Etling, 2001). According to Etling (2001) a common thread in the definition of globalization is that it involves "rapid change". A report by the National Association of State Universities and Land Grant Colleges (NASULGC) says that "globalization of the financial services, manufacturing and agricultural sector is having a profound influence on all facets of American society" (2002, p. 3).

Increasingly, countries are becoming interconnected with the rest of the world. The future of any country rests on its ability to prepare and compete in a world which is moving rapidly toward economic, political and social interdependence. Farmers throughout the world are affected by globalization just as everyone else is. Traditional customers of Cooperative Extension such as families, rural communities and agriculture are no exception. In the US, "one out of six manufacturing jobs depends directly on foreign trade, four out of five new manufacturing jobs result from foreign commerce, and one out of every three acres of farm land produces products for export (Stitsworth, 1988, para. 2)." Developing nations are becoming the potential markets for the US agricultural products (Mricle, 1991). Foreign trade is becoming an important part of American agriculture and Extension has a significant role to play in the globalization process of American agriculture (Youmans, 2005). Some Cooperative Extension services in the US have realized this

need for the development of strong global awareness among the Extension clients and staff (Stitsworth, 1988). After conducting a staff development need assessment study with Extension educators in Indiana, Selby et al. (2005) emphasized the need for Extension leaders to be accountable for globalizing Extension. The need for globalization of national agricultural extension systems is becoming obvious in other parts of the world (Qamar, 2002). Ludwig defined the globalization of Extension as the "incorporation of global content into Extension efforts so that clientele develop an understanding of global interdependencies as they relate to the issue areas within the Extension mission" (2002a, para. 1). After conducting a study with Cooperative Extension directors in the U.S, Ludwig (2002a) concluded that the globalization of Extension is moving forward. This trend can be noticed in other parts of the world.

As the global and local issues are becoming more inter connected, Extension education programs need to be delivered within a culturally sensitive framework attuned to those changes (Ludwig, 2002a). People must be prepared to live with understanding of the global changes around them. Extension has a responsibility to prepare clientele for this task (Ludwig, 1996). Many Cooperative Extension Services have started to integrate the international arena into their staff development programs as a measure to serve the needs of their clientele (Richardson & Woods, 1991).

Farmers, the primary customer group of Extension, are especially affected by globalization. According to Patton (1984) an international dimension is a basic part of an effective Extension program because the economic prosperity of agriculture in any country is directly linked to the world economy. Not only are farmers in North Carolina affected by globalization but other clients are affected as well. Extension can play a part in helping these and other clients in North Carolina gain increased global understanding and prepare for both the ups and downs in our society. For this purpose, North Carolina Cooperative Extension made a major commitment to professional development in the international domain (Richardson & Woods, 1991). Unless Extension strengthens the international dimensions of its programs, it will not be able to fully serve the

changing needs of its local clientele. North Carolina and other state Extension Services have been challenged to develop programs to educate our citizens about the effects of the global society. According to Ludwig and McGirr (2003), the Extension Committee on Organization and Policy (ECOP) identified an international mission for Extension as early as 1984. Literature supports the notion that because of globalization, international programs are an essential part of the Cooperative Extension mission and that Extension has an obligation to its clients and stakeholders to help them develop global skills that will prepare them to operate in a global society (Acker & Scanes, 1998; Bates, 2006; Gallagher 2002; Ludwig, 1993, 1998, 1999, 2002b; Lundy, Place, Irani, & Telg, 2005). It is stated in "Global Engagement" that "Multiculturally adept Extension personnel can help serve our increasingly diverse communities and respond to the needs of domestic firms seeking business overseas" (USDA Cooperative State Research Education, and Extension Service, n.d., Overview section).

Through the use of nonformal educational activities Extension has the ability to help clients understand how the globalization will affect them. Once clients understand these effects, they are better able to deal with the problems and opportunities created by the global society. If Extension is going to continue to incorporate international and global information and training into Extension programs, Extension personnel need to gain international understanding, knowledge and skills. One way that Extension personnel can gain this knowledge and skill is through international experiences or training. By working and traveling in another country, Extension agents can gain a global perspective, new technical knowledge or new insight into other cultures. Study abroad programs change a person forever (Tritz & Martin, 1997). A country, its people and its culture all have an effect on people who study abroad. Study abroad changes perceptions, challenges thoughts and garners a more worldly perspective. A review of the literature indicates that the Extension agents who have involved in international programs appreciated their positive experience (Crago, 1998; Lev, 2001; Place, 1998, Place, Vergot, & Dragon, 2005; Richardson & Woods, 1991; Vergot, Place, & Dragon, 2006).

The basic question asked by this study is, to what extent do international experiences contribute to the employee's global mindedness? The study measured the impact of international experience on Extension agent's global mindedness using the Global Mindedness Scale developed by Jane Hett in 1993. "Global Mindedness is a world view in which one sees oneself as connected to the world community and feels a sense of responsibility for its members. This commitment is reflected in attitudes, beliefs and behaviors" (Hett 1993, p. 143). The dimensions of global mindedness include *Responsibility* which is a deep personal concern for people in all parts of the world; *Cultural Pluralism* which is an appreciation of the diversity of all the worlds cultures; *Efficacy* or a belief that an individuals' actions can make a difference; *Global Centrism* which is thinking in terms of what is good for the whole world; and *Interconnectedness* which is an awareness and appreciation of the inter relatedness of people around the world. Global mindedness can be measured using the Global Mindedness Scale. Global Mindedness Scale scores differ significantly based on gender, academic experience, political views, participation in international activities and international experience (Hett, 1993).

Literature supports the notion that one's global mindedness increases with his or her international experience (Bates, 1997; Gillian, 1995; Hett, 1993; Mahon & Crushner, 2002). In addition, some researchers reported that the longer the time a person spent abroad the higher that person scored on the Global Mindedness Scale (Gillian, 1995; Hett, 1993). This study sought to determine the factors affecting the global mindedness of Extension agents as measured by the Global Mindedness Scale.

Purpose and Objectives

The purpose of this study was to determine the level of global mindedness among Extension agents in North Carolina Cooperative Extension and to identify the factors affecting their global mindedness. The study sought to fulfill the following objectives:

1. Determine the level of global mindedness of Extension agents employed by the North Carolina Cooperative Extension Service.
2. Determine if the level of global mindedness varies with Extension agents' demographic characteristics.
3. Determine if the level of global mindedness of Extension agents varies with the type of their international experience.

Methods and Procedure

The research design of the study was a correlation study conducted with the Extension agents in the North Carolina Cooperative Extension. The scale used to measure the dependent variable of global mindedness was a 5-point Likert-type Global Mindedness Scale developed by Hett in 1993. Hett's global mindedness scale has 30 items related to someone's perception about globalization and its impacts. Of the items, 21 were positively stated and nine were negatively stated. The 5-point Likert scale ranged from 1 = *Strongly Disagree* to 5 = *Strongly Agree*. The responses to negatively stated items were reversed before adding the scores to get the overall value for the 'Global Mindedness' on this scale. The 'global mindedness' can range from 30 being very poor global mindedness to 150 being very rich global mindedness on this scale. In addition to the global mindedness scale, the survey instrument also collected demographic data and international experience of respondents. The content validity of the instrument was established by having the instrument reviewed by a panel of experts. Additionally, the instrument was pilot tested with a sample of Extension agents. The reliability alpha of the instrument was found to be .92.

The data were collected using an online survey. The survey was emailed to the 495 Extension agents on September 7, 2007 and two follow up emails were sent. The survey received 318 responses comprising a 64% return rate. Of

the 318 surveys returned, 292 were useable. Nonresponse error was controlled by using a comparison of early and late respondents (Lindner, Murphy, & Briers, 2001). An independent sample t-test was used to determine if early respondents and late respondents differed significantly on Global Mindedness Scale scores. No significant differences were found between the early respondents and late respondents on Global Mindedness Scale scores indicating that the findings can be generalized for the study population. Statistical analysis was performed using the SPSS program. Correlation and independent sample t-test analysis were conducted to achieve research objectives.

Results

Of the respondents, 55% were female and 45% were male. A majority of the respondents were white (88%) and were in the 40-59 years old age category (62%). Sixty-four percent of the Extension agents had Masters Degrees while 6% had Doctoral Degrees. Only 26% of the Extension agents were Bachelors Degree holders.

A large portion (69.5%) of Extension agents in North Carolina have traveled outside of the United States or Canada at some point indicating that they have some level of international experience. Extension agents having no international experience made up 30.5% of the population (Table 1). The highest response for length of time traveled abroad was one to two weeks (24.5%). The portion of the population that has less than one month of international experience was 52.5%. Extension agents that have two or more months of international experience make up 16.7% of the respondents. Extension agents that have more than five months of international experience make up 9.7% of the respondents while 5.7% have more than one year of international experience (Table 2).

Table 1
International Experience of Respondents

Any International Experience	<i>n</i>	%
Yes	221	69.5
No	97	30.5

Table 2
Length of International Experience of Respondents

Time Spent Outside of US or Canada	<i>n</i>	%
None	97	30.5
Less than 1 week	33	10.4
1 to 2 weeks	78	24.5
3 weeks to 1 month	57	17.9
2 to 4 months	23	7.2
5 to 7 months	6	1.9
8 months to 1 year	6	1.9
More than 1 year	18	5.7

The Global Mindedness Scale scores for Extension agents in this study ranged from 70 to 148 (the higher the number on the scale the higher the level of global mindedness) with the mean of 108.02. The Global Mindedness Scale scores of the respondents were divided into quartiles, 1st quartile (30 to 60), 2nd quartile (61

to 90), 3rd quartile (91 to 120) and 4th quartile (121 to 150). The majority (74.3%) of the respondents scored in the 3rd quartile and 16.1% of participants scored in the 4th quartile. Only 9.6% of the respondents scored in the 2nd quartile and no respondents scored in the 1st quartile (Table 3).

Table 3
Scores on the Global Mindedness Scale

Range of Global Mindedness Scale	%
4 th Quartile (121 to 150)	16.1
3 rd Quartile (91 to 120)	74.3
2 nd Quartile (61 to 90)	9.6
1 st Quartile (30 to 60)	0.0

The study compared the level of global mindedness of the respondents for various personal and professional characteristics. Those characteristics included gender, age, level of education and the international experience.

Relationships between the Global Mindedness and Other Variables (Demographic and International Experience Variables)

A correlation analysis was conducted to ascertain the relationship between the global

mindedness and other variables of interest. Pearson Correlation Coefficient (*r*) was used to assess the relationships between global mindedness and variables recorded on a scale while point biserial coefficient (*r_{pb}*) was used to assess the relationships between global mindedness and dichotomous variables such as gender. Correlation coefficients between global mindedness and other variables of interest are summarized in Table 4.

Table 4
Correlation between Global Mindedness and Other Variables (N = 292)

Variable	Correlation Coefficient
Levels of education	$r = .12^*$
Age	$r = .19^{**}$
Gender (Male = 1, Female = 2)	$r_{pb} = .26^{**}$
Whether having any international experience outside the U.S. or Canada (No = 1, Yes = 2)	$r_{pb} = .22^{**}$
Whether the experience was an international engagement (such as study abroad, Peace Corps or missionary) or just a tourist visit (No = 1, Yes = 2)	$r_{pb} = .07$
Length of international experience outside the U.S. or Canada	$r = .23^{**}$

** $p < .01$

* $p < .05$

Demographic variables and global mindedness. Respondents' global mindedness score was significantly associated with their gender, age and levels of education as summarized in Table 4. There was a positive association between age and global mindedness score. According to both Davis (1971) and Hopkins (2002) this correlation value is in the low association range. The association between

age and global mindedness was positive but low. There was a significant low association between gender and respondents' global mindedness score. Independent sample *t*-test was conducted to compare the means of respondents' global mindedness scale score for males and females. It was found that global mindedness of female respondents was significantly higher than that of male respondents as summarized in Table 5.

Table 5
Comparison of the Level of Global Mindedness Scores for Gender (N=285)

Variable	M		t	p
	Male	Female		
Global Mindedness Score	104.2	111.3	4.51	.001**

** $p < .01$

This study found that the level of Extension agents' global mindedness varies with their gender, age and levels of education. Hett (1993) found that global mindedness varied with gender but not with age. Gillian (1995) found that global mindedness varied with both gender and age.

International experience and global mindedness. There was a significant low association ($r_{pb} = .22$, $p < .01$) between participants' global mindedness score and whether they had any international experience as summarized in Table 4. This study sought to determine whether the global mindedness of the respondents varies with different types of international engagement programs. These international engagement programs included Extension sponsored study abroad programs, other international exchange programs (e.g., Rotary, Farmer to Farmer), student study abroad

programs, Peace Corps, and international missionary work. Correlation analysis revealed that whether the international experience was a tourist visit or an international engagement such as study abroad did not have a significant association with their global mindedness score. The length of time spent outside of the U.S. or Canada had a significant low association with respondents' global mindedness score. Similar to this finding, previous research has shown that individuals that participated in lengthier international programs or have spent more time abroad scored higher on the Global Mindedness Scale (Gillian, 1995; Hett, 1993). Independent sample *t*-test analysis indicates that the respondents with an international experience had a significantly higher level of global mindedness score compared to the respondents without any international experience as summarized in Table 6.

Table 6
Comparison of the Level of Global Mindedness Scores for Respondents With and Without Any International Experience (N=285)

Variable	<i>M</i>		<i>t</i>	<i>p</i>
	With International Experience	Without Any International Experience		
Global Mindedness Score	110.0	103.6	3.74	.001**

** $p < .01$

Conclusions and Recommendations

Extension agents in North Carolina tend to be globally minded. This study found that the average Global Mindedness Scale score for extension agents in North Carolina was 108 out of a possible 150 points. This indicates that the typical extension agent from North Carolina has a moderate to high level of global mindedness. This means that extension agents in North Carolina are concerned about people all over the world, have an appreciation for diversity, they have a belief that individual actions can make a difference, feel a sense of responsibility to others, think in terms of what is good for the community and feel connected to others. However, it was found that global mindedness did vary according to certain demographic and international travel variables. There is room for growth.

Because this study found that extension agents benefit from international experience and because these findings are supported by previous research (Crago, 1998; Lev, 2001; Place, 1998; Place, Vergot & Dragon, 2005; Richard & Woods, 1991) the Cooperative Extension Service should put additional emphasis on international professional development for agents. It should be a goal of Cooperative Extension that more extension agents gain significant international experience. This would include international experience where the individual is immersed in another culture and gains more cultural awareness and understanding.

Exchange type programs that bring persons from other countries to local extension offices, as well as send North Carolina agents abroad, would have a double benefit. Longer programs, more than two weeks, would have a greater impact. An alternative to longer programs would be to encourage agents to participate in multiple programs both inside and

outside of the organization in order to gain additional international experience.

The North Carolina Cooperative Extension Service should target those agents that would benefit most from international experience for participation in international programs. This research shows that male agents that have no international experience and graduate level education are less globally minded. The organization should encourage these agents to participate in international programs and give them preference in the selection process.

Extension agents in North Carolina are being challenged to develop international skills and cultural awareness and understanding. By developing these skills agents are better able to help traditional clients deal with globalization and the realities of the global market place. These skills are also beneficial to agents as they work with new culturally diverse audiences at home. Participation in an international professional development program is an excellent way for extension agents to gain these important international skills and cultural awareness and understanding. While this research was done in North Carolina, it is likely that similar recommendations could be made in other states in the United States.

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