



## **2009 AIAEE CONFERENCE**

*25 Years of Strengthening International Agricultural and Extension Education*

### **SCHEDULED PAPER PRESENTATION ABSTRACTS**

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*The list of abstracts is sorted in alphabetical order by primary author.*  
Requests for complete papers may be obtained from the primary author's contact information

## **Knowledge Gaps and Training needs of Afghanistan's Agricultural Extension Agents**

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### **Abstract**

*The primary focus of this study is to determine the knowledge gaps and training needs of Agricultural Extension agents from the Eastern region of Afghanistan. Survey responses from all Extension Agents stationed in Laghman, Kunar, Nangarhar and Nuristan provinces are reported in this paper. Since the study targeted the entire population of Extension Agents (N=104) in all Afghanistan's four eastern provinces, no sampling procedures were used. Furthermore the results may be generalizable only to the study population. A seven part questionnaire consisting of 4-point Likert scales was used to solicit response from the extension agents. Cronbach's alpha coefficients for 92 cases and 147 items produced a reliability statistics of 0.92 suggesting that the study scales have a relatively high internal consistency. Descriptive statistics were used to analyze the data. All the survey respondents were married males between the ages of 22 and 60years. Respondents consider themselves specialists in six major areas: Vegetable production (26%), Plant Protection (16%), Farm management (10), Fruit production (6%) and Agronomy (5%). Majority of respondents (> 60%) specialize in production oriented agriculture with less than 35% specializing in Market Extension. While most respondents claim to have high knowledge of Market Extension and crop production methods, an actual knowledge tests administered to the respondents during a 30day training section covering extension delivery processes and vegetable and fruit production techniques revealed a rather low level of knowledge of these areas. Self-perceived knowledge of Farm Management and Financial techniques was generally low.*

**Keywords:** Agricultural Extension, Marketing Extension, Extension Agent, Knowledge, Perception

## **Female Students' Participation in the University Mid-Career Agricultural Extension Training Programme in West Africa: Constraints and Challenges.**

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### **Abstract**

*Many studies in Africa indicate that the poor achievement of the continent's agricultural targets in terms of efficiency, sustainability and equity is largely due to the predominant practice of directing training and resources to men only. The SAFE training programme set up in Universities for mid career agricultural extension staff of the ministry of Agriculture has only recorded 21% female participation so far. Some of the issues highlighted in this study include: the need for policy shift in favour of women to enable research and extension to focus more on women; low educational level of most women; inability of women to rise up to decision making positions; need for role models within the agricultural extension service system; mid-career women in agricultural extension service need to improve their skills and competence; and mid-career women need education and training to reduce the influence of culture and religion on their attitudes. Analysis of the major challenges to women participation in the mid career training programme of the three universities also indicate the following: limited scholarship opportunities that target professional women; family problems; communities' low perception of women's talent and potential; limited access to information on opportunities for further education; lack of implementation of the various Governments' Affirmative Action; the perception of agriculture as a domain of men; and socio-cultural/religious barriers. Among the recommendations for improved women participation in the mid-career agricultural extension training programme were: putting in place admission policies that ensure at least 25 % of set places for female extension agents; instituting a scholarship scheme for female mid-career students; setting up of policies to employ more female agricultural extension worker as well put up other types of mid career programme more suited to professionals like the sandwich and the distance learning programmes.*

**Key Words:** Mid-career professionals; female students; participation; challenges; Mid career training programme

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**Issues, Trends and Constraints in Integrating Technology into K-12 Education: A comparative Analysis of Japan, Trinidad and United States**

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**Abstract**

*The paper analyzes trends, constraints and issues in integrating ICT in selected schools in Japan and United State and in on-going technology integration program in Trinidad. Data on Japan and U.S. was collected through the Japanese Fulbright Memorial Fund U.S. Japan teacher exchange program using questionnaire survey and a combination of participant and non-participant observation. Trinidad data was collected using an open-ended qualitative survey of teachers using a SWOT analysis framework. Data analysis included SPSS program, anecdotal reports and content analysis of qualitative data. Major findings included very positive perceptions among teachers in all three countries concerning the potential transformative impact of ICT in the teaching-learning process. Japanese schools evidence a surprisingly low level of technology integration compared to their U.S. counterpart. However, ICT integration in the U.S. has had less than transformative impact as teachers continue to infuse low level ICT programs to teach traditional curriculum. Barriers to technology integration included poor training, lack of skill, rigid administrative structure (especially in Japan) and poor technical support. Paper concludes by noting that technology operates within a social-institutional milieu, and until effort to integrate ICT in the educational systems takes full cognizance of this technology-social institutional interaction, ICT will continue to fail to achieve its maximum transformative potential.*

Keywords: ICT; Technology integration; International Comparison; SWOT Analysis

## **Revisiting Storytelling in Ghana: A Possible Link to Leadership Development Through the Agricultural Extension Service**

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### **Abstract**

*The purpose of this study was to explore the current status of storytelling in Ghana from the perspective of agricultural extension directors. Specifically, this study determined barriers to storytelling experienced by families, identified skills and values learned through storytelling, and identified uses of storytelling within the Ghana agricultural extension service. Ghana and other countries in sub-Saharan Africa (SSA) face a number of development challenges. Formulating solutions to these development challenges will require effective leadership. Based on culture-fit theory and a conceptual model that recognizes storytelling as a connection point for leadership development in SSA, it is important to gain an understanding of the current status of storytelling. This exploratory study was an attempt to fill this gap in the literature.*

*This study concluded that storytelling in families has challenges centered around leisure time priorities, image of storytelling, and technology. It is implied that the barriers to storytelling might be an indication that storytelling is becoming a dying tradition in the SSA culture. However, this study found that storytelling has a number of merits. Ghana agricultural extension directors reported that they learned skills and values such as problem-solving, honesty, responsibility, listening, and respect by their personal involvement in storytelling. It was further concluded that storytelling is used within the Ghana agricultural extension service as a communication technique, teaching method, and bringing about a common understanding within the organization.*

Keywords: Ghana, leadership, organization, storytelling, sub-Saharan Africa

## Assessment of Technical Efficiency of Farmer Teachers in the Uptake and Dissemination of Push-pull Technology in Western Kenya

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### Abstract

*Use of farmers as extension agents to disseminate new technologies to others is increasingly being adapted in smallholder farming systems constrained by low adoption of technologies. This paper examined technical efficiency of farmer teachers in the uptake and dissemination of a 'push-pull' technology (PPT) for control of Striga weed and stemborers in Western Kenya. A total sample of 112 farmer teachers (FTs) and 560 follower farmers (FFs) who had adopted the PPT were randomly selected and interviewed between July and August 2007. The farm production constraints significantly reduced with an overall 53% margin following PPT uptake. Overall, there were considerable benefits from training resulting in significant differences in understanding and applying of PPT. The FFE strategy had a significant multiplier effect in increasing PPT uptake. The average efficiency by FTs was 78% while FFs had 71% suggesting that the interviewed farmers operated below the frontier output levels. The efficiency differences are significantly explained by farmer teachers' interactions with neighbouring farmers, farmers' memberships in local groups, type of farmer, farmer's age, marital status and farmer's level of education. Improving capacity of farmers to operate as extension agents can be achieved by providing incentives and training, increasing field demonstrations, providing Desmodium seed and credit for other needed inputs to accelerate PPT transfer.*

Keywords: Push-pull technology; Farmer teachers; Follower farmers; Farmer-to-farmer extension; Technical efficiency.

## **The Comparative Role of Intervening Variables in Understanding Farmers' Adoption Behavior**

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### **Abstract**

*The paper compares the influence of intervening variables and the characteristics of the farmer and the farm (independent variables) on the adoption behavior of farmers for recommended maize agronomic practices. The purpose was to indentify the most important determinants associated with behavior change. A total of 107 farmers out of a population of 214 were randomly selected from two adjoining districts of South Africa and Lesotho. Chi-square and correlations and regression analyses were used to determine the relationship between the independent (characteristics of the farmer and farm) and intervening variables.*

*Clear differences occur between the independent variables (which included age, gender, education, farm size and total area under maize cultivation) in regard to their influence on adoption behavior, but these influences also vary significantly between the practices. It was also found that an independent variable can have a big influence in the adoption of one of the recommended practices but not on the others. In general, their influence is limited, and together their total contribution in explaining the variance in adoption ( $R^2$ ) varied between about 20 to 40 percent. The influence of the intervening variables, which are primarily need, perception and knowledge related, was much more consistent and much bigger, measured both as correlations and regressions. The total contribution ( $R^2$ ) of intervening variables varied between 50 and over 70 percent, which clearly supports the research hypothesis, namely that their prediction and explanation value in terms of behavior is much bigger than that of independent personal and environmental factors.*

**Key Words:** Adoption, Intervening variables, Behavior change, Decision-making, Innovations

## Understanding Hispanic Farmers and Their Educational Needs: A Case of Southwestern Michigan

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### Abstract

*The growth of the Hispanic population in farming and food systems presents new opportunities as well as challenges for agricultural service agencies. This study was conducted in four counties of southwestern Michigan to serve as baseline information when assisting small, minority and disadvantaged farmers. This paper is based on survey data collected through personal interviews with 82 farmers. Findings show that Hispanic farmers manage mainly blueberry farms using family labor and rely on past experience to operate their farms. Hispanic farmers are not a homogeneous group and one extension or education model may not be useful for all the Hispanic farmers. Educational programs focusing on farm management, state and federal regulations, and methods to access help from farm services agencies during the first years of farm ownership are needed. The methods used to disseminate agricultural information and education must be sensitive to Hispanic farmers' characteristics, and could include multimedia such as DVDs, CDs, or MP3 audio.*

Key Words: Hispanic farmers, Needs assessments

**Agro-ecotourism in Costa Rica: A Participatory Rural Appraisal Case Study****Jessica M. Bagdonis**

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**Abstract**

*In Costa Rica, agro-ecotourism, a merger of ecotourism and agrotourism, is gaining importance as a viable economic development activity. In this paper, we consider the theoretical frameworks that link agriculture, ecology and tourism. Then we discuss the methods through which we conducted a modified participatory rural appraisal (PRA) of an agro-ecotourist association in the Limon region of Costa Rica. We conclude our paper by making recommendations for further development of the agro-ecotourism association in Costa Rica.*

Keywords: Agrotourism, Participatory Rural Appraisal, Costa Rica, Farmers Networks

## **A Model for Developing a Well-Prepared Agricultural Workforce in Egypt**

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### **Abstract**

*Agriculture is an important sector of the economy of Egypt. While a system of Agricultural Technical Schools (ATS) is in place in Upper Egypt, there has not been put in place an effort to help ensure that students in those programs are adequately prepared to enter the workforce and be productive. The model that was developed begins with the needs of agricultural business and industry and the perceived preparedness of ATS graduates to enter the workforce. The differences between need and preparedness generate a skill-gap that serves as the basis for curriculum design. Curricular change includes skill development, internships, decision-making and leadership, with input from the external advisory council. Coupled with curricular improvement, the model allows for faculty development to assist ATS instructors in active learning, competency assessment, leadership activities and internship supervision. A train-the-trainer model utilizes agriculture faculty members from Egyptian universities to provide on-going instruction.*

**Key Words:** model development, secondary schools, Egypt, agricultural education, train-the-trainer

## **Promoting Youth Development in a Territorial Context: The Case of the Yeguaré Region, Honduras**

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### **Abstract**

*The purpose of this research was to determine the impacts of the implementation of a territorial model of development in the Yeguaré Region of Honduras. The research question looked to determine the impact of the territorial approach on the youth development of the region. The purpose was achieved through the following research question: (a) What has been the impact of the youth participation, and vocational education for the youth in the Yeguaré Region? This study used mix methods. Quantitative and qualitative methods permitted to gather and analyze different types of data of the project. The quantitative analysis included descriptive and inferential statistics. The qualitative analysis elaborated and expanded the quantitative analysis.*

*Three themes related to the impact of the territorial model of development in the Yeguaré Region emerged during the research. Youth leadership and entrepreneurship, youth expectations and future plans, and occupational status and welfare of the families were the emergent themes for youth development.*

*The contribution of this study to the field of sustainable development was to expand the knowledge about the impacts of a territorial model of development in rural Honduras. Also, policymakers and project stakeholders may use this information to plan, design and implement effective development programs, and may decrease project expenditures, increase income, and benefit the communities.*

**Keywords:** Youth development, Honduras, territorial approach, international development

## Using Mobile Technology in an Extension Leadership Development Program

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### **Abstract**

*Mobile learning is changing the way education is viewed worldwide. This new style of learning, which has already been applied by a number of corporations, may offer similar benefits to adult education programs offered through Extension. Mobile learning may offer Extension a way to extend their educational reach to adults outside traditional classrooms or lecture halls. One statewide Extension program explored mobile learning within an agricultural leadership program. The program is geared toward opinion leaders in agricultural and natural resources industries in the state, and focuses on 11 face-to-face seminars that occur within the state, around the country, and culminates in an 18-day international seminar. Mobile learning was utilized in this program to increase the participants' educational experiences between these seminars, as well as offer continuing education to those who had graduated from the program. The purpose of the study was to explore the relationship between mobile technology, in the form of iPods, and the professional development experience of participants in this program. The study took a mixed-methods approach. Results of the study found that participants had a "great deal" of comfort with the iPods and listened to podcasts on a variety of topics. The most popular benefits of using the devices were the ability to share information, the mobility of the device, and access to educational content. The value of mobile learning in Extension programming is the ability to take advantage of "learning episodes" and extend Extension programs to individuals who might not otherwise have had the opportunity.*

Keywords: Mobile Learning, Technology, Leadership Development, Extension Teaching Methods, Adult Learning

**The Impact of Cross-cultural Training Experiences on Malian Journalists Who Report on Agricultural and Environmental Issues: Did Their Views on Job Duties, Media and Ethics Change?**

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**Abstract**

*Mali's transition to a functioning democracy, including a future with national food sufficiency and a sustainable environment, is best served by a free press system. This study provided evidence a cross-cultural professional development program could influence the planned behaviors and subjective norms of Malian journalists. The journalists were mostly males and varied in their professional experiences. Five months post-professional development, the journalists indicated their opportunity to "develop a specialty" was the most important aspect of their job. They perceived the most important function of news media was "to provide analysis and interpretation of complex problems" and "to get information to the public quickly." The participants viewed none of the ethical issues as being more than slightly justifiable.*

*In comparing Malian journalists' views five months after professional development training, the participants placed more importance on salary and, to a lesser extent, fringe benefits post-training. Participants developed a greater appreciation for helping people and developing a specialty, and placed more importance on staying away from stories not supported by factual information. The journalists viewed the role of media in discussing national policy, setting the political agenda and being an adversary of business as more important post-training. The journalists' views of the justifiableness of ethical issues mostly decreased. The most noteworthy decreases were on issues of disclosing rape victim names, paying people for information, and using hidden microphones and cameras. It is recommended similar training experiences should be conducted with other journalists in Mali and in fledgling democracies around the world.*

Keywords: Attitudes, Journalists, Mali, Media Ethics

## **An Evaluation of Selected Technology Tools for Extension Work: Use, Satisfaction, and Practice Change**

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### **Abstract**

*Increased access and use of technology is changing the way Extension professionals connect with each other and with clientele. To learn more about e-learning tools that could be used in training for Extension professionals or teaching, we conducted an evaluation of technology tools used during a training program. Technology tools for communication, project management, course management, creating podcasts, and others were deployed with 40 Extension professionals. Both immediate and follow-up evaluations were used to measure usefulness, use, and how tools were being used. Participants also provided written responses addressing how they were applying technology tools to other areas or their life and work. Tools that facilitated communication, project collaboration, and course management were highly rated. Overall, many (83%) participants appear to have adopted use of at least one of the technology tools and can share specifically how they are using them in Extension work.*

Keywords: distance education tools, e-learning, evaluation

## Training for Extension Professionals Using Blended e-Learning Tools: A Case Study

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### Abstract

*In this paper, we share our experiences in planning, teaching, and evaluating a program for Extension professionals that was taught using blended e-learning methods of teaching. The authors were involved in a training program for Extension professionals called Blended E-Learning that taught a combination of knowledge economy-related subject matter content and technology content to 40 participants in 2007 and 2008. Immediate post-program and follow-up evaluations were conducted using fixed response and open-ended questions about subject matter content and technology tools. Participants reported significant gains in knowledge, awareness, and ability to share subject matter concepts with others. Furthermore, follow-up evaluations showed that over one half of had adopted use of technology content in their extension teaching or to aid in program and/or curriculum development. Based on our experience and evaluation results, we share recommendations including a need to focus the scope of subject matter content, hold an initial face-to-face orientation, use project work to engage participants, and invest ample planning time as one would with traditional face-to-face instruction. Overall, the program shared in this article serves as a case study for teaching using e-blended learning in a way that has documented impact with learners.*

Keywords: distance education, e-learning tools, program evaluation

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**Assessing the Impact of a Farmer Field Schools Project in East Africa****Kristin Davis**

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**Abstract**

*Farmer field schools (FFS) are a popular education and extension approach worldwide. However, there is limited or conflicting evidence as to their effect on productivity, poverty, and empowerment, especially in East Africa. This study attempts to provide rigorous evidence to policymakers and other stakeholders on the effectiveness of FFS in reducing poverty and empowering farmers. The researchers examined a FFS project in Kenya, Tanzania, and Uganda. Using a variety of methods, including a household survey, the authors describe participation in FFS and its effects on productivity, empowerment, and poverty. They find that households with younger heads and those who were also members of credit and savings organizations tended to participate in field schools. Female membership was 50%. Reasons for not joining FFS included lack of time and information. Adoption was significantly higher among the FFS farmers for nearly all of the major technologies, with the major technologies being improved crop varieties, soil fertility management, pest control, and livestock management. FFS had a significantly larger impact on crop productivity in Kenya than in Tanzania and Uganda; however, in the latter countries, women farmers' productivity was significantly higher than men's. Regarding poverty, there were differences between the three countries and also between FFS and non-FFS in various poverty indicators. While qualitative data suggest that FFS contribute to empowerment of individual farmers, these differences were not very apparent in the survey results, and more refined means should be used to show such evidence in future.*

Key Words: Farmer field schools, impact, East Africa

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**Setting Agricultural Research Priorities: The Case for the Agricultural Sector in Swaziland**

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**Abstract**

*The present descriptive study determined the research priorities in Swaziland agricultural sector as perceived by agricultural experts in field crops, horticulture and livestock sectors, and used triangulation of desk review, Nominal Group Technique and a modified Delphi technique. Findings revealed that the priorities from national policies are tied-up with the country's greatest challenge of mitigating the effects of HIV and AIDS on food security, reduction of poverty, and sustainable development. The findings further revealed that forty-three areas in field crops sector needed research. Seven areas in horticulture were considered mostly in need of research. Eleven research areas were considered to be of high priority in the livestock sector. A considerable number of research areas in field crops, horticulture and livestock indicated that the current research system has not adequately addressed research needs, despite the efforts made by the private sector, the University of Swaziland and the Ministry of Agriculture and Cooperatives, for the country to achieve self-sufficiency in food production. From the findings, it was recommended that the research priorities should be used as basis for directing the limited resources in conducting agricultural research. The participation of all stakeholders would facilitate efficient use of resources, to enhance collaboration amongst research institutions. The University of Swaziland should develop research priorities aligned to national policies and objectives to facilitate funding for research by both government and donor agencies.*

Keywords: Research priorities, agricultural research, agricultural sector.

**Longitudinal Impacts of a Faculty Abroad Program: 1994-2007****Kim E. Dooley**

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**Abstract**

*When surveyed, faculty generally believe that study abroad is desirable or essential, that it is important to work with people from different cultural backgrounds, it helps people to function effectively in another culture within their profession, and enhances knowledge of current international issues and affairs (Dooley, Dooley & Carranza, 2008; Towsic, N.D.). Sending faculty to programs abroad can therefore enhance academic potential (Özturgut, 2007). The 10-day Faculty Abroad Seminar (FAS) sponsored through the Office of Mexican and Latin American Programs at Texas A&M University was developed to contribute to the internationalization of faculty by directly exposing them to the culture, history, government, business, and language of Mexico. The main objective was for faculty participants to incorporate applicable global experiences into their teaching and research programs. The purpose of this study was to determine the longitudinal impacts of the FAS on participants from 1994–2007 in terms of teaching and research collaboration. As faculty participants reflected about their teaching and research impacts, a higher percentage of respondents had teaching impacts compared with research impacts (74 percent and 64 percent, respectively). In describing personal impacts participants' comments supported the belief that the Faculty Abroad Seminar changed them, personally, and professionally.*

Keywords: Faculty Abroad, International Experience, Mexico

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**An Assessment of the Needs of Georgian Secondary Agricultural Educators****Dennis W. Duncan, Ph.D.**

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**Abstract**

*This purpose of this study was to determine the perception of secondary educators involved in Future Farmers of Georgia (FFG) schools throughout the country of Georgia concerning their needs for furthering the existing framework of agricultural education. The researchers used a modified Delphi method to meet the aforementioned purpose of this study. The population for this study consisted of the high school agricultural education teachers and their administrators who were participating in the FFG Program (n=14). The teachers represented seven different school districts. Qualitative data collected from the probe (first round) was used to generate a series of 46 statements. In the second round participants were asked to rank the 46 statements using a five point Likert-type scale. Due to recent events in the Former Republic of Georgia, the third round could not be conducted. Therefore, the researchers concluded that the round two data would be used to meet the purpose and objectives of this study. Participants strongly agreed that the FFG program strengthens leadership skills among their students and students have become more involved in practical/labor activities. They also agreed that gaining knowledge and skills from the FFG program will improve the future development of agricultural education in the country. Participants also strongly agreed that improvement of schools' materials, technology, and equipment are necessary to improve the FFG program. Participants were either neutral or agreed with the following statements: due to the FFG program, academic performance has been increased among students; and students have greater academic success in history and geography.*

Keywords: Georgia, Caucasus, Delphi, Needs Assessment

**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 a primary outlet of international agricultural development and education publishing and research dissemination. 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:** Journal of International Agricultural and Extension Education, cited literature, content analysis, citationology, interrelatedness to extension, interrelatedness to agricultural education

**Strengthening Faculties of Agriculture in Africa through Collaborative Post-Graduate Degree Training by U.S. and African Universities: The HEPAD Experience**

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**Abstract**

*From the 1960s through the 1980s, U.S. universities, foundations, and the U.S. Agency for International Development (USAID) provided major support for higher education institution building and post-graduate degree training. Commitment to these programs largely disappeared during the 1990s. Signs of renewed commitment have appeared within the last five years, but many donors are seeking more effective and less costly capacity building and training models before launching major new investments. This paper draws insights for improved post-graduate training models from a project implemented by a partnership of two U.S. and three East African universities, called “Higher Education Partnerships for African Development (HEPAD): Long-term Training for Regional Agricultural Development in East Africa: Kenya, Tanzania, and Uganda.” The project was funded by the U.S. Agency for International Development from 2005-2008 as one of three pilot projects designed to provide guidance for an intended major program of USAID reinvestment in strengthening African universities, particularly Faculties of Agriculture. An important goal of the project was to identify ways of improving the cost-effectiveness of post-graduate training of African agricultural scientists, and the relevance of that training to national development goals. The paper summarizes issues, challenges, and lessons learned from this project. The contributions of the “sandwich program” training design and other program features to training effectiveness and cost savings are presented. Recommendations are made for improvements in long-term training design, faculty development, and project management.*

**Keywords:** Agricultural Education and Training (AET), university partnerships, long-term degree training, capacity building, sandwich degree training

**An examination of customer satisfaction in the GGAVATT program in Veracruz, Mexico****Sebastian Galindo-Gonzalez**

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**Abstract**

*The GGAVATT (Livestock Groups for Technology Validation and Transference) is a technology transfer program for livestock producers developed in Veracruz in the early 1980s. In this program, neighboring farmers were organized into groups of a minimum of 10 participants to receive technical advice from a research institution through a group advisor. The purpose of this study is to investigate the satisfaction of the GGAVATT participants in Veracruz, Mexico. Data were collected from 406 group participants and 38 group advisors during the spring of 2007 on: (a) the overall satisfaction with the GGAVATT program, (b) the quality of the experience with different elements of the program, (c) the demographic attributes of the respondents, (d) the demographic attributes of the group advisors, and (e) the economic performance of the group. The study showed that participants' satisfaction with advisors, group interaction, and the overall GGAVATT program was quite high and comparable to levels observed for extension clients in the US. Although participants' satisfaction with advisors and group interaction was quite high, there were significant differences associated with client and advisor attributes that are important to consider in order to maximize the quality and impact of extension programs. The results from this study suggest that advisors with another job may need to receive special training to help them increase the effectiveness of their delivery methods and conflict resolution skills.*

Keywords: customer satisfaction, group extension, GGAVATT, homophily

## **Participatory Agricultural Development in Nepal: Discrepancies between Policies, Views and Experiences**

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### **Abstract**

*The objective of this study was to understand the government's aims in promoting farmer participation in agricultural development in Nepal, and to explore the experiences of farmers in a Sustainable Soil Management Program. Focus group discussions and in-depth interviews were held with farmers, policy makers, and extension staff to collect mainly qualitative data. Data were also collected on the stated aims of farmer participation from government policy and program documents and from staff and officials. Findings suggest large difference between the official aims of farmer participation stated in national policy documents, interpretations in government's program documents, views by extension staff and the experiences of farmers. Government policy stresses close coordination among research, extension and farmers but in practice farmers' needs and priorities were not considered in program design. Extension staff directed farmer participation in the program mainly to generate the data for program reporting, while farmers often participated mainly for the 'incentives' offered. These results point to a need for stronger interaction and coordination between national policy makers, participatory practitioners, and farmers on setting the aims and type of participation in agricultural development, and in evaluating their achievement. Emphasis should be given to approaches based on co-learning between extension and farmers, to ensure that interventions developed are appropriate to farmers' needs and resources. The finding that national policies on farmer involvement in development programs are not followed in program implementation suggests a serious need for awareness training and incentives systems for extension staff.*

Keywords: participation, coordination, program evaluation, incentives, co-learning

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**Farmer Field School Completers', Non-Completers', and Non-Participants' Perceptions of Integrated Pest Management: The Case of Trinidad and Tobago**

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**Abstract**

*The Farmer Field School (FFS) approach to agricultural extension and education was designed to enable farmers to engage in decision-making processes on the ecology of their own fields. Since 2002, the Trinidad and Tobago Ministry of Agriculture Lands and Marine Resources has conducted FFSs focused on building farmers' capacities for employing integrated pest management (IPM) practices, thus enabling them to discontinue dependency on pesticides as the primary pest-control measure.*

*The purpose of the study is to identify and analyze 1) the relationship between participation status (i.e., completion, non-completion, or non-participation) and selected socio-demographic characteristics, and 2) the relationship between participation status and perceptions regarding the use of pesticides, their willingness to take on the financial risk of adopting new farming methods, and the compatibility of IPM with local agricultural practices. The sample population (N=109) consisted of farmers classified as FFS completers (n=56), non-completers (n=15), and non-participants (n=38) from five FFSs in Trinidad.*

*FFS completers possessed a greater concern for the environment than did non-completers and non-participants, are more likely than non-completers to be willing to take on the financial risks involved in the adoption of IPM on their farms, and believed more strongly than did non-completers that IPM is compatible with agricultural practices and the market in Trinidad and Tobago.*

*With the results of the study, MALMR may employ strategies that impair or eliminate the factors leading to non-completion and non-participation, thus making FFS more accessible, increase participation, and enable more farmers to benefit from an agro-ecological approach to farming.*

Keywords: pesticide agro-ecosystems analysis non-formal education

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**Service-learning Benefits Gained by Agricultural Students in Costa Rica: A Case Study****Wilmara Corrêa Harder**

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**Abstract**

*The purpose of the study was to determine the benefits of engaging agricultural students on a service-learning program in Costa Rica. This study used qualitative methodology to collect and analyze data. The context of this study was an upper-level undergraduate course that evolved five-week in-class preparation and a twelve-day study abroad service-learning project in Costa Rica. A new partnership emerged between The Agroecotourism Association of La Argentina de Pocora, Tarleton State University, and EARTH University. Six students participated in the program and they wrote in total 72 journals. Upon returning to the U.S. students developed a website for the Agroecotourism Association of La Argentina de Pocora. An open coding process was used to recognize patterns and themes on students' journals. Three independent reviewers read each journal and the content were categorized. Students gained knowledge, fulfillment, and gratitude from participating in the service-learning program. Students also gained knowledge regarding tropical agricultural, sustainable production, and organic foods. Short-term study abroad programs that have service-learning components help students acquire cultural awareness and gain greater worldviews. Service-learning within the international agricultural context is not widely studied and accomplished. This study abroad program was a unique teaching and learning experience that could be used as example by many other educators across the nation. However, results from this case study could not be generalized. Programs like this could be used to promote in-depth learning opportunities and engage students in meaningful activities that will help them make the transition from academics to communities.*

**Keywords:** Service-learning, study abroad, agricultural students, journals, and international development

## Internationalizing Plant Protection through Extension: The International Plant Diagnostic Network

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### Abstract

*Global tourism and industrial trade are unwitting partners in the movement of exotic and invasive plant pests and pathogens. Coupled with natural movement by wind and storms, these factors are increasing the transfer plant pests and impacting agricultural operations around the world. It is important to develop plans for protecting agriculture through early detection and accurate diagnosis of new plant pests arriving in our ports or becoming established in our ecosystems. The National Plant Diagnostic Network (NPDN) was developed in the U.S. in 2002, and has been used as a model in the development of other international networks of plant protection partners. The International Plant Diagnostic Network (IPDN) is a growing linkage of such partners in Central and South America, the Caribbean, Africa, and Eastern Europe. Important objectives of each of these two networks include training for diagnosticians, development and exchange of diagnostic and communications Standard Operating Procedures (SOPs), and use of Laboratory Information Management Systems (LIMS) to track samples and connect experts and diagnosticians around the world. The development and use of standard operating procedures (SOPs) for techniques and communication encourages trust between entities and allows for scientifically-based trade decisions. Many of these efforts are utilizing established connections with university and regulatory specialists, extension faculty, and producers. Rather than reinventing the wheel, the diagnostic networks aim to increase the number and quality of plant protection tools available for use within the existing Extension system.*

Keywords: Agriculture, Detection, Diagnosis, Exotic, Protection

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## Participatory Innovation Development and Extension in Ethiopia: A Case Study

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### Abstract

*This paper describes a case study of the implementation of the process of participatory innovation development (PID) in Ethiopia. PID is an unconventional method to agricultural Extension and research efforts. It is an approach that promotes an engagement in a process that strengthens the capacities of agricultural services to support community-lead initiatives. This method is based on local innovation, social learning, and farmer-led experimentation. In this case study fieldworkers examined the creation of the Bedasa Grain Bank as a socio-economic local innovation. The researchers assessed the potential for participatory innovation development; i.e., Extension training and collaborative research. Through the use of participatory tools farmers, members of the Bank, identified strengths and challenges in scaling up their innovation; and developed a plan to investigate marketing and other training possibilities for capacity building. Although this study describes a context-specific case, the wider sharing of innovations discovered and developed by promoting local innovation provide ideas and inspiration for local experimentation elsewhere, so that new ideas can be adapted to other settings.*

Keywords: Agricultural Development, Extension, Local Innovation, Participatory Approaches, Rural Development.

**Using Modernized Relic Technology to Better Enable Sustainable Agricultural Practices in Developing Countries: A Philosophical and Practical Reorientation for Mali's Farmers**

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**Abstract**

*Sustainable agriculture is important because it is a vital business component practiced by forward-thinking entrepreneurs (Geraci, 2004), including smallholder farmers and the industries that complement their work. Accordingly, the purpose of this paper is to share how the use of scale appropriate, relic agricultural technology may offer a viable approach for improving or further developing sustainable agricultural practices in a country with limited resources such as Mali. By using existing animal husbandry skills combined with education to use innovative relic technology, animal powered farm equipment, Malians can achieve an increase in food production, meaningful cottage industry development, and maintain their existing rural society. The approach shared is critical for a country that has essentially no oil resources and limited funds. The authors propose introducing low cost technology to provide sustainable food production and drive the creation of complementary businesses. The long-term sustainable outcome would be stacked-entrepreneurial enterprises (McDonald, 2008) built on serving the agricultural and related employment needs of Mali's rural villages.*

Keywords: agricultural education, relic technology, sustainable agriculture

## Selected Factors Affecting the Performance of Women's Self-Help Groups in Western Kenya

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### Abstract

*Women frequently encounter greater limitations and fewer opportunities than men, especially in regards to income-generating activities. They may face social and economic constraints that perpetuates poverty and spans generations. However, significant opportunities exist in the informal, small-scale enterprise sector for which women may be advantaged. Community groups are popular institutions in Kenya's rural areas; groups help provide services that the government may have failed to deliver. So, it is important to examine such affiliations as they may promote sustainable, local development. The purpose of this study was to describe selected factors affecting the performance of women who belonged to self-help groups in the Shaviringa Location, Vihiga District of Western Kenya. Semi-structured, focus group interviews were used to collect data from 11 groups, including 64 women. Factors that the groups' perceived affected their performance included issues related to marketing, transport of goods produced, lack of motivations (intrinsic and extrinsic), general group governance, management, and leadership. Most women's self-help groups were involved in entrepreneurial activities including some form of business ventures. However, it is recommended that the women's self-help groups be provided training in the development of business plans and guidance about how best to avoid redundancy or undue duplication of income-generating projects and activities.*

Keywords: Education, Kenya, Poverty, Women's Groups

**Communicating Agricultural and Health-Related Information in Low Literacy Communities: A Case Study of Villagers Served by the Bougoula Commune in Mali**

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**Abstract**

*When villagers in Bougoula Commune in Mali were asked to rank their preference for receiving information about problems related to water, new technologies and communications (NTCs) and mass-media channels ranked the lowest. The respondents preferred interpersonal communication channels with the chief of the village followed by meetings, Extension agents and peer farmers, which were rated equally. Both genders seemed equally concerned about disease ranking malaria as the highest concern. The study showed gender differences, however, with regard to water-related infrastructure issues. Males were more interested in dams, wells, and bridges. Females were interested in issues that affected their traditional and daily duties, such as water pumps, access to water, and pollution by pesticides. Thus, issues may need to be addressed separately, according to gender. Careful attention also needs to be paid to the channels through which the educational information is sent. The authors recommend the empowerment of opinion leaders to transmit appropriate information effectively to villagers because of referent power and their influence within their homophilic groups.*

Keywords: low literacy; Mali; participatory assessment.

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

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*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

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**International Implications for Focusing Research in  
Career and Technical Training and Workforce Development**

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**Abstract**

*Education and educational research is shaped by philosophy, psychology, and ever changing educational policies. Previous studies have expressed a need for relevant and focused research for agricultural education, career and technical education, workforce development education, and internationally, vocational education. A need for a relevant and timely research agenda exists for the field of career and technical education. The problem is that it is not known what these research foci should be, or if known, whether or not there is consensus within the profession. Obtaining such insight underlies the primary purpose of this study which was to gather opinions of nationally dispersed experts and identify common research topics through a consensus-building process.*

*A mixed methodology was utilized in the study through the use of the Delphi technique (Linstone & Turoff, 2007). This method utilized a process of six iterations of instruments conducted during 2007 and 2008, using a panel of identified experts with knowledge and understanding of the issue or issues being studied. Based on the findings from this study, two models were developed to depict the National Career and Technical Education Research Agenda. The educational importance of this study is grounded in the fact that focused research in career and technical education and international vocational education will allow future planning and funding of research that can be relevant across the profession. Based upon the opinions of the expert panel, a sustained effort for research should be made by scholars in collaboration with national and international associations and organizations.*

**Keywords:** workforce development; career & technical education, vocational education; training; research agenda

**Reflective Writing in Study Abroad Programs: Hunting a Story in South Africa****Ginger Larson**

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**Abstract**

*Universities are challenged to effectively prepare students to enter a global workforce equipped with the knowledge and communication skills to perform in an interdependent world. Short-term study abroad programs have shown the highest increase in participants, but strategic methods must be explored in order to make the most use of such little immersion time abroad. One such method is reflective writing. During a short-term study abroad course in South Africa, eight students kept reflective journals. This qualitative study used purposive sampling to gain greater insight into the thinking and meaning-making students conducted while studying abroad. Research objectives examined students' self-awareness in the global community, changes in cultural paradigms, and desire to prescribe and become a part of solutions. Reflective writing proved to be a valuable educational tool to solidify learning and engage students in an international setting while permanently capturing student observations and emotions.*

Keywords: reflective writing, study abroad, perspectives, self-awareness, experiential learning

**Lessons Learned from a Camp Health Aide Safety Program for Farm Workers****Diane Mashburn**

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**Abstract**

*Migrant farmworkers face a disproportionate risk of injury on the job. This study looked at the risks faced by citrus harvesters in Florida and developed an intervention to reduce the most common injuries by promoting the use of safety eyewear. Using two methodologies, community-based social marketing and camp health aides (CHAs), the project developed a curriculum and safety intervention that changed the behavior of migrant workers. In 2007, the intervention was evaluated for effectiveness and to better understand the factors that influenced worker acceptance of new safety technology. Citrus harvesting crews that had a CHA promoting the use of safety glasses had higher use rates and the activities of the CHA were found to influence the decision of workers. The age of citrus workers was also significant, suggesting that future interventions should develop targeted programs aimed at distinct groups. The results have significance for Extension programs that seek to improve safety of agricultural labor and also those wishing to utilize social marketing methodologies or camp health aides in innovative ways.*

Keywords: social marketing, camp health aides, behavior change, farm workers, evaluation

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**Extension's Role in Organizing Producer Groups: a Case Study from Orissa, India****Sanat Mishra**

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*This paper outlines the procedures and outcomes of a new extension model in India that sought to organize producer and self-help groups within four districts in the State of Orissa. This new program activity was carried out as part of an overall decentralized, farmer-led, market-driven extension model that was pilot-tested as part of the Innovations in Technology Dissemination (ITD) component of National Agriculture Technology Project (NATP) funded by the World Bank during 1998-2005. First, this new extension model sought to integrate research and extension activities in each participating district through a new Agriculture Technology Management Agency (ATMA). Second, each ATMA worked to integrate the efforts of the district extension system, local non-governmental organizations (NGOs) and farm leaders to collaborate together in forming different types of Farmer Interest Groups (FIGs) and women's Self Help Groups (SHGs) across each district. The primary goal was to enable these farmer groups to pursue appropriate high-value crop, livestock or other enterprises that would increase farm household income. The procedures used to organize these groups are outlined in this paper. Once organized, these FIGs and SHGs became involved in the extension program planning process through the ATMA Governing Boards at the district level and Farmer Advisory Committees established at the block or subdistrict level. The purpose was to identify key problems and priorities among these different farmer groups. As a result of this new extension strategy, nearly 1,400 producer groups were organized in five years across these four project districts.*

Keywords: farmer organizations, bottom-up extension, rural livelihoods

**The Impact of Technologies Diffused by the Tikonko Agricultural Extension Centre (TAEC) on Farmers of the Tikonko Chiefdom in Sierra Leone**

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**Abstract**

*Sierra Leone is a West African nation with about two-thirds of its population engaged in agriculture but it cannot feed itself. Agricultural activities were disrupted in Sierra Leone by a decade-long Civil War that created a great need for improved farming technologies. The Tikonko Agricultural Extension Centre (TAEC) operates in the Tikonko Chiefdom to assist local farmers in improving food production through the fabrication and repair of farm tools to be adopted and used by farmers. This study was conducted to investigate the impacts of TAEC's technologies on farmers and their communities in the Tikonko Chiefdom. The target population consisted of 318 farmers who used TAEC's technologies; the list of farmers was obtained from the Centre. A sample for the study ( $n = 74$ ) was obtained through simple random sampling using a table of random numbers. A structured survey questionnaire was completed through one-on-one, oral interviews of farmers; 23.3% of the target population was interviewed. A majority of the farmers interviewed agreed that they readily adopted and used TAEC's technologies. Moreover, most farmers strongly agreed that their introduction to and subsequent adoption of TAEC's technologies had considerable impact on their farming practices and communities. The relevance of TAEC's technologies to farmers in Tikonko Chiefdom was evident. Providing appropriate technologies that can be adopted by low income farmers stands to increase their productivity and self-reliance while improving their nations' food security. It is undeniable that technologies contributing to food sufficiency and alleviating poverty are needed throughout much of the developing world.*

**Keywords:** Farming; Sierra Leone; Technological Innovations

**Perceptions and Assessments of Armenian University Faculty Members Who Participated  
in a Professional Development Seminar in 2007**

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**Abstract**

*The Armenian State Agrarian University (ASAU) is one of the largest of the twenty state funded higher education institutions in the country. ASAU administrators have recently focused their efforts toward aligning the ASAU with the standards set forth in the Bologna Process. In 2006, ASAU partnered with the United States Department of Agriculture Foreign Agricultural Service and Texas A&M University to implement the Agricultural Education Reforms Initiative (AERI) to initiate an educational reform process and help prepare the university to be accredited by the European Union. Consequently, professional development seminars were designed and delivered to ASAU faculty by faculty members from a land-grant university in the USA. The participants attended a seven-day professional development seminar on teaching and learning methods in April 2007. When questioned about the change of quality of education in Armenia since 1991, the participants' answers varied from "much worse" (22.2%) to "somewhat improved" (72.2%). Faculty members were optimistic about the future of agricultural education in Armenia; over 50% indicated that they thought that agricultural education would improve during the next five years. Topics that the participants indicated held the greatest importance to their professional development included "Utilizing the Problem-Solving Method of Teaching and Learning," and "Characteristics of Effective Teachers." Participants also believed they held the highest ability to implement principles related to the following topics: "Utilizing the Problem-Solving Method of Teaching and Learning", and "Contextual Learning". This study provides data that will be helpful for providers of future collaborative professional development to provide effective programming.*

Keywords: Armenia, Faculty Development, Bologna Process

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**Identify Key Components and their Value in Development of an Effective Chinese Business by United States Agricultural Companies: A Delphi Study**

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**Abstract**

*The purpose of this study was to identify key components and their importance in development of an effective China business by U.S. agricultural companies. This study utilized the Delphi techniques and three rounds were conducted. A group of 37 professionals completed the first round with 34 of the original 37 professionals completing the second and third rounds. The panel generated 63 key components that U.S. agricultural companies should consider when entering the Chinese market. Of the 63 key components, the panel rated 11 to be essential, 44 to be very important, and eight to be moderately important. Furthermore, the 63 key components were grouped into nine groups: ethics and trust, language and culture, Chinese market, political and economic climate in China, product advantages and customer service, human resource and labor, networks and partnerships in China, Chinese business practices, and legal counsel and intellectual property in China. The value of the ethics and trust group is greater ( $p < 0.05$ ) than the other eight groups with the ethics and trust group considered to be essential, while the other eight groups were considered very important. In conclusion, the key components generated in this study were all important and have significant value and therefore should be included in an educational training program targeted at U.S. agricultural companies wishing to successfully develop a China business.*

Keywords: Key component, Value, Educational program, Business development, China

## **An Exploratory Investigation of the Influence of Donated English-language Books Upon the Reading Fluency Scores of Students From Rural Tanzania**

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### **Abstract**

*An enormous shortage of text and library books exists throughout Africa. Accordingly, millions of donated text and library books have been shipped by a number of non-profit organizations over the past 20 years to Africa through funding provided by public, private, and government organizations. While some research shows that books increase student literacy rates, inconclusive data is available regarding the impact of donated English-language textbooks upon student achievement. This study examined the influence of donated English-language text and library books from the United States upon Tanzanian tenth grade student reading fluency scores. A mixed methods research model was used in a comparative case study in four schools in the Dodoma/Singida region of Central Tanzania, East Africa. Results showed students experienced increased English-language reading fluency scores when provided with books. In addition, the interview data revealed that teachers and administrators believed donated English-language books did not do cultural harm and served to improve student educational capacity. It was concluded that while this was an initial study, the findings may serve as one source of information to justify book donation programs in the developing world and that additional research with other students from Tanzania and other developing countries is warranted.*

Keywords: Africa, education, development, literacy, reading

## Using Group Facilitation Skills to Provide Training for Extension Modernization

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### **Abstract**

*Modernizing an extension service means more than incorporating in new technologies in the distribution of information and educational programs. Extension services are often faced with the challenge of serving a wider array of client and community needs as they struggle to balance local resources with global demands for both raw commodities and niche products while they are under increasing pressure to downsize. An effective modern extension service needs access to the latest research information and educational technologies but those resources are of little value if they don't meet the unique needs of the people and communities they serve. A modern extension service must also be skilled in human development and group process skills that uncover the unique needs for those they serve and build the capacity within them to sustainably meet their needs. This paper describes how a team of faculty members from the University of Wisconsin Cooperative Extension Service engaged the Guyana Ministry of Agriculture Extension Service in successfully incorporating those capacity building skills in their modernization effort through a combination of formal workshops and modeling group process skills in two agricultural communities.*

Key Words: Facilitation skills, extension exchange programs, Group process skills,

**A Brain-Based, Experiential Learning Framework to Guide International Experiences****T. Grady Roberts**

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**Abstract**

*The purpose of this article is to create a theoretically-based experiential framework for international experiences based on cognitive science. Such a framework will help agricultural and extension educators facilitate learning activities before, during, and after an international experience that have positive cognitive and affective impacts on students. The framework was developed through content analysis and synthesis of learning theory and cognitive science literature. It was concluded that cognitive science and contemporary learning theory provide a solid framework to help agricultural and extension educators facilitate learning before, during, and after an international experience. A model was developed to guide educators through his process. Before an experience, it was concluded that educators should focus on pre-reflection. The authors also concluded that during an experience educators should implement activities for learner reflection. Finally, it was concluded that after an international experience educators should also facilitate reflection activities.*

Keywords: cognitive science; experiential learning; international experiences; reflection

## **A Case Study on Utilizing Cacao-based Agroforestry Systems to Replace Low Productivity Crops on Hillsides in Honduras**

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### **Abstract**

*The purpose of this paper was to describe the methodology followed by the Honduran Agricultural Research Foundation (FHIA) when implementing an income generating project that improved the quality of life of 445 poor, rural producers (including 95 women) of the hillside and piedmont areas of the Honduran north coast and at the same time protected and maintained the natural resource base of the area. As a result of these programming efforts, a total of 2,450 rural family members now have increased their yearly incomes from an average of \$400 / hectare to approximately US\$2,500 per hectare utilizing perennial crops alone. Through the introduction of new cacao plantings coupled with other high-value commodities such as plantains, tropical fruits and fast-growing tropical woods, the risks inherent in hillside farming were spread out over more enterprises. These new plantings in most cases only took up about one-half of the land area for a family; therefore, they still had ample room to produce their own basic commodities for home consumption. In addition, thorough the introduction of high-value perennial crops and the removal or restriction of grazing to more appropriate areas, producers had very little need to continue using slash and burn practices. Finally, the improved environmental conditions on their lands have greatly reduced rain-caused erosion, improved air and water quality, protected remaining forests and provided for reforestation efforts. Important lessons learned were also described in order that other organizations might be able to replicate these positive results.*

Keywords: cacao, agroforestry, deforestation, income generation, sustainability

## Post-Conflict Agricultural Development: Lessons Learned in Eight Provinces in Iraq

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### Abstract

*Applications of rapid rural appraisal and needs assessment strategies in a post-conflict environment in central Iraq are the foci of this paper. The project objectives evolved into a systems approach using qualitative and quantitative methods to improve agricultural practice, extension and training, community development, security, and policies for governance. The design called for a case study and a description of pre-deployment activities of an assessment team, initial organization and adjustments, and techniques for internal and external communication. Particular attention was given to agricultural specialties, crosscutting constructs, and data collection and analysis protocols in eight provinces in Iraq from May-December, 2008. Findings focus on 13 agricultural specialties: agricultural business, agricultural economics and market development, agricultural engineering and farm machinery, aquaculture, crop production and management, extension education, higher agricultural education and vocational-technical education, horticulture and cold chain, livestock production and animal health, organizational management and leadership, soil fertility and reclamation, water and irrigation systems, and youth development. The protocol identified 11 crosscutting constructs: cooperation, economic competitiveness, education and training, environmental stewardship, future view, governance, health and wellness, land tenure, receptivity to change, security, and sustainability. We concluded that engagement is essential; process is important—more important than one may think!; and reflection is not simply additive; it is exponential and synergistic. Nine lessons learned have implication for best development practice. Practical implications point to strategies that transform from kinetic action to development practice. The experience describes critical roles of agricultural and extension education as a conduit from conflict to a civil society.*

**Keywords:** agricultural development; education, extension; post conflict; rapid rural appraisal, assessment, smallholder farmer

## Post-War Education of Small Ruminant Farmers of the Bekaa Valley, Lebanon

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### Abstract

*Lebanon is an ancient, Middle Eastern country bordered by the Mediterranean Sea, Israel, and Syria. The Bekaa Valley of Lebanon is mountainous and suited to small ruminant production. The 2006 war between Lebanon and Israel left small ruminant producers of the Bekaa Valley in a difficult economic situation. The United States Agency for International Development (USAID) as part of an aid package to Lebanon, provided technical and financial assistance to livestock producers in the Bekaa Valley. The Bekaa Valley was chosen because this area is a stronghold of the Hezbollah organization and was subsequently heavily bombed by Israel. During the years of 2007 and 2008, the author was recruited by USAID to provide technical assistance, in partnership with Lebanese agricultural specialists, specifically to small ruminant producers of the Bekaa Valley and southern regions of Lebanon. The major objectives of this assignment were two-fold: (1) to assess weaknesses and strengths related to the small ruminant milk supply chain; and (2) provide hands-on targeted technical assistance based on these evaluations, primarily at the producer level, on flock management, animal health, and improved milk production and quality. As result of this assignment over 250 producers received technical assistance on a number of issues in the form of either individual consultations or workshops. Weaknesses in the dairy supply chain such as low milk prices and poor disease management were identified. Castration was also introduced as a tool for managing market sheep and goats.*

Key Words: Small ruminants, dairy, war, education, development

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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 these changes. The purpose of this study was to determine the level of global mindedness among Extension agents in North Carolina and to identify the factors affecting their global mindedness. This study found that the typical Extension agent from North Carolina has a moderate to high level of global mindedness on this scale. This study found that the level of Extension agents' global mindedness varies with their age, levels of education, gender and programming area of job responsibility. This study revealed that Extension agents with international experience have a higher level of global mindedness and the agents who have participated in programs such as the Peace Corps and study abroad were more globally minded. This study found a weak positive relationship between the length of time Extension agents have spent abroad and their global mindedness. This study is significant because it describes how to determine the global mindedness of Extension agents and identify the factors affecting their global mindedness.*

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

## Motivations and Reasons for Participation: Professional Development Study-Tour to Mexico

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### Abstract

*In late February and early March of 2007 a group of Purdue University Cooperative Extension Service Educators and community partners from counties across Indiana participated in a nine-day cultural immersion trip to Mexico titled “Experience: The Culture of Mexico.” Through the collection of data from qualitative interviews, the study aimed to identify the role that a short-term international immersion experience could play as a professional development tool. This paper looked at what participants identified as the motivations and reasons they chose to participate. The findings identified that many participants shared motivations for choosing to participate. Seven motivational themes emerged. It is recommended that participant motivations be used to guide the program planning process for international experience programs. It is suggested that participant motivations be a tool for selecting whether the participant attends the program.*

Keywords: international extension, andragogy, professional development

**Developing a Collaborative Evaluation Toolkit to Work with Extension Audiences:  
Economic Development and Carteret Catch**

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**Abstract**

*This project used collaborative evaluation techniques to develop a model for delivering technical assistance to small-scale enterprises in North Carolina. Collaborative evaluation engages key stakeholders at all stages of the evaluation process to enhance their capacity to make data driven decisions. It has been successfully applied to a variety of programs, spanning education, social services, government, and agriculture. The project applied this evaluation approach to meet the marketing evaluation needs of an emerging Eastern North Carolina Local Seafood Promotion Organization, “Carteret Catch.” During the project, three surveys were developed and conducted to assess interest in locally caught seafood among consumers, restaurants, and retailers. The surveys and the methodologies to gather the information emerged in the course of the project through consultation with stakeholders. From this project it is proposed that an evaluation toolkit be developed, with a mind to developing a model that could serve as the basis for a curriculum to promote economic development for extension programs to serve other small-scale enterprises in the state.*

Key Words: evaluation, survey development, marketing surveys

**Impacts of Sustainable Agriculture Research and Education Grant Program:  
Case of North Central Region SARE Program**

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**Abstract**

*Accelerating global trends make it increasingly clear that agriculture must become more sustainable to support human survival. The USDA's Sustainable Agriculture Research and Education (SARE) program has for two decades provided grants to increase agricultural sustainability. This paper summarizes survey methodology and results for SARE grant recipients, farmers and ranchers involved in the North Central Region's (NCR) SARE major granting program between 1988 and 2004. Seeking to determine quantifiable impacts of grant-funded projects, results explore: who was involved in conducting the projects; impacts articulated by project leaders and farmer/rancher participants; project spin-offs; instructional materials developed and how information was disseminated; how and to what extent other farmers and ranchers were reached with project results; levels of satisfaction with SARE management practices; changes that project leaders suggest for NCR-SARE.*

Keywords: sustainable agriculture, research education grant program, impacts

## **Indian Country and County Extension: A Comparison of Programs in the University of Arizona Cooperative Extension System**

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**Linda Masters**, University of Arizona

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### **Abstract**

*In the United States, extension service to states and counties manifests a century long tradition where clientele and communities comprehend the role of extension and support it culturally and economically. In contrast, extension on U.S. American Indian Reservations has often been erratic or even nonexistent. Although scientific research comparing Indian Country Extension and County Extension is scarce, anecdotal evidence suggests that there may be significant differences in how a program must be prepared and presented in order for it to be successful and accepted and by an American Indian audience. A qualitative study conducted on five Indian Reservations within the Arizona/New Mexico region looks at distinct cultural, historical, and geographic characteristics, including differences in tradition and culture, learning styles, health, and politics. Each of these characteristics and differences may influence the acceptance and success of traditional extension programming efforts on U.S. American Indian reservations.*

Keywords: Indian country extension, county extension, cultural learning styles

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**Internationalizing University of Florida IFAS Extension - Developing and Implementing an Innovative Horticulture Extension Program in Costa Rica**

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### **Abstract**

*University of Florida Extension and EARTH University faculty developed and delivered their first training program for landscape management in Costa Rica. EARTH University's new LaFlor Campus near the Pacific coast area is similar to Florida in that the region is experiencing rapid growth in tourism development. Stresses of growth, decreased water quality and quantity, and misuse of horticultural chemicals impact the local economy and environment. Extension faculty sought to provide informal training for landscapers, ornamental producers and homeowners. Two concurrent seven-week multidisciplinary educational programs were presented in early 2008. Seven county Extension faculty each spent two weeks at LaFlor preparing and presenting the two concurrent training tracks. Faculty rotated in and out each week for program continuity, developed course materials, and taught lessons in Spanish. The "Master of Gardens" tract was designed for nursery and landscape professionals. A "Gardeners of Costa Rica" tract focused on homeowners and ecotourism personnel. Curriculum was similar to University of Florida IFAS Extension Master Gardener programs. Participants learned about best management horticulture practices suitable to dryland tropics, then practiced concepts with hands-on exercises including the installation of demonstration gardens. After seven weeks a graduation ceremony was held and 47 participants received completion certificates. Pre/post test data indicate improved test scores of up to 61 points on concepts taught. Follow-up activities including enhancement of a website are on-going. Materials developed will be used for Florida Spanish-speaking audiences. The programs also provided an international experience for faculty to broaden their knowledge of different environments and cultures.*

Keywords: Extension, Horticulture, Partnerships

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**A Case Study of Capacity Building: Adapting and Applying E-Learning in Afghanistan**

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**Abstract**

*The purpose of this case study is to share how e-learning is being used as a capacity building tool in Afghanistan through the PEACE Project, short for Pastoral Engagement, Adaptation and Capacity Enhancement (<http://www.afghanpeace.org>) (USAID, 2006). The PEACE Project is building capacity through the use of new technologies within its broader objective of helping Afghanistan to improve livestock production and manage its rangelands. The infrastructure and support provided by the government's initiatives has provided an ideal setting for the PEACE project to collaborate with Afghanistan's universities and government institutions to build capacity. The case study reveals characteristics and qualities of Afghans that were considered when adapting and applying e-learning as a medium for delivering training on Near Infrared Spectroscopy (NIRS) technology to analyze livestock fecal samples. The authors strive to raise awareness regarding the setting in which e-learning is being used to build capacity and share techniques that were implemented to encourage success. Detailed descriptions of how interactivity and supporting materials were interlaced to enhance the educational experience are included.*

Keywords: capacity building, e-learning, training, NIRS, Afghanistan

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## A Comparison of Small Scale Farming in Barbados, Dominica, and Trinidad and Tobago

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### Abstract

*In this paper, the authors compare current small scale farming systems among three Caribbean nations - Barbados, Dominica, and Trinidad and Tobago. They then address the Extension education challenge in the future. Small scale farming is an established concept among food production systems throughout the developing world in which the production system is a mix of food crops and sometimes small livestock. The small scale producer in these islands must meet expectations in a changing agrarian environment of reduced Gross Domestic Product from agriculture, yet the small scale producer is still a resilient member of the food production system. Small scale operations are more practical and experience varying levels of efficiencies given local conditions and constraints. The purpose of this study was to investigate the relationship between small scale producers and the agricultural sector in the nations under study while the said producers maintain economic and social independence. Given the trends in Extension systems for developing countries, the authors conclude that the state must still play a role in financing the Extension systems for small producers. Given current advocacy to multi-faceted extension systems, the authors recommend the use of appropriate system options for the small scale farmer with support from the state.*

Keywords: small scale farming, Barbados, Dominica, Trinidad and Tobago, multiple approaches