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**Association for International Agricultural and Extension Education
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Professional Paper Presentation Abstracts**

Editor's note: The following abstracts are listed by thematic categories, with the lead author's last name listed alphabetically. They were derived from professional papers presented at the 27th Annual AIAEE conference.

Agricultural Communication

**Communication Factors Affecting African Policymakers'
Decisions about Agricultural Biotechnology**

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The purpose of this study was to develop a model for impacting decisions on agricultural biotechnology practices in food production among African policymakers. The research focused on three African countries: South Africa, Malawi, and Ghana. Taking into consideration the different stages and levels of engagement in biotechnology, the researcher assumed these countries were representative of the current heterogeneous environment of Africa regarding biotechnology adoption. Policymakers, primarily government officials, civil servants and activists, journalists, business leaders, religious leaders, farmers' leaders, and extension workers responded to the study. From a total of 174 respondents, 69 were from Ghana, 76 from Malawi, and 29 from South Africa. The research instrument entitled "Communication Factors Affecting Africa Policymakers' Decisions about Agricultural Biotechnology" was designed to measure understanding, knowledge, and perceptions of agricultural biotechnology. These three important constructs were measured along with African policymakers' worldviews and values (moral values, labeling, regulation, consumers' rights, willingness to pay); information sources (interpersonal, print, and electronic forms); and socio-demographic characteristics (gender, age, education level, occupation, geographic location).

The results produced significant differences in policymakers' understanding of biotechnology, perceptions about biotechnology, and attitudes when compared by country of origin. Respondents from Malawi had significantly less agricultural biotechnology knowledge, held significantly more negative perceptions about agricultural biotechnology, and held significantly less positive attitudes about agricultural biotechnology than did respondents from Ghana or South Africa. No significant differences existed in policymakers' understanding, perceptions, or attitudes toward biotechnology when compared by gender. Significant moderate positive relationships occurred between worldviews and values, and understanding, and attitudes. These associations suggested the existence of some level of complementarities between worldviews and values, and understanding, and attitudes of African policymakers toward biotechnology for agricultural development. Other findings showed significant moderate associations between education level and worldviews and values, and low positive associations between occupation and worldviews and values, understanding, and attitudes toward biotechnology. However, no significant associations occurred between the dependent variables and gender or country of origin. In conclusion, the study showed that a critical gap exists in the

understanding of biotechnology between policymakers in Africa. Educating the African public in general and those of low educational backgrounds in particular, is strongly recommended. Taking into consideration the differences in understanding agricultural biotechnology, it is further suggested that a need exists to adopt a target group approach in educating Africa policymakers about biotechnology. A final recommendation is for the need to develop close collaboration between university scientists and mass media professionals as a means for raising the public's levels of trust for media, as well as access to university scientists by the societies which they serve.

Distributing Emergency Animal Health Communications to Under-served Non-commercial populations: A Case Study of the Animal Health Network

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Diffusion of information is a critical function of Extension that is not limited by geographic boundaries. In fact, at a time when the world is experiencing increased incidences of terrorism and terrorist threats, the diffusion of time-sensitive, critical, animal health information is of utmost importance. Extension is often seen as the entity that can provide the linkage between scientific information and the clientele to be served. The purpose of this case study was to share the process by which an emergency animal disease communication network concept for non-commercial, small, and hobby livestock and poultry owners was developed. The case study provides the reasoning behind the establishment of the Animal Health Network along with the processes that have been put in place to make it a reality, including determining the need for the network and methods used to encourage diffusion. The Animal Health Network concept evolved from a 2006 needs assessment conducted in three [state] regions by the National Center for Foreign Animal and Zoonotic Disease Defense (FAZD Center), a Department of Homeland Security University Center of Excellence.

The needs assessment identified the primary source of information for non-commercial livestock and poultry owners (NLPO) as word of mouth from trusted individuals, feed retail owners, and local Extension educators. Further, feed retail owners were identified as the most common conduit for communicating animal health and nutrition topics with NLPO in urban and rural settings. A recommendation of the needs assessment was the creation of an emergency education and communications network utilizing the Extension system and local feed retailers to deliver timely and accurate animal disease related alerts and information from the state animal health or public health veterinarian to NLPO. During Spring 2007 and Fall 2008, six 1890 Land Grant Institutions led the pilot test of the Animal Health Network concept in their states. The pilot test gathered feed retailer demographics pertaining to their potential outreach to NLPO to estimate the Network's potential impact; as well as perceptions of Network utility, animal disease-related information sources, and recommendations for improvement from Extension Administration, county Extension educators, State Veterinarians, and feed retailers to guide the development of a diffusion model and resource kit for the Animal Health Network. During December 2009 through March 2010 the Prototype Resource Kit was pilot tested during the mandatory state-wide adoption of the Animal Health Network in [state]. Lessons learned during the [State] Pilot Test were gathered via personal interviews and guided the redesign of the

Resource Kit into an Animal Health Network website. Appropriate communication strategies are critical to reach under-represented clientele of NLPO, especially in regard to animal health emergencies. It is the hope of the authors that by sharing the background of the Network concept, others in the international Extension and education community can benefit through use of the Network concept as a starting point for their own initiatives.

Developing and Implementing a Subscription Management System for Extension Clientele

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Extension is a partnership between state, federal, and county governments to provide scientific knowledge and expertise to the public. Printed newsletters and Extension bulletins are proven ways of disseminating current information to our audiences. With decreasing budgets and the increased use of the internet for information, Extension faculty had to find a way of delivering information to large groups of people. The Subscription Management System (SMS) was developed to meet Extension's need to provide faster and better service to their audiences. SMS allows the user (Extension clientele) to subscribe to a variety of local or region-wide newsletters and information on topics of agriculture production, environment, families and consumers, lawn and garden, sustainable living, and 4-H youth and volunteer development. Clientele can subscribe to newsletters, select specific topics for Extension workshops and seminars or receive Extension bulletins in which they have interest.

Clientele receive an e-mail announcing when the Extension newsletters are posted to a website or when Extension programs, workshops or demonstrations will be presented. If registration is limited, SMS subscribers will have an advantage since they will receive their notifications electronically versus other traditional methods. Along with email notifications, SMS allows users to sign-up to receive information via text message. SMS has been successfully developed and implemented in one Extension District. Changing every day, the system contains 89 newsletters and topics, and 28 Extension faculty have advertised 108 program announcements with messages sent to 55,765 clientele contacts. SMS has 13,014 total subscribers using the system to receive new knowledge provided by Extension. SMS has the capacity to deliver electronic mail messages, cell phone text messages, and printing of clientele address labels for clientele without electronic delivery capacity. SMS text messaging is the fastest means possible to inform our clients of pest or disease outbreaks. Instant notification of problems can help save crops, reduce costs and increase profit. If clientele do not have email or text messaging an option for printing. Mobile web applications will need to be developed to compliment the SMS and web based authoring systems introduced to enhance newsletter and extension bulletins utilized by Extension Faculty. Extension faculty time dedicated to design and teach other faculty and staff about using the system and programming time for software development were a major component of the resources needed. The software to make it all work was developed using Java and a Microsoft SQL (Structured Query Language) Server which runs as a database for the clientele side and the Extension information side of the web-based processes.

Collaborative Linkages

Extent and Potential of Collaboration between Agriculture Teachers and Extension Workers for Dissemination of Agricultural Information to Rural Communities for Sustainable Development

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The purpose of the ex post facto study was to explore explanatory variables associated with the extent and potential of collaboration between agriculture teachers and extension workers for dissemination of agricultural information to rural communities. The study was based on the hypothesis that collaboration between institutions plays a significant role in the formation of an agricultural knowledge and information system that draws on both modern science and farmers' indigenous knowledge, which will improve information dissemination. The target population of the study was all agriculture teachers and extension workers employed by government. Data were collected using a valid, reliable questionnaire which was self-administered. Descriptive statistics of frequencies, means, and standard deviations were used to describe data. Correlations coefficients were also used to describe relationships and regression analysis was used to determine explanatory variables for dissemination of agricultural information. Findings revealed that the variables that explained information dissemination were: methods used for disseminating agricultural information, collaboration between institutions, level of education of teachers, extension workers and farmers, work experience, number of clientele, funds to purchase information dissemination materials, policies guiding operation of teaching, and extension and in-service training. The conclusion was that dissemination of agricultural information can be enhanced by collaboration between institutions involved in agricultural development. The Ministries of Education and Agriculture should come up with a Memorandum of Understanding on how agriculture teachers and extension workers should collaborate for dissemination of agricultural information.

Predictors of Knowledge-sharing Behaviors among Community-based Natural Resources Organizations in the Okavango Delta, Botswana

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Communication of information about natural resources and the environment is becoming an essential component in all aspects of sustainable development. Information diffusion interventions have often relied on the use of agents to disseminate information to their constituents, mainly agricultural innovations. Research related to knowledge-sharing behaviors is scarce in environmental/natural resources communication literature, though it abounds in other disciplines, such as organizational management. There is, therefore, a need to explore knowledge-sharing behaviors in the field of environmental communication. This article presents research results conducted to examine the relative contribution of selected predictors of knowledge sharing behaviors in explaining knowledge-sharing among the community-based natural resources management (CBNRM) leaders in the Okavango Delta, Botswana. The study was guided by theory of reasoned action and responsible environmental behavior model

framework. The constructs explored, drawn from the two theories; knowledge, beliefs, attitudes, locus of control and intentions, were used to conceptualize a research model. While the responsible environmental behavior model posits knowledge to be a product of three knowledge domains, the study proposed an additional fourth knowledge domain: traditional ecological knowledge (TEK). TEK denotes socio-ecological knowledge, practices, and beliefs accumulated by communities over time through adaptive process and transmitted culturally across generations.

One hundred and twenty subjects, representing 13 CBNRM Boards, participated in the quasi-experimental study. Subjects completed a retrospective-pretest instrument after exposure to an experimental treatment – presentation of an environmental issue. Data was analyzed using multiple regression statistical procedures. Findings show that the three immediate predictors; knowledge, locus of control, and attitudes accounted for 46.3% of the variance in the knowledge sharing behavioral intention. Knowledge and attitude had an equal relative importance in the prediction of behavioral intention, with locus of control exerting the least influence. Among the four knowledge domains, skill knowledge has the strongest effect, followed by issue knowledge. The results indicate that attitudes towards knowledge sharing, knowledge of the subject matter, mainly factual and skills, have important effects in the promotion of knowledge sharing behaviors. Based on the findings, an effective information-diffusion intervention targeting agents should focus on promoting favorable attitudes and beliefs towards knowledge-sharing among agents, as well as focusing on equipping the agents with both factual and skill knowledge.

Are Participatory Extension Projects Sustainable?

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The failure of top-down transfer of technology, popular in western culture extension programming, is shared by many cultures in numerous countries around the world (Chambers, 1994; Toness, 2001; Tuttle, 2003). This top-down approach relies on information from universities being passed down to extension educators and then to indigenous communities with little to no recognition of local culture or indigenous knowledge. In contrast to urban, western lifestyles, the lives of many rural, indigenous peoples are often guided by deep-seated cultural and social systems that developed over many generations and which impact their daily life choices. (Tuttle, 2003; den Biggelaar, 1991). When this indigenous knowledge is overlooked or ignored by extension educators, affected clientele may not take ownership of extension program information, resulting in failure to adopt technologies that have little meaning in their traditional lives (Focus group interview, 2010; den Bigelaar, 1991). In response to these failures, extension educators, worldwide, have begun to incorporate participatory education methods that value indigenous knowledge and include local people as an integral part in the design and delivery of extension education. The authors/researchers of this project sought to answer the question: Are participatory methods of extension education sustainable, and can they help extensionists make their programs applicable and successful?

The researchers used qualitative research methods to conduct this study, employing triangulation of data. They conducted an extensive literature search and included the following data sources: 23 research articles, a dissertation, a 3 hour focus group interview, and an essay written by an indigenous extension practitioner with 27 years of experience. Research results showed that many barriers to participatory methods exist. These barriers included: extension systems that promote inappropriate, top-down transfer of technology; dependence on government or other social systems that debase project efficiency and sustainability (Grudens-Schuck, 2001); lack of infrastructure in remote rural areas (Focus group interview, 2010; Grudens-Schuck, 2001); high cost of participatory programs that are time and resource consuming; and the idea that rural and indigenous populations are not able to diagnose their own needs and are not capable of initiating their own development strategies. In spite of these barriers, many opportunities do exist for participatory extension education aimed at rural, indigenous clientele. Results from participatory projects are encouraging, especially when extensionists work patiently to design participatory programs with their local populations as co-learners and co-researchers, and when extension educator goals reflect the reality of the communities with which they work. When indigenous participants play a key role in design, planning, delivery, and evaluation of programs, then participatory methods can increase the adoption of new technologies. The literature contains numerous examples of successful participatory projects in a variety of cultures in several countries around the world. The authors concluded that this developing approach will result in sustainable programs and the successful transfer of knowledge by extension educators employing these techniques. Local communities will gain from implementation of new technologies while the use of participatory approaches will assist extension educators to be successful when introducing and incorporating new ideas into indigenous cultures.

Community Development

The Application of the Tractorette Program to Current Agriculture Education Efforts in the Developing World

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Borrowing from time-tested approaches to learning, this presentation examines applications of the agricultural education effort during World War II (the Tractorette Program) to education of producers in the developing world. This research analyzes visual communication approaches to the educational experience and explores how learners of a diverse literacy level learn successfully when exposed to visuals and hands-on techniques. The social implications of educating primarily urban females to assist in the day to day production of agriculture produced during the war and its relationship to education of women and men in developing countries to utilize and adopt appropriate production agriculture and food handling techniques are explored. The connection between the cooperative approaches by Extension personnel, implement companies, and volunteers to address a need in the developing world is highlighted. A theoretical framework for visual-based teaching and learning and adoption of new methods is included. A comparison with current Cooperative Extension programming efforts and the importance of visual based, technology enhanced and hands-on learning experiences to the learning environment are addressed.

Factors Explaining Sustainability of Agricultural Development Projects Implemented by Nongovernmental Organizations in Swaziland

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The purpose of the study was to determine factors that explain sustainability of rural agricultural development projects implemented by Non-Governmental Organizations (NGOs) in Swaziland. The study was ex post facto and used regression procedures to explain the amount of variance the main and rival independent variables/factors contribute to the dependent variable, sustainability of the rural agricultural project. The findings failed to reject the main hypothesis that participation of project members explained the highest variance in the sustainability of agricultural projects. This was followed by project ownership by members, and leadership in the project. The researchers reached the conclusion that for optimum development of human resources, project designers first and foremost need to nurture participation in the project, project members' ownership of the processes in the project stages, and project leadership, in order to get to greater sustainability of projects. This would, therefore, help to achieve members' food security, reduce poverty, and decrease environmental upkeep. Recommendations include: extension service using leadership in projects, to make their work effective and efficient, and also linking project members with sources of funds and capacity-building partners aside from the NGO with whom they worked. The study has implications for education and extension in agriculture: which is that educators and extension officers need to be trained more on being advisors on, and facilitators of, information and innovations flow.

Ethnography to Evaluate the Ability of Community Markets for Conservation to Establish Food Security and Increase Household Income for Small-scale Producers in the Luangwa Valley of Zambia

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Community Markets for Conservation (COMACO) is an emerging non-profit company in Zambia that is pioneering an innovative way for making markets and conservation work together. With a deteriorating economy, Zambians are in need of sustainable agriculture that promotes food security and wildlife conservation through education and empowerment. The purpose of this study was to evaluate the effects that COMACO is having on the social, economic, and environmental conditions of residents in the Luangwa Valley of Zambia. A qualitative ethnography approach was employed as the methodology. The research includes personal interviews, observations, and experiences from a three week service-learning project in the Luangwa Valley sponsored by the National FFA Foundation with funding from the Howard G. Buffett Foundation. Researchers documented their experiences in journals and field notes. The founder and CEO of COMACO, along with employees, local residents, COMACO

producers, and non-COMACO producers were interviewed to provide researchers with an overview of the COMACO model. Researchers found that COMACO is training local producers in conservative production practices that are producing higher yields with less erosion and soil depletion. In addition to farming practices COMACO educates local producers in human health practices, HIV/AIDS prevention, sanitation practices, and better living strategies. COMACO is actively tracking its producers' farming practices and recording yearly yields for each producer. The results indicate COMACO is promoting food security by using sustainable agricultural production methods. Food security leads to an increase in household income, which leads to higher education for local children. The COMACO model is a valuable tool for distributing information from management to individual producers as well as collecting performance records on specific crops and practices. COMACO's local organizational structure enhances livelihoods and skills while encouraging ownership. It should be noted that the researchers had limited access to information about factors that impact the long-term viability of COMACO and its supplemental funding strategies. The observations in this ethnography do not allow judgments to be made about the sustainability, scalability, or successful replication of the COMACO model. Because qualitative researchers use small, non-random, purposive samples, it is statistically difficult to generalize beyond the sample. However, findings of the qualitative study can be useful in exploring international agriculture and extension education from a development perspective. The study provides an example of the effects agriculture and extension can have on low income areas.

An Analysis of the Agricultural Sustainability of Small-Scale Farms in Lacluta Sub-District of Timor Leste: A Comparison of Internal and External Perspectives

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The sustainability of Timor Leste's traditional agriculture and its ability to meet the needs of the population is being reassessed. Government agricultural policy is being rewritten and development agencies are beginning to incorporate agricultural sustainability into their programs. However, these efforts are often stymied by insufficient information on Timorese agriculture, particularly data generated with local input. This study seeks to analyze the agricultural sustainability of the small-scale household farms in Lacluta sub-district of Timor Leste. Current agricultural practices were identified and assessed for sustainability, and farmers' perspectives on sustainability were established. The results identify specific priorities for development efforts. Agricultural sustainability was conceptualized as having four domains: (Agronomic/Production, Economic, Environmental, and Social/Basic Human Needs) which were measured by individual indicators that could be summated into indices. Subsistence farmers in Lacluta (n=50) were interviewed to produce both quantitative and qualitative data. After summating the indicators into indices for the four dimensions, agricultural sustainability of Lacluta was found to be moderate. The region's overall sustainability score was 0.42 on a scale of 0 to 1. A wide variance between the sustainability scores of the four dimensions was found. Subjects averaged 0.64 on the Social/Basic Human Needs index, 0.42 on the Agronomic/Production index, 0.40 on the Economic index, and a much lower 0.20 on the Environmental index. Farmers identified insect pests, rats and mice, and lack of soil fertility as the top three production problems faced, and identified tractors, improved seeds, and general capacity building as their three largest production needs. Subjects continue to practice shifting

agriculture at high levels (78%), while only 46% used some form of planned soil improvement. Data also showed a low ratio of staple crops produced to purchased crops (0.3-0.5 units produced for each unit purchased). The findings of this study address a dearth of research and identify specific areas requiring greater sustainability. Dimensions and sub-dimensions scoring low should be priority areas, and particular emphasis should be placed on incorporating environmental sustainability into agricultural development. This will produce a better resource base which will ultimately improve production, economics, and social factors.

**Cross-sector Collaboration for Agricultural and Rural Development:
A Case Study of Nonprofit-Government Partnerships in Vietnam**

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Collaborative projects between international nonprofits and local governments have made increasingly important contributions to the goals of agricultural and rural development in developing countries. Yet few studies have examined these cross-sector partnerships, especially in terms of how sector-based characteristics may present simultaneously both opportunities and challenges and thus demand trade-offs from each partner for effective collaboration. This study contributes to filling the gap by examining the challenges that an international nonprofit encounters—from the perspective of the nonprofit itself—in its partnerships with local governments in rural Vietnam. The researcher adopted a qualitative case-study approach, employing personal, semi-structured, and in-depth interviews with eight Vietnamese staff working in the Program Division of a U.S.-based nonprofit in the Mekong River Delta, Vietnam. The data were collected during June-July 2010 and analyzed using the software package ATLAS.ti. Emerging from data analysis were four themes and pairs of subthemes: 1) Political influence: top-down vs. bottom-up approach in selecting governmental partners; 2) Partner types: professional organizations vs. mass organizations (both are governmental institutions); 3) Work incentives: financial motivation vs. mission dedication; and 4) Program expectations: holistic community development vs. household economic improvement. Respondents embrace similar, as well as divided perspectives, concerning these themes, which they consider crucial elements determining the effectiveness of their partnerships. Respondents as a whole recognize both the advantages and disadvantages that each theme entails, but they diverge in their interpretations and then approaches to solutions. The case study provides knowledge and insights into the intricacies of cross-sector partnerships, especially partnerships between international nonprofits and local governments in developing countries. For public leaders working in the field of agricultural and rural development, the study can provide lessons for strategic project management in cross-sector collaboration, assisting them in making decisions to minimize constraints and maximize opportunities in collaborative environments.

*Extension Methods***Demonstration Trains and their Potential Educational Use in the 21st Century****Michael L. Basinger**, University of Wyoming**Steven D. Aagard**, University of Wyoming

Demonstration trains have a history of effective learning in the area of agriculture, animal husbandry, home economics, and other areas of adult and community education. In the United States and Australia this venue was employed a century ago prior to the development of other education delivery infrastructure. In the twentieth century, demonstration trains were employed in Europe and the Indian Subcontinent for cultural and scientific education. In the twenty-first century they have been used in Africa for medical treatment and health education. This paper explored the practical potential for the expansion of public education and resources along train lines in developing nations. While the potential of rail logistics and supporting infrastructure was be discussed, the primary focus will be on the philosophy of creating or expanding rail-born education and support in rural areas to encompass multiple educational foci. Adult educational theory was examined in relation to the rail-born classroom and hands-on clinic model. In particular, the efficacy of integrating multiple development topics and experts in a single venue was explored. Included in the analysis were the advantages of accessible in situ demonstrations and technology, a holistic and integrated approach to a host of related community issues, the role model importance of in-person expertise, the opportunity to provide praxis opportunities and timely hands-on feedback to learners, and the importance in rural environment of community – rather than just individual – learning events. The methodology used audiovisual and written examples of demonstration train projects as a matrix for examining the practical potential for this media, in the context of adult learning theory and philosophy. The findings were that demonstration/learning trains represent a practical opportunity for rural education, which can integrate a variety of community concerns in ways that are consistent with the best philosophy and theory of adult learning. This confluence of subject matter may include health, agriculture (with supporting disciplines), technological competence, infrastructure development, communication, and methodologies for community cohesion and self-sufficiency. These aspects of the demonstration trains of the past are important today in a developing world with a host of literacy levels.

Introduction of Modernized Relic Technology for Sustainable Agricultural Practices in Mali: Strategies, Challenges, & Opportunities — A Case Study**James W. Hynes**, Sam Houston State University**Theresa Pesl Murphrey**, Texas A&M University**M. Craig Edwards**, Oklahoma State University

International agricultural development requires consistent effort, trust, knowledge, and a plan. This case study shares the story of development efforts in Mali, Africa focused on the use of modernized relic technologies, as an innovation to facilitate sustainable agricultural practices through capacity building, in order to meet identified needs. A series of activities were conducted that included: 1) on-site visits in Mali for extensive listening sessions and interviews with farmers, agricultural systems specialists, educators, and cognizant government officials, 2) recruitment of United States faculty members to travel to Mali to exchange ideas, 3) recruitment

of Malians to participate in an intensive training program held in a southern Indiana Amish community, and 4) recruitment of Amish manufacturers of modernized relic technology to serve as long-term trainers of Malian farm equipment manufacturers. The educational importance of this case study was reflected in the training required to enable sustainable community development. This project built on the Malians' indigenous knowledge and skills using scale appropriate equipment, and encouraged the establishment of self-sustaining cottage industries to serve communities. The project has benefited Mali by introducing a different approach to food production, using existing animal power more efficiently as a substitute for growing crops by hand or by fossil fuel-powered machines. It is also important to recognize that opportunities exist for United States farm equipment manufacturers to help create new markets for their products, while at the same time training Mali's manufacturers. Efforts are underway to secure funding to support the training needs described.

The Evolution of Extension Research and Education Methods from Colonialism to Participatory

Linda Masters, University of Arizona

Sabrina Tuttle, University of Arizona

Under colonial rule, indigenous educational programs were rarely an attempt to assist the subject people with their own issues, but instead, were a systematic approach to change their lifestyle to mimic that of the dominant western culture. In later years, when some colonial governments introduced well-meaning educational programs or economic improvement projects intended to help indigenous people, these programs were still based on European cultural models with no regard or respect of indigenous ways-of-life. Research by Bray (1993) showed that schools were primarily designed "to meet the conceptions and needs of the colonizers rather than the colonized." This approach influenced the amount, type, and availability of education to indigenous people. In many cases, limited access to educational information was intentionally implemented in order to maintain social inequality between the colonial rulers and the conquered indigenous people. The goal was modernization at the expense of, or at least, with little regard for, traditionalism.

Even into the 20th century, extension transfer-of-knowledge was based on the belief that "scientists know best, new technology is better than old, technology is needed, innovators will transfer information to laggards and many people are not information seekers" (Chamala 1999). Eventually, researchers and educators working with indigenous populations began to realize that failures of their programs could be attributed to the lack of participation by local communities and the omission of traditional knowledge and cultural expression in program planning and implementation. The failure of extension programs within indigenous communities suggested that agriculture extension services were no longer adequate to meet the needs of rural and indigenous farmers. By the 1990s, a new participatory research and educational approach began to be implemented in several countries around the world. This method actively includes indigenous community members in; the identification of program needs, development and implementation of research or education programs, and evaluation of outcomes. In the past 20 years, use of participatory methods has become increasingly prevalent in extension efforts. The primary idea is that "community ownership and empowerment are crucial in supporting and effecting change" (Beilin 2001).

*Extension Reform and Strategies***Needs Assessment and Strategy Building for Survival of
Drought Shock Events in the Tigray Region of Northern Ethiopia****Ryan Collett**, Texas A&M University**Gary Wingenbach**, Texas A&M University

The highland Tigray region of Northern Ethiopia has historically suffered significantly from drought shock events. These events, coupled with considerable soil degradation, have left a severe impact on the agricultural output and community survival of the region. The purpose of this qualitative study was to determine how future interventions can better serve the drought related needs of smallholders in Tigray. The study comprised two objectives: 1) Identify the principal needs of smallholder communities in Tigray to survive and thrive through drought shock events; 2) Facilitate sustainable strategy development toward alleviating drought effects with the regional center of higher education, Mekelle University.

The researcher traveled to Tigray, Ethiopia and used a combination of Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) techniques which utilized focus group discussions and activities to assess community-level needs. Interviews with Non-Governmental Agencies (NGOs), Ministry of Agriculture and Rural Development (MARD) employees, and Mekelle University faculty and staff contributed institutional perspective on drought survival. The collected data was analyzed categorically into areas of needed capacity improvement. These areas included extension and agricultural education, institutional memory, soil and water conservation, alternative income generating activities, livestock husbandry and feed availability, and women headed households' small business capacity. Short term solutions have not historically been sustainable for lessening the effects of drought in Tigray. However, this research shows that long term and carefully planned interventions, focused on the assessed smallholder need categories, may have substantial positive impact for the future. While drought is not the sole cause of poverty in the region, alleviating the negative effects of drought is a necessary step toward ending the cyclic poverty traps which hamper the lives of smallholders in Tigray.

**Agricultural Development Assessments and Strategies in Post-Conflict Settings:
An Empirical Case Study of Eight Southern Iraqi Provinces****James Hafer**, Chief Dull Knife College**Glen Shinn**, Texas A&M University**Gary E. Briers**, Texas A&M University**David Lawver**, Texas Tech University

This research was an empirical case study of post-conflict agricultural development assessments and strategies in eight southern Iraqi provinces. The purpose was to synthesize emergent themes, trends, and lessons learned from aggregated agricultural development reports and documents related to post-conflict needs assessments. Using a systems-approach, the goal was to improve Iraqi agricultural practice, extension and training, community development, security, and policies for governance. Three objectives were identified to achieve the purpose of this study: 1) identify emergent agricultural development themes from each of the eight Iraqi

provinces; 2) identify emergent agricultural development trends; and, 3) provide relevant case documentation to assist in future agricultural development/post-conflict development efforts. The case study method fit the criteria of the research design. Grounded theory and sensitizing concepts guided the conceptual framework. Using qualitative and quantitative techniques, particular attention was given to agricultural specialties, technical and social knowledge systems, and data collection and analysis protocols. Data collection, analysis, and theory stood in reciprocal relationships. This study recognized three limitations, one delimitation, and four assumptions. Original data were collected as interviews, field notes, final provincial reports, and after-action reviews between June and December 2008.

A series of SWOT analyses within this case revealed eight provinces with four impending strengths, five weaknesses coupled to a plethora of subsumed issues, 15 opportunities, and eight threats to sustainable agricultural and post-conflict developmental efforts. It was found that Iraqi agricultural production lags due to many technical, educational, economic, social, and system factors. Promising practices hinge on the application of proven theories in guiding development and sustainability. Maslow's hierarchy of needs is fundamental in sequencing sustainable development and facilitating receptivity to change. Roger's diffusion of innovation theory guides the use of opinion leaders in the adoption and diffusion of innovations. Six general principles emerged from the case analysis of the post-conflict assessments: 1) shared ownership and responsibility are essential; 2) systems-thinking must recognize cultural values and norms; 3) all efforts must be complementary and cooperative; 4) short-term effort must lead to long-term strategies, 5) guard against developing dependency through aid; and 6) integrated theory, policy, and practice will more likely lead to sustainable value chains for food security and economic development in post-conflict environments. With a median age of 20.4, it may be that largest threat to the future of Iraq is not violence, but the diminishing hope of young people caused by their inability to obtain vocational-based skill training and the lack of jobs that match such skills. A pervasive lack of job opportunities, a perceived lack of job availability, and persistent poverty promotes civil unrest with the possibility of insurgency. An aggressive youth development focus on strengths and opportunities will have a positive impact in the current society.

The Sasakawa Africa Fund for Extension Education's (SAFE) Initiative to Serve Rural Populations in Africa through Supervised Enterprise Projects (SEPs): Graduates' Perceptions of Opportunities and Constraints Related to Using SEPs in Mali

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The performance of Extension educators in Sub-Saharan Africa, especially those who work with smallholder and subsistence farmers, has been questioned by many observers (Kroma, 2003; Owens, Zinnah, Annor-Frempong, & Obeng, 2001). Calls to provide these educators with significant professional development opportunities are pervasive. To that end, this study assessed the perceptions of 50 mid-career Extension professionals who had completed the SAFE training program in the Republic of Mali regarding their training experience with Supervised Enterprise Projects (SEPs) as a tool for serving their clients. SEPs link theory and practice and highlight learning by experience. Through the SEP approach, Extension educators develop and implement projects with farmers under the supervision of faculty from colleges and universities, as well as their employers. The study followed a triangulation mixed methods design (Creswell, 2005),

which included using a survey instrument and conducting semi-structured focus group interviews (Krueger, 1994) to collect data. Triangulation of the findings revealed that the graduates' overall SEP experiences were positive and useful. However, some issues and concerns emerged, including cost, supervisory practices, and standards regarding project reporting and thesis writing. The researchers concluded that the SEP experiences needed systematic financial support, more effective supervision, a standardized reporting format, as well as the trainees networking with potential funders. Moreover, trainees should secure the commitment of beneficiaries (i.e., their clients) to endorse contracts with microloan agencies guaranteeing the repayment of loans supporting SEPs. The study's design allowed the investigators to crosscheck their data thus strengthening the validity of the investigation's findings.

An Assessment of the Sasakawa Africa Fund for Extension Education's (SAFE) Training Program in Mali: Graduates' Perceptions of the Training's Impact on Their Professional Performance and Their Clients' Practices

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This descriptive study included 50 mid-career Extension professionals who had completed the Sasakawa Africa Fund for Extension Education (SAFE) training program in the Republic of Mali (West Africa). The study assessed perceptions of SAFE graduates regarding the training's impact on their professional performance and related behaviors of the graduates' clients. A survey instrument was used to collect data. Participants perceived the training had a significant impact on their overall professional competence, and that the knowledge they acquired increased their effectiveness and satisfied their training needs. All of the graduates were upgraded to an advanced job category after completing the training. Nearly two-thirds indicated they observed changes in their clients' practices attributed to the SAFE training.

A Comparative Analysis of General Agricultural Extension Models and a Conceptual Goodness of Fit for Cameroon

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During an era of nation-building in the United States, Thomas Jefferson said, "If a nation expects to be ignorant and free, in a state of civilization, it expects what never was and will never be." Faced with many challenges and in need of a catalyst for economic, social, and political development, early statesmen recognized the need for extending practical knowledge and technologies to all citizens as an essential method for development. This approach created the tripartite agricultural education, research, and extension services and has been instrumental in ensuring food security, economic development, and sustainability. Many African countries are in various stages of nation-building and facing monumental challenges, including meeting the United Nations Millennium Development Goals (MDGs). Progress toward achieving the MDGs has been slow, and it varies among nations across the continent. In Cameroon, some MDG progress has been made, but an effective catalyst is needed to move forward. There is general

consensus among policy makers that priority should be given to the agriculture sector, especially to production of high-value food crops. This sector has received little attention for improvement in Cameroon even though the country is endowed with natural resources, and is only one of few nations in sub-Saharan Africa with substantial potential for growth, profitability, and sustainability in the agriculture sector.

While improvements are needed throughout the value-chain, the development of human capital associated with agriculture is the most valuable resource and a catalyst for sustainable growth. An evaluation of the strengths, weaknesses, opportunities, and threats (SWOT) of agricultural extension models revealed why some models succeed and others do not. The purpose of this investigation was to analyze selected extension program models and strategies from various countries in an attempt to identify aspects that might be successfully adopted by the agricultural extension services in Cameroon. A SWOT analysis achieved through directed training, field visits, and participatory appraisal techniques revealed various models including: 1) top-down extension, 2) participatory extension, 3) privatized extension, and 4) training and visit extension. The paper concludes with workable pro-poor recommendations that can be used to improve access to appropriate innovations, increase self-reliance, and ensure sustainability. Even though each model had positive aspects, no single model seemed to be totally adequate for the efficient delivery of extension services in Cameroon. This paper identifies and describes the SWOT analysis. The most promising models emphasized and promoted self-reliance and micro-enterprise training as key elements of sustainable value chain agriculture for food security and economic development. It is anticipated that these findings will serve as the basis for development of an improved and more comprehensive agricultural research, extension, and education service in Cameroon, and will serve as a catalyst for achieving the MDGs.

Information and Communication Strategies

Introducing the Global Rangelands Knowledge System: A Web Portal for Accessing International Rangeland Management and Extension Resources

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With funding from the USDA/NIFA International Science and Education program, a collaboration involving members of the Western Rangelands Partnership (University of Arizona, University of California-Davis, and University of Idaho), the Food and Agriculture Organization of the United Nations (FAO), and Rangelands Australia, is in the process of developing a comprehensive Global Rangelands Knowledge System (Global Rangelands). The goal of the new Global Rangelands system is to provide access to international resources on sustainable rangeland management and rehabilitation through redesign and expansion of the current Rangelands West portal (<http://rangelandswest.org>), and through the eXtension Rangelands website. Online services will include 1) a fully searchable international repository of full-text articles, documents, images, and multi-media teaching, learning, and outreach materials on rangeland topics; 2) applications to facilitate expanded knowledge of international work in rangeland research, teaching, and extension; 3) multi-media learning modules on global

rangelands; 4) synthesis documents on aspects of international outreach practices relevant to Extension programming; and 5) a customized search interface that improves access to critical rangelands information and encourages direct user engagement in the Global Rangelands system. This presentation will describe the two-year project, provide a demonstration of the results achieved to date, and discuss such technical aspects as: utilizing open source Drupal software, implementing the AGROVOC controlled vocabulary, determining metadata formats for original and harvested content, and engaging collaborators and stakeholders in the development of the portal.

Creative Immersion Using Second Life for International Experiences: Are Agricultural Students Ready, Willing, and Able?

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A mechanism for students to gain international exposure is critical. International experiences have been documented to increase participants' world-view, increase interest in international activities, and provide participants greater insight into their own communication skills (Place, Vergot, Dragon, & Hightower, 2008). New technologies, such as Second Life™, offer inventive ways to enable students to gain international experiences. In fact, several parts of the real world have been replicated in Second Life. However, technology acceptance can become a barrier to the adoption and successful implementation and use of technologies. Venkatesh, Morris, Davis, and Davis (2003) devised "core determinants of intension and usage" (p. 425) related to technology acceptance and identified this theory as the Unified Theory of Acceptance and Use of Technology (UTAUT). The UTAUT theory serves as the contextual framework for this study. The purpose was to describe agricultural students' technology readiness in an effort to document potential strategies that could be used to implement Second Life as a means to bring about international experiences. The responding sample included 736 students from two institutions of higher education, predominately undergraduates (92%) and female (75.8%). Findings reveal that while Second Life may be seen by instructors as an innovative teaching tool - students do not necessarily share that perspective. Students reported access to resources and knowledge to use Second Life, but reported less agreement with its application in education. Strategies must enable students to see the value in utilizing Second Life in order to succeed in creating valuable, virtual, international experiences.

Computer Use in Rural Central American Schools – Opportunities and Challenges

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Quality of education is a global issue that must be addressed at the local level one teacher at a time. Computer technology training can greatly impact the success of teachers in the public classroom. For public school teachers from rural communities in Nicaragua, El Salvador, Honduras, and the Dominican Republic, this training has the potential to dramatically improve instruction through professional growth of each individual teacher. The purpose of this study was

to describe the effects of computer technology training for public school teachers from mostly rural agricultural communities in Nicaragua, El Salvador, Honduras, and the Dominican Republic. Sixty-two teachers served as respondents in this study through their participation in the USAID program, Cooperative Association of States for Scholarships (CASS). The CASS program, located at Palo Alto Community College in San Antonio, TX, is a yearlong education program consisting of direct teaching sections from the CASS instructors and practicum with the local dual language schools in San Antonio. Computer use training is only one part of the overall CASS program; however all participant experiences are to be blogged. The instrument used for this study contained both quantitative and qualitative questions written in Spanish. The instrument contained three primary components: 1) computer knowledge growth, 2) home country worksite conditions, and 3) participants' future plans. A convenience sampling method was used to gather the subject population. Participation in the survey was voluntary. Instructions for the online instrument were provided orally in Spanish and the participants were given one week to complete the survey. Average survey completion time was 35 minutes. Data were analyzed using descriptive statistics.

The results clearly revealed improvement of computer skills as a result of training. This improvement may be attributed to the program design, with its emphasis on computer training from the beginning and practice opportunity integration throughout the duration of the training. Both quantitative and qualitative data revealed very little, to no technology resources (computers and Internet access) available in home country worksite communities. When asked about students' perceptions of computers, the teachers reported students' feelings of enthusiasm to use computers. The teachers also shared that implementation of computer technology is a critical need in their country's academic efforts. Most all the participants stated that they would share with other teachers and students what they learned during their training in the CASS program. Overall, results from this study revealed that computer training in the CASS program is effective and very much needed by its participants. Upon completion of the program, these Central American teachers become equipped to function as change agents of their worksite communities. It is recommended that further study focus on the effectiveness of the program after training and a longitudinal study focus on the impact of teachers in their communities upon return. It is also recommended that teachers who show potential to effectively train other teachers in their communities should, as a result, be considered by their community leaders as candidates to facilitate the diffusion of computer use for education in their communities.

International and Domestic Linkages

Fostering Valuable Growth for Students and Faculty through Participation in the Belize Field School Program

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The benefit of experiential learning abroad is well documented. The purpose of this paper is to report the results from an on-going study to determine personal and academic growth of students and faculty who participate in the Belize Field School Program (BFSP). The BFSP is a series of 10- to 13-day field study courses which take place in (and directly benefit) the host country of Belize, Central America. A qualitative approach was used to evaluate the Program. Post-course surveys of 70 students and faculty over the past three years were categorized into two main areas of growth: personal and academic, with some professional benefits also

identified. The study was conducted at a U.S. university with students and faculty from the College of Arts and Sciences and the College of Agricultural, Consumer and Environmental Sciences. At that university and elsewhere, the trend for future Study Abroad programs is toward short term faculty-led courses. The results of the study find that the Belize Field School Program fills an important role and fosters valuable growth for students and faculty through experiential learning in the global learning environment. This paper hopes to motivate other universities to develop similar programs at their home institutions as this type of program can enhance curricula and study abroad opportunities.

Attitude toward Travel Destinations among Extension Officers in Trinidad, W.I. and Perceived Barriers to Participation in an International Extension Experience

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Extension professionals can develop global competencies through professional travel. The overall purpose of the study was to understand Trinidadian extension officers' attitudes towards participating in an international extension experience (IEE). The study focused on extension officers' perceptions of the appeal of twenty-two selected locations for an IEE, perceptions of six travel concerns as barriers to IEE participation, and potential relationships between perceptions of location appeal and travel concerns. Respondents did not express a clear preference for one geographical sub-region over another. All sub-regions were considered to be "somewhat appealing" with the exception of Micronesia, which was "somewhat unappealing." Respondents' feelings about IEE participation were mostly independent of any travel concerns. Only a language barrier was perceived to be a potential barrier to IEE participation. Concerns about food-borne illness, disease, terrorism, crime, and unjust government action were not. Respondents were more likely to perceive travel concerns as barriers when considering traveling to all parts of Africa and South-Eastern and Southern Asia. Significant, low negative correlations existed between travel concerns and East Africa, Middle Africa, South-Eastern Asia, Northern Africa, and Southern Asia.

The findings from this study imply that positive behavioral beliefs about IEE participation are held by Trinidadian extension officers. They were open to traveling almost anywhere, which increases their opportunities to be exposed to many cultures. Individual preferences should be taken into account as Extension organizations plan international experiences. Beliefs about the consequences of a behavior – such as potentially becoming a crime victim - are directly tied to whether or not an individual will engage in a specific behavior. More research is needed to understand the relationships between travel concerns and Africa and South-Eastern and Southern Asia, given the demand for multinational extension development work in these locations. Communication was the barrier that participants tended to be most concerned about when considering an IEE. Given that English is the only official language in Trinidad and Tobago, it would seem likely that travel to a country where English is not the primary language would not be preferred. However, extension officers' concerns about communication barriers did not dictate their preference for an international experience. More research is needed to understand why extension officers would modify their concerns about communications as a barrier.

**Adding Value to U.S. Academia by Identifying Best Practices for
Engaging Faculty in International Experiences**

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Amy Harder, University of Florida
Nicole Stedman, University of Florida
Marta Hartmann, University of Florida

A clear commitment to a global vision, including a curriculum with a strong international content, is an essential part of an academic environment striving to produce globally-competent students for today's workforce. Faculty members fully engaged in international integration are necessary for this to occur; therefore faculty members need to be exposed to and participate in international experiences. The purpose of this study was to identify the best practices for planning and implementing an agricultural faculty-focused international experience. A basic qualitative design utilizing content analysis of reflective statements collected from a team of faculty members that recently led a faculty-focused international experience was used to create best practices others can use when planning similar experiences. Communication, group dynamics, expectations, free time, and contrast were the primary themes emerging from the data analysis. Suggested discussions to have with the faculty participants prior to the trip included specifics regarding the daily itinerary, possible illnesses participants may acquire while traveling (including food-borne illness), cultural considerations, needed documentation, packing/other travel considerations, and availability of phones/internet. During the trip a daily detailed schedule, local translators, an assessment of each trip participant's ability to complete physical activities, and a participant log of where everyone was during the day is strongly suggested. Initial team building activities were suggested along with plans for group development to discourage small groups from forming. Roles of each participant/planning team member should be clearly established prior to traveling with trust built around those expectations. This includes faculty responsibilities, language needs, and the physical demands of the activities occurring throughout the trip. While all felt a shorter time frame was best for these types of experiences, participants need to be given the opportunity to explore on their own. Opportunities to shop, eat meals independently, have down time, and time for work are suggested. In addition, working to create diversity among the agricultural areas represented by the faculty members on the trip is strongly suggested as it assisted in gaining different perspectives on the experience. The best practices established by this planning team recognized changes could enhance future trips of this type. Since faculty members' cultural competence is essential to globalizing undergraduate curricula, using the perspectives of previously planned faculty trips to create future plans will ensure high quality experiences.

Perceptions of Competencies Needed for Teaching in International Extension Settings

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Agricultural extension plays a significant role in the global production and supply of food. A problem with extension services in developing countries is the lack of an adequate balance between the technical and professional competencies of personnel. The purpose of this study was to explore the professional competencies needed by U.S. extension agents to teach

adults in international settings. The conceptual framework for this study was constructed on the knowledge domains that doctoral students should acquire before teaching internationally. Twelve internationally experienced U.S. extension agents were purposively selected to participate in the study based on their regional supervisor's recommendation of program excellence. Change strategies, program evaluation methods, learning principles, and organizational development were identified by the agents as professional competencies needed before teaching internationally. Enrolling in a doctoral program is an avenue for extension agents to acquire the professional competencies associated with teaching adults in international settings. Extension administrators and professional development specialists should ensure mechanisms are in place for current and future agricultural extension agents to acquire these competencies. U.S. agricultural extension agents could be mentored by agents proficient in the identified professional competencies before teaching globally. Preparing current and future U.S. extension agents in the identified professional competencies could enhance global agricultural extension programs.

It's a Small World After All: Understanding Global Youth Perceptions About Sustainable Agriculture and Food Systems Through Trends from the Literature

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Sustainable agriculture represents a critical solution to some current agricultural practices, which are economically, environmentally, and socially devastating. Consumers have been recognized as driving forces for change in our food systems. It has been asserted that educated youth become educated consumers. Educational programming can be used to teach youth about food choices, sustainability, local agriculture, and land use. An ideal starting point for developing educational programs is through the identification of global youth perceptions about sustainable agriculture and food systems. Emerging trends can be used as a starting point to begin educational programming at the local level. Global commonalities in youth perceptions and behaviors towards sustainable agriculture and food systems exist in the literature that could form the basis for a unified educational model. Two of the themes identified in the literature include a great apprehension in today's youth regarding the environmental issues they will inherit and their overwhelming acceptance and support for the principles of sustainable agriculture and food systems. Increasing educator knowledge about these and other common youth perspectives on sustainable agriculture and food systems provide a powerful starting point to begin programming efforts in communities worldwide. Finally, further research is needed in order to build the existing body of knowledge related to youth perceptions of sustainable food systems and agriculture.

**Transformative Learning Experiences Reported by Faculty Creating and Teaching
Agricultural Sustainability for Study Abroad**

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Tracy Irani, University of Florida
T. Grady Roberts, University of Florida
Mary T. Rodriquez, University of Florida
Julia Navarro, Purdue University

International learning experiences are turning into critical elements of an undergraduate's education as the need for globally prepared agricultural scientists continues to increase. Since it is important for students to gain new and global perspectives, whether in the classroom or through study abroad opportunities, it is important for faculty to also gain new and global perspectives. Teaching within an international setting allows for the transformative potential for suggesting the promise of professional and personal growth. One way to gain exposure to international issues is to engage in planning, developing, and leading a study abroad course. The objective of this research was to describe how faculty engagement in the creation and implementation of a study abroad course impacted their views of addressing global issues and transformed their perspectives in the classroom. The course was conducted in the USA and Costa Rica during 2009 and 2010, lasted seven weeks, and focused on the principles of sustainable agriculture and entrepreneurship. Of the faculty involved, previous experience teaching abroad ranged from no experience to leading seven trips. Teaching methods included lectures, field work, and outreach activities. The course planning and teaching team was made up of faculty from three U.S. universities and one Costa Rican University. The faculty responded to a series of open ended questions after completing the course. Thirty-two responses were received and participants reported this experience opened their eyes to becoming involved in international agricultural sustainability and felt the networking with a diverse team of professionals will prove to be extremely valuable in their future teaching.

Producer Training

Livestock Industry Development and Education in Afghanistan: Views from the Producers

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Afghanistan is highly dependent on the production of livestock. Livestock production is a vital commodity in Afghanistan, integrated into most farming communities and provides the major food source for many nomadic (Kuchi) Afghans. Moreover, the rebuilding of the country has created larger incomes for Afghans, thus creating more demand for meat products by consumers. Therefore, the need for livestock production increases. For this study, a survey instrument was created and random farm families were interviewed to determine if significant opportunities existed to add value, mainly through nutrition, extension education, and development of farm service centers to the livestock sector of the provinces of Khost and Paktia.

Results found that from 77 to 100 percent of farm families would be willing to purchase feed from farm stores, farm stores could also serve as extension centers, that a combination of both grazing and confined feeding are the best option for their livestock operations, and that their livestock suffer from nutrition related deficiencies. Furthermore data indicated that less than 35 percent of producers indicated feeds are readily available. Only nine percent thought grazing lands are readily available. Ninety-eight percent claimed grazing lands are overgrazed and in need of improvement. The results of this study and survey can serve as a valuable resource to agricultural development agencies in determining the amount of funding and type of projects that can be implemented to improve the livestock industry in Afghanistan.

Assessment of the Cooperative Football Tournament Program's Impact on Rwandan Youth's Knowledge and Attitudes of Coffee Production

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As coffee producers age across Africa, there is a growing concern that African youth are not gaining the necessary knowledge and skills to fill the gap in production left by previous generations. This concern has manifested itself particularly in Rwanda, a country which has seen tremendous improvement in the quality coffee production industry. Rwanda has gone from four coffee washing stations to over a 100 in the past decade and has also implemented multiple coffee cupping competitions. These investments have led to a significant increase in both production quality and smallholder incomes; as higher quality coffee garners better prices in the world market. Amidst these exemplary improvements, there is a concern that younger generations of Rwandans are not being prepared to carry forward the country's blossoming quality coffee industry. To combat this problem, Union Hand-Roasted Coffee, in conjunction with the USAID funded project Sustaining Partnerships to Enhance Rural Enterprise and Agribusiness Development (SPREAD), sponsored a youth Coffee Cooperative Football Tournament Program (CCFTP) in two Rwandan coffee cooperatives. The program's purpose was to educate participant youths in quality coffee production, cooperative principles, public health best practices, and to foster excitement about choosing coffee production as a possible future career. The purpose of this study was to evaluate the effectiveness of the tournament program in forming the knowledge and attitudes of youth participants toward coffee production. The study used mixed methods comprised of a three section quantitative instrument and qualitative focus group discussions. As there was no prior access to population information, the researcher used a convenience sample of 222 active CCFTP participants and facilitated 11 focus group discussions during actual tournament games.

The data indicated that the CCFTP provided promising social benefits to the participants. However, it shows little impact toward participants' coffee production knowledge as respondents scored an average of 25% on the knowledge section. In focus group discussions it was difficult to pinpoint how much time participants actually spent hearing coffee production lessons as well as determining what teaching methods were being utilized by the instructors. In the focus groups, coffee production was typically regarded as the career taken by those who do not finish school or fail to find better opportunities. To be more impactful in the future, CCFTPs need to have greater logistical coordination and a standardized instruction curriculum.

Explanatory Variables Associated with the Yield Performance Gap among Small, Medium, and Large Scale Sugar Cane Growers at Ubombo Sugar-Swaziland

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Barnabas M. Dlamini, University of Swaziland

The purpose of the ex post facto study was to determine explanatory variables for sugar cane yield among small, medium, and large scale growers at Ubombo Sugar. The research was based on the hypothesis that good management practices and adequate inputs variables increases sugar cane yield. The target population of the census study was all small, medium, and large scale growers, milling their cane at the Big Bend Mill. Data were collected using validated and reliable questionnaires. Questionnaires were self-administered. Descriptive statistics of frequencies, percentages, means, and standard deviations were used to describe data. One way analysis of variance (ANOVA) and the independent t-test were used to test for significant differences at an a priori probability of $p \leq 0.05$. Correlation coefficients were used to describe relationships, and stepwise regression analysis was used to determine explanatory variables for sugar cane yield.

The findings indicated that large scale farmers were getting higher yields in tonnes cane per hectare than small and medium scale growers. However, sucrose percentage was higher with small scale than medium and large scale growers. Inputs and services were available, accessible, and affordable to all groups of sugar cane growers. Most of the sugar cane growers were within the recommended delays in implementing the crucial planting and post harvest operations; and the man-days used per activity per hectare were within standard. Small scale sugar cane growers were providing fewer opportunities for training their employees. Findings also indicated that small scale farmers had inadequate knowledge of the type of chemicals used and pre and post emergency applications. Explanatory variables for sugar cane yield were distance between the farm and the mill; hand application fertilizer man-days per hectare; and labor strength. Distance between the farm and the mill had a negative influence on sugar cane yield. Lack of training had a negative impact on sugar yield for medium scale farmers. Delays between seed cane cutting and first irrigation, age of farmer, and number of weeks between harvesting and second fertilizer application had a negative effect on sugar cane yield for large scale farmers. The research failed to reject the research hypothesis that good management and adequate inputs increases sugar cane yield. The main conclusion was that, those farmers who are furthest from the mill should consider replacing sugar cane production with other viable business ventures.

Investigating the International Awareness of Students Meeting their International Dimension Requirement through Course Offerings in the College of Agriculture at Oklahoma State University

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Many U.S. universities are preparing their students and faculty to attain “international awareness.” The College of Agriculture (COA) at Oklahoma State University offers three international dimension (ID) undergraduate courses. However, it is not certain if students taking these courses are receiving learning experiences that are impacting their international awareness. The study’s purpose was to investigate attitudes regarding the international awareness of students enrolled in ID undergraduate courses during fall semester of 2010. The target population of the

study consists of all undergraduates (N = 147) enrolled in the ID undergraduate courses offered by the COA. Students had positive attitudes regarding international issues and the impact of internationalizing the curricula pre-course. Little or no difference existed in students' pre-course attitudes regarding international issues irrespective of the ID course in which they are enrolled. Post-course results were not known at this time, but those data will be collected at the end of the 2010 fall semester, analyzed, and compared to pre-course findings.

Comparing students' performances after their having completed the courses under study may reveal whether the ID courses being investigated meet the need for which they are intended. If U.S. universities internationalize their curricula adequately, graduates who participate in ID courses may experience a positive change in their attitudes about international issues and concerns. This increased level of international awareness could improve graduates productivity as global citizens and employees. Consequently, the United States would be positioned better to maintain its leadership role in the global economy and remain competitive and secure.

Examining the Barriers and Motivations Influencing Undergraduate Students' Choices to Participate in International Experiences: A Comparison of Two Universities

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Many institutions are attempting to meet the needs of international companies for employees who are globally competent. So, international learning experiences are becoming an increasingly important element of undergraduate education. This study's purpose was to assess the motivations and barriers influencing students' decisions regarding participation in international experiences (IEs). Students at two U.S. land-grant universities were studied (n = 342). By understanding student motivations and barriers, agricultural educators can more easily target students' behavioral, normative, and control beliefs thereby influencing their decisions to participate in IEs.

The barrier participants most strongly agreed kept them from engaging in IEs was the financial expense. The most important motivator for engaging in an international experience (IE) was the personal life experience they would receive. When participant responses from the two universities were compared, levels of previous participation in IEs were significantly different ($p < .05$) before and during college. Additionally, participants had statistically different responses to the barriers they associated with IEs. Personal characteristics also influenced the barriers and motivators differently, with gender having a significant impact at one school and not the other. Moreover, the location in which participants grew up, suburban versus rural, influenced responses about barriers at one school but it had no impact on students at the other. When considering how to incentivize students to engage in IEs, agricultural educators should focus on the personal life experiences students could gain by participating. Agricultural educators should also try to find financial support for students to participate in IEs.

Feast or Famine: Students Learn about the Importance of Seed Identification Related to Climate Adaption for Sub-Saharan Africa

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Individuals with non-agricultural backgrounds compose the majority of students interested in biology today. Most of these students fail to understand that a relatively small group of plant species compose the primary plants that supply almost all food for the world's population and what is needed in order to achieve a sustainable farming ecosystem. One approach to create interest in subject content is through games. Games have been examined in university classrooms since the 1950s. Moreover, game-based education has been utilized as an instructional tool across disciplines ranging from international relations to biology. Not only do game-based exercises offer the potential for student to learn more; they serve to reinforce the student understanding of new content and to aid student retention. The cognitive benefits for the student include fostering higher level of interest in content and creating a way to learn material with an approach that promotes critical thinking. The purpose of this study was to develop and evaluate an internet-based learning system to complement traditional crop science classes to promote awareness of global food adaption.

CROPVIEW (<http://www.purdue.edu/cropview/>) consists of four learning modules followed by a game module. The four learning modules are "Introductory Module" - overview of major groups of plants, plant nutrition, photosynthesis, and biome adaptation, "Nutrition Module" - how plants provide energy and protein for human nutritional needs, "Biome Module" - characteristics that delineate biomes and where they occur in the world; and "Seed Plant Module" - descriptive information and interactive images of 20 of the world's most important crops. The "Feast or Famine" game module evaluates identification and adaptation of the primary plants that feed our world. The game consists of scenarios with increasing difficulty where people groups are faced with natural disasters leading to possible food deficits. The game player is challenged to accept the mission to supply seeds that are adapted to the disaster biome and that will satisfy human nutritional needs. The game has three levels and reported herein are the results of the third level (most difficult level) that reflects student learning of seed and climate adaption for Sub-Saharan Africa within Ethiopia. Three universities were selected to test the game. The total student population (n=150) were surveyed with 129 respondents. The preliminary qualitative data indicated that students "enjoyed the challenge of applied learning of seed crop adaption" and "felt that it was a useful way to learn about where different plants grow best, while learning to help people not go hungry." As part of the game play, the students could consult experts for advice, and the most selected expert was the African farmer, followed by the climatologist. Seventy-three students selected sorghum as the top adapted crop followed by millet. Depending on the students' prior learning and awareness of famine issues and nutritional demands this game either culminated the need to learn more about the issues or created a desire to learn more about real-world food issues.

Constraints on the Adoption of Improved Sorghum Seed in Tanzania: A Value Chain Approach

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Increasing the adoption of improved crop varieties among smallholder farmers can contribute to agricultural productivity and growth in Sub-Saharan Africa. However there are many constraints along the value chain that impede the adoption of improved seed. In Tanzania, sorghum is an important cereal crop in semi-arid areas where the use of improved sorghum varieties remains low. The main purpose of this study was to examine value chain constraints that affect the adoption/utilization of improved sorghum seed in the Singida Region, Tanzania. A survey was conducted in northwestern Tanzania with 97 sorghum farmers randomly selected from 3 villages in Iramba district. None of the farmers surveyed reported using recently released improved varieties and 27% reported re-cycling older improved varieties. The main reasons farmers indicated for not using improved seed were low market value, lack of availability, and knowledge of benefits. The main constraint faced by seed breeders was reduced funding for sorghum breeding research. Seed certification efficiency was undermined by low staffing and responsibility for multiple crops. The main constraint faced by seed multipliers was weather variability that hampered improved seed multiplication and production. The main constraints indicated by seed companies and seed distributors were low demand for improved sorghum seed and poor transportation infrastructure. Discussions with extension agents indicated awareness of improved sorghum varieties but not of new market opportunities. Extension providers have an important role in promoting the adoption of improved seed by raising the awareness of benefits, the problems of using recycled seed, and information on new market opportunities.

Predictors of Knowledge-Sharing Behaviors among Community-Based Natural Resources Organizations in the Okavango Delta, Botswana

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Tracy Irani, University of Florida
Ricky Telg, University of Florida

Communication of information about natural resources and the environment is becoming an essential component in all aspects of sustainable development. Information diffusion interventions have often relied on the use of agents to disseminate information to their constituents, mainly agricultural innovations. Research related to knowledge-sharing behaviors is scarce in environmental/natural resources communication literature, though it abounds in other disciplines, such as organizational management. There is, therefore, a need to explore knowledge-sharing behaviors in the field of environmental communication. This article presents research results conducted to examine the relative contribution of selected predictors of knowledge sharing behaviors in explaining knowledge-sharing among the community-based natural resources management (CBNRM) leaders in the Okavango Delta, Botswana. The study was guided by theory of reasoned action and responsible environmental behavior model framework. The constructs explored, drawn from the two theories; knowledge, beliefs, attitudes, locus of control and intentions, were used to conceptualize a research model. While the

responsible environmental behavior model posits knowledge to be a product of three knowledge domains, the study proposed an additional fourth knowledge domain: traditional ecological knowledge (TEK). TEK denotes socio-ecological knowledge, practices, and beliefs accumulated by communities over time through adaptive process and transmitted culturally across generations.

One hundred and twenty subjects, representing 13 CBNRM Boards, participated in the quasi-experimental study. Subjects completed a retrospective-pretest instrument after exposure to an experimental treatment – presentation of an environmental issue. Data was analyzed using multiple regression statistical procedures. Findings show that the three immediate predictors; knowledge, locus of control, and attitudes accounted for 46.3% of the variance in the knowledge sharing behavioral intention. Knowledge and attitude had an equal relative importance in the prediction of behavioral intention, with locus of control exerting the least influence. Among the four knowledge domains, skill knowledge has the strongest effect, followed by issue knowledge. The results indicate that attitudes towards knowledge sharing, knowledge of the subject matter, mainly factual and skills, have important effects in the promotion of knowledge sharing behaviors. Based on the findings, an effective information-diffusion intervention targeting agents should focus on promoting favorable attitudes and beliefs towards knowledge-sharing among agents, as well as focusing on equipping the agents with both factual and skill knowledge.

Knowledge Levels and Perceived Effect of Ecosystem Value Chain on Extension Delivery in South Africa

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The extension service, due to its large network of personnel, is in position to formulate a cohesive structure for promoting sustainable agriculture value chain. This is, however, dependent on the knowledge levels of Extension Officers which would provide important insight into predicting whether or not they would engage in programs that address sustainable agriculture value chain. A simple random sampling technique was used to select 80 extension officers to examine their knowledge levels and perceived effect of ecosystem value chain on extension delivery in North West Province, South Africa. Data were collected with a structured questionnaire and analyzed using frequency counts, percentages and multiple regression analysis. The results show that extension officers had a wide range of knowledge levels regarding ecosystem services such as provisioning, regulating, supporting, and cultural factors, as well as the valuation techniques for these services. Also, extension officers indicated that the ecosystem value chain will have high impact on extension delivery in terms of farmers requiring new skills (85%), and farmers needing specialized and privatized extension services (80%). Significant determinants of extension officers' knowledge levels were gender ($t = 2.14$), age ($t = 2.28$), educational level ($t = -3.76$), studying for higher degree ($t = 2.47$) and living in job location ($t = -2.51$).

*Undergraduate Programs***Impact of Short-Term Study Abroad Programs in Colleges of Agriculture****Mark A. Brennan**, The Pennsylvania State University**Thomas H. Bruening**, The Pennsylvania State University**Bradley L. Olson**, The Pennsylvania State University**Glenn D. Israel**, University of Florida**Alexa J. Lamm**, University of Florida

An urgent need exists for graduates who possess both agricultural knowledge and international competency. This need is indicative of the challenges we face around the world. One of the UN's hunger by half. In light of 2015 deadline, the issue of global food security needs the attention of agricultural professionals now more than ever. Development organizations from both the private and government sectors are looking for the next generation of leaders who possess the characteristics needed to tackle agricultural issues in the 21st Century. Study abroad is one way of gaining international competency by spending time in a foreign country interacting with the local people and learning from their perspective. Short-term study abroad can facilitate such learning without sacrificing a significant amount of time. In terms of academic disciplines, agricultural students have the lowest level of participation, both in the United States and internationally. This study sought to identify the following: benefits and barriers to participation in study abroad programs; impact of short-term study abroad programs on students in terms of educational content and cultural awareness.

The study surveyed students enrolled in agricultural colleges from around the United States who had taken part in a short-term study abroad program. The quantitative survey measured students' attitudes and opinions and was distributed online through the website SurveyMonkey™. The findings suggest that experiential learning in international, agricultural settings helps foster students' cultural awareness and increase their knowledge of agriculture. Students tended to believe that studying abroad would enhance their marketability and make them more employable. A majority of students agreed that they had come to view other cultures in a more positive way and felt they had increased their own capabilities as a result of the experience. An overwhelming majority reported that they had learned new information about agriculture and that they learned better by seeing the concepts firsthand. Still, there was agreement that many students are intimidated by international studies and that departments do not do enough to promote these programs. Based on the findings, recommendations include better marketing and promotion of short-term study abroad programs as well as linking programs to professional development courses.

**Developing Strong International Agricultural Education Programs
by Understanding Cognition**

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Amy Harder, University of Florida
Tracy Irani, University of Florida
T. Grady Roberts, University of Florida
Lori Snyder, Purdue University
Joel Brendemuhl, University of Florida

International experiences provide culturally rich, complex situations for learners to process in both the affective and cognitive domains. By better understanding how learners process the information they receive, educators can develop quality programs that challenge learners. The purpose of this study was to explore the cognitive relationships among participants' learning styles, problem solving styles, and critical thinking dispositions in a study abroad setting. The relationships among the problem solving styles, learning styles, and critical thinking dispositions of students participating in a three week problem solving and experiential learning focused study abroad course were examined to gain an understanding of how the three relate. When learning style preferences were examined in comparison to the group average critical thinking scores those exhibiting an accommodating or converging learning style exhibited a high critical thinking disposition. Those exhibiting either an assimilating or diverging learning style exhibited a low critical thinking disposition. When learning style preferences were viewed in comparison to problem solving style individuals exhibiting a diverging learning style tended to have a low problem solving score (adaptor preference) while those with a converging learning style preference exhibited a high problem solving score (innovator preference). Individuals exhibiting accommodator or assimilator preferences had average problem solving scores, placing them in the center of the problem solving measurement scale. Relationships between problem solving style and critical thinking disposition were not found. A major practical implication from this study is study abroad instructors should expect students on international agricultural education trips to differ in terms of their cognitive processes and associated cognitive styles such as learning style. Instructors should be prepared to address these differences in style as they would in a traditional instructional setting. Further, cognitive assessment of critical thinking, learning style, and problem solving style should be utilized to help instructors understand the thinking and learning processes of students. Instructors can use assessment tools to group students to work together more effectively and/or to achieve diversity in their thinking styles and approaches to solving problems. Given this study was conducted in a single setting with a limited sample, further testing on these cognitive relationships in varied international settings and with diverse audiences such as adult learners should be done in order to make a stronger contribution to our understanding of cognitive processes activated by international experiences.

A Semiotic Analysis of Experiential Learning in an International Context Using Undergraduate Students' Reflective Photo-Journals

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Higher education is increasingly including international experiences for students. Experiential learning is an important tool in both study abroad experiences as well as entrepreneurship education. Undergraduate students participating in a study abroad course in Latin America worked in groups to complete an experiential entrepreneurship project where they were asked to create and market two natural products. During the project, students completed a photo-journal as a reflection tool. The purpose of this study was to assess the most important aspects of the students' learning through a content analysis of their photo-journals and to determine the symbols found throughout the photographs using semiotics. The important themes emerging from the photos were hands-on learning and direct engagement with the production and selection of elements in creating natural products. Also, peer learning and group work were a focus of the photos. The majority of the participants included photos depicting intercultural interactions. The most common symbol found in the photos was students' hands forming a vector directing attention to the process of creating a natural product or the product itself. To help enhance student learning and engagement in international experience, opportunities for group work and peer learning should be provided. In addition, it is important to provide students with the opportunity to directly interact with the phenomena being studied. While intercultural engagement was present, it may be necessary to help enhance the intercultural interactions among students.

Vocational Education

Explanatory and Predictor Variables for Sustainability of Self-Employability of Pre-Vocational Agriculture Graduates in Swaziland

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Comfort Mndebele, University of Swaziland

Barnabas M. Dlamini, University of Swaziland

The study was ex post facto and the purpose was to determine explanatory and predictor variables for sustainable self-employability of the pre-vocational agriculture high school graduates in Swaziland. The study was based on the hypothesis that availability of resources improves the self-employability of the pre-vocational agriculture graduates. The target population of the study was the pre-vocational agriculture high school graduates who graduated between 2003 and 2008 (N=494). A stratified random sample was used for the study (n=218). Data collection was triangulated by the NGT workshop and a questionnaire. The questionnaire was validated and reliability tested. Descriptive statistics of frequencies, percentages, means and standard deviations were used to describe data. One way analysis of variance (ANOVA) and the independent t-test were used to test for significant differences at an a priori probability of $p \leq 0.05$. Correlation coefficients were used to describe relationships and, stepwise regression

analysis was used to determine explanatory variables. The findings indicated that there was a significant relationship between the dependent variable and resources, attitude, aspirations and location of graduates. It was therefore recommended, that a follow-up and support to pre-vocational agriculture graduates be considered for sustainable self-employment. Furthermore, the school career guidance program must be strengthened to support career decision-making among prevocational agriculture graduates.

A Comprehensive Approach to Implementing Successful Internship Programs in Egyptian Agricultural Technical Schools

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Since 2007, instructors in the agricultural technical schools (ATS) in Upper Egypt have been involved in a series of programs designed to prepare them to plan and conduct internships as a part of the school curriculum. Instructors have indicated the competencies they developed as a part of participating in workshops as well as competency areas in which they need further assistance. The programs were designed as part of a model that was developed to prepare a well-educated agricultural workforce, eventually improving the agricultural economy of Egypt and assist farmers and agribusinesses to be more successful. Instructors were also involved in a study that identified their concerns regarding the implementation of internships, and key personnel were interviewed to ascertain indicators of success. Generally, the implementation of internships has been successful. Instructors need more assistance in working with families and agribusinesses. Instructors have some concerns about implementing internships since they are not part of the required curriculum. Students, parents and agribusiness representatives were highly supportive of the internship program. The program should be expanded so that more students can participate, and additional workshops are needed to assist instructors who continue to have concerns about how to incorporate internships into their programs.

Educators' Perceptions of Job-Related Competencies Needed by Entry-Level International Development Agents

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William Weeks, Oklahoma State University

According to the United States General Accounting Office (2003), since 1992 the United States Agency for International Development (USAID) staff has decreased substantially. As a result, USAID increased its reliance on contractor staff to manage its day-to-day overseas activities. This shift in staffing has pushed many non-governmental agencies (NGOs) to become involved in implementing aid-supported development. Recent college graduates with an interest in international agriculture and extension education fill these expanding job opportunities. Colleges and universities are charged with effectively designing curricula that enable students to acquire the needed competencies and better prepare individuals to live and work successfully in other cultures (Irigoin, Whitacre, Faulkner, & Coe, 2002).

The purpose of this study was to describe educators (AIAEE members) perceptions of job-related competencies for entry-level international development agents. Nine constructs were garnered from the research: conflict management and resolution, cultural diversity, management responsibility, personal and professional development, personal skills, program planning and evaluation, public relations, staff relations, and work habits. An online questionnaire was used to collect data and a 49% response rate was achieved. Educators rated all nine constructs as somewhat important or important. When asked to rank the constructs in order of importance, participants ranked program planning and evaluation as the most important followed by cultural diversity, and work habits. Only a weak correlational relationship was found for age and international work experience to the nine constructs. About half of the participants reported having taught an undergraduate or graduate course related to international development.

**Association for International Agricultural and Extension Education
27th Annual Conference
Professional Poster Presentations**

The Mvule Project: Promoting Ecological Educational and Economic Advancement in Busoga, Uganda. Ian K. Shelburne, & David E. Lawver

Cell Phone Services in Africa: Use of Advertiser Supported PCM Messages for Agricultural Market and Extension Information. David R. Walther, & David Lawver

Developing and Implementing a Subscription Management System for Extension Clientele. Pete Vergot, & Theresa Friday

Trends and Perspectives of Subsistence Farmers in Timor Leste on the Use of Forest Products and Traditional Agriculture. Austen Moore, Tom Dormody, & Dawn Van Leeuwen

Broadening the Conversation: The International Agriculture Graduate Student Forum. Dan Tobin, Kristal Jones, Jessica Bagdonis, Katy Barlow, & Thomas Bruening

Serving Fresh Salads to Mojitos: Students' Experiential Learning of Local Markets and Hydroponics on Island Time. Lori Unruh Snyder, Michael V. Mickelbart, & Val Eylands

Reusable Learning Objects as a Delivery Strategy for Internationalizing Agricultural Curricula. Rwei-Ping Chang, M'Randa Sandlin, Kim Dooley, & James Lindner

Factors influencing choices of grazing lands made by livestock keepers in Enhlanokhombe in Ukhahlamba (Drakensberg), KwaZulu-Natal, South Africa. Steven Worth, & Mphumzeni Chonco

The Power of Context: Understanding Human Behaviors in Complex Global Settings. Lauren Hrcirik, Nicole Stedman, & Amy Harder

Thinking Globally, Acting Locally: Extension and the World. Renee Pardello, & Greg Cuomo

Curriculum Development for the Agricultural Vocational High Schools of Afghanistan: Building a Sustainable Future. Jerry Peters, & Ryan Wynkoop

Enhancing Faculty Capabilities to Address Food Security, Safety, Production, and Marketing in Trinidad and Tobago. M'Randa R. Sandlin, James R. Lindner, Kim E. Dooley, David Dolly, & Wayne Ganpat

Survey Says Identifying Research Capacities at the Universidad Nacional Agraria-La Molina. Padon Holt, Ryan Collett, Samantha Alvis, Carmen Velezmoro Sanchez, Silvana Vargas Winstanley, Gary Wingenbach, Leonardo Lombardini, Manual Piña, Jr., & Gary Briers

Using MOODLE to Bridge the Divide: Three Countries, Three Languages. Esther Miller, Susan Jagendorf-Sobierajski, Guadalupe Patricia Revilla Pacheco, David Njite, & M. Craig Edwards

Hungry Decisions: Using Second Life to Experience Global Conditions. Tracy Rutherford, & Gary Wingenbach

Could Farmer-herdsmen Conflict Affect Cassava Value Chain? Report of a Comparative Study in Kwara State, Nigeria. Rashid Lolagberu Adisa, & Oluwasegun A. Adekunle

International Experiential Training for Undergraduate Students: Ethogram of Feeding Behavior of Dairy Cows in the Humid Tropics. Lori Unruh Snyder, Joel Brendemuhl, P. Woodson, Alexa J. Lamm, & Tracy Irani

Farmers Perceptions of Organic Vegetable Production Practices in West Java and Bali, Indonesia. Chifumi Takagi, & Murari Suvedi

Building More Effective Study Abroad Programs: Students Feedback from Programs to Brazil and Croatia. Jill Victoria Tomlinson, & Wilmara Harder

Internationalizing Agricultural Curriculum at Oklahoma State University (OSU). Cindy Blackwell, M. Craig Edwards, D. Dwayne Cartmell II, Shelly Sitton, & J. Tanner Robertson

Who Knows Best? Breaking the "Curse of Knowledge" to Determine Teaching Capacities at the National Agricultural University-La Molina. Kim E. Dooley, James R. Lindner, Javier Arias Carbajal, & Martha Williams de Castro

Getting Your Feet Wet in Development: The USAID-Inma Aquaculture Training Program in Iraq. Duane Stone, Natheer Abdul-Sahib. Tim Kock

Using Faculty Study Abroad Programs to Improve Undergraduate Curriculum. M'Randa R. Sandlin, James R. Lindner, & Kim E. Dooley

Establishing a Fulbright Students and Scholars Association (FSSA) at Oklahoma State University: A Student-led Initiative. Assoumane Alhassane Maiga, Shelly P. Sitton, M. Craig Edwards, D. Dwayne Cartmell, Cindy Blackwell, & Tanner Robertson

Investment Assessment for Extension. Magdalena Blum, Judit Szonyi, & John Preising

2011 AIAEE Conference

Outstanding Paper Presentation

*Transformative Learning Experiences Reported by Faculty Creating and Teaching
Agricultural Sustainability for Study Abroad*

Lori Unruh Snyder, Purdue University
Alexa J. Lamm, University of Florida
Joel Brendemuhl, University of Florida
Tracy Irani, University of Florida
T. Grady Roberts, University of Florida
Mary T. Rodriquez, University of Florida
Julia Navarro, Purdue University

Outstanding Paper Presentation – 1st Runner-up

*Predictors of Knowledge-sharing Behaviors among Community-based Natural Resources
Organizations in the Okavango Delta, Botswana*

O. T. Thakadu, University of Botswana, Maun
Tracy Irani, University of Florida
Ricky Telg, University of Florida

Outstanding Paper Presentation – 2nd Runner-up

*Communication Factors Affecting African Policymakers'
Decisions about Agricultural Biotechnology*

Belay Ejigu Begashaw, The MDG Centre, East & Southern Africa
Gary J. Wingenbach, Texas A&M University

Outstanding Graduate Student Paper Presentation

Explanatory and Predictor Variables for Sustainability of Self-Employability of Pre-Vocational Agriculture Graduates in Swaziland

Mpendulo L Mngomezulu, University of Swaziland
Comfort Mndebele, University of Swaziland
Barnabas M. Dlamini, University of Swaziland

Outstanding Graduate Student Paper Presentation – 1st Runner-up

An Analysis of the Agricultural Sustainability of Small-Scale Farms in Lacluta Sub-District of Timor Leste: A Comparison of Internal and External Perspectives

Austen Moore, New Mexico State University
Tom Dormody, New Mexico State University
Dawn Van Leeuwen, New Mexico State University

Outstanding Graduate Student Paper Presentation – 2nd Runner-up

Examining the Barriers and Motivations Influencing Undergraduate Students' Choices to Participate in International Experiences: A Comparison of Two Universities

J. C. Bunch, Oklahoma State University
Alexa J. Lamm, University of Florida
Glenn D. Israel, University of Florida
M. Craig Edwards, Oklahoma State University

Outstanding Poster Presentation

Developing and Implementing a Subscription Management System for Extension Clientele

Pete Vergot, University of Florida
Theresa Friday, University of Florida

Outstanding Poster Presentation – 1st Runner-up

*Reusable Learning Objects as a Delivery Strategy for
Internationalizing Agricultural Curricula*

Ruei-Ping Chang, Texas A&M University
M’Randa Sandlin, Texas A&M University
Kim E. Dooley, Texas A&M University
James R. Lindner, Texas A&M University

Outstanding Poster Presentation – 2nd Runner-up

*Serving Fresh Salads to Mojitos: Students Experiential Learning of
Local Markets and Hydroponics on Island Time*

Lori Unruh Snyder, Purdue University
Michael V. Mickelbart, Purdue University
Val Eylands, Blue Harbor Plantations Farms

Outstanding Graduate Student Poster Presentation

*The Mvule Project: Promoting Ecological, Educational,
and Economic Advancement in Busoga, Uganda*

Ian K. Shelburne, Texas Tech University
David E. Lawver, Texas Tech University

Outstanding Graduate Student Poster Presentation – 1st Runner-up

*Cell Phone Services in Africa: Use of Advertiser Supported PCM Messages for Agricultural
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David R. Walther, Texas Tech University
David Lawver, Texas Tech University

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*Trends and Perspectives of Subsistence Farmers in Timor Leste
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