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The Journal of International Agricultural and Extension Education is the official refereed publication of the Association for International Agricultural and Extension Education. The purpose is to enhance the research and knowledge base of agricultural and extension education from an international perspective.

Articles intended for publication should focus on international agricultural education and/or international extension education. Articles should relate to current or emerging issues, cite appropriate literature, and draw out implications for international agricultural and extension education. Manuscripts should not have been published or be under consideration for publication by another journal.

Three types of articles are solicited for the Journal -- Feature Articles; Commentary Articles; Tools of the Profession Articles.

Feature Articles

Feature articles focus on philosophy, current or emerging issues, and the methodology and practical application of specific research and appropriate technologies, which have implications for developed and developing countries. Feature articles go through the Journal's blind review process utilizing peer reviewers to evaluate content and readability. Reviewers are usually selected from the membership of the AIAEE. In the blind review process all reference to author(s) is removed before the manuscript is sent to reviewers.

Commentary Articles

Commentary articles state an opinion, offer a challenge, or present a thought-provoking idea on an issue of concern to international agricultural and extension education, including a published article in the Journal. Commentary articles are reviewed by two members of the editorial board for appropriateness and relevance to the Journal, and for readability.

Tools of the Profession Articles

Tools of the Profession articles report on specific techniques, materials, books and technologies that can be useful to agricultural and extension educators in a global context and/or in a country/region. Tools of the Profession articles are reviewed by two members of the editorial board for appropriateness and relevance to the Journal, and for readability.

The Journal is distributed in one of three formats: printed copy (\$25), computer disk (\$15), or email (\$10).

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From the Editors

This special issue devoted to the Association's 1998 conference continues the initiative begun last year of dedicating one issue of the Journal to a report of each year's conference. Encouraged by the positive formal and informal feedback, the editorial board voted to produce the special conference issue again. We expect the publication to become a tradition of the Journal, serving as a historical record of one of the Association's important scientific activities, as well as providing a vicarious conference experience to those members unable to attend.

This year's conference was held in Tucson, Arizona, April 16-18. Over 100 persons from 12 countries were registered. The theme of the conference, "Sustainable Development Through Participatory Collaboration", was the focus of keynote and invited addresses and paper and poster presentations. The Association conducted the annual awards function, and business and committee meetings. The University of Arizona arranged opportunities for the participants to attend educational tours to the state museum, Saguaro National Park, and the University's environmental research laboratory.

The keynote address by Merle Jensen was sprinkled with examples of technology transfer between the United States and several developing countries in which the speaker had a role. This provided a good beginning to subsequent discussion and debate on the conference theme. An invited address by Niels Röling on the changing role of extension from agricultural production innovations to technology-ecology issues gave participants food for thought about the future.

In synthesizing authors' ideas from the paper and poster presentations, the approach taken was to identify dominant themes, and attempt a synopsis of the significant issues presented and the conclusions/implications. Over three-fourths of the paper and poster presentations have been included in these syntheses. Conference proceedings contain the full papers and posters, and are available for \$30 a copy from Jack Elliot.

Six papers received outstanding presentation awards. They are reproduced as full articles.

The awards ceremony on the last day was the culminating event providing a fitting climax to the discussion, friendship and collegiality that are such engaging features of the conference. Bruce Lansdale regaled the luncheon group with a few gems from Hodja. Association awards were given for outstanding leadership, service, young professional, and paper and poster presentations. Larry Miller, who had the best paper presentation in the concurrent sessions, presented his paper to the full group.

An interesting idea suggested by Barbara Ludwig, Past President of AIAEE, and followed up by Cathy Hamilton, Davison Mupinga and Fredrick Nafukho, doctoral candidates at Louisiana State University, was to speak to a few first-time delegates and students about their impressions of the conference and AIAEE. Feedback from eight persons who were interviewed is included in this issue.

Davison Mupinga and Fredrick Nafukho were most helpful in putting this issue together. They tape recorded conference proceedings and delegate interviews, transcribed the tapes, and wrote the pieces in this issue which bear their names. Their help, and the competent assistance of Sandra Sanders, administrative assistant in the Louisiana Cooperative Extension Service, made the work much easier and enjoyable. We are indebted to them, and convey thanks from the Association and the Journal's editorial board.

The South African Society of Agricultural Extension held its annual conference in East London, South Africa, May 19-21. Impressions of the AIAEE Journal Editor who attended that conference are also included in this issue.

Once again we present this conference issue and hope you will enjoy reading it. Your feedback will be appreciated.

We would like to end with the Journal Editor's report to the Association's membership at the conference. We feel it expresses what the Journal stands for and looks forward to in the future.

Journal Report to Conference

At the 1996 annual conference, a vision of the Journal in year 2005 was developed and adopted by the general body of the Association. It has been said that a vision without a strategy is an illusion. We believe that in the last two years the Journal has been moving to make its vision a reality, and not just remain a dream. Progress has been made on four goals. Contributions from Asia, Africa and Central/South America have been growing, diverse topics and issues are being addressed, meaningful collaboration has occurred with international journals in agricultural extension in Europe and South Africa, and the first step toward making the Journal a multilingual publication has been taken by translating into Spanish abstracts of the first three volumes. Two other interrelated goals -- achieving worldwide circulation, and enhancing interaction and electronic access -- are more complex and will require more time, thought, and work to realize.

The Journal's progress is reflected in the following:

1. 1998 marks the fifth year of on-time publication. In 1997 (Volume 4), the number of issues was increased to three -- a special conference issue was published in the summer. This will now be a regular feature of the Journal.
2. Through spring 1998, 62% (84) of the 124 manuscripts received since the Journal's inception were published, 18% (22) had been rejected or were withdrawn by contributors, and 14% (18) are under review or revision. Usually, it takes about 6-9 months from receipt to a final, publishable manuscript.
3. The opening of Commentary and Tools of the Profession sections is a means for expressing opinions and sharing technologies and practical applications of theory and research. More contributions to these sections as well as the feature articles section are always welcome.

Members of the Association and Journal subscribers and contributors may be interested to know the philosophy that guides the Journal. Quality and inclusiveness are the basic philosophical tenets motivating Journal staff. Quality, the intellectual dimension of this philosophy, means ensuring that the Journal maintain a high standard of the reporting of science, theory, and practice, and live by a code of ethics based on trust and integrity. Inclusiveness is the emotive aspect of the Journal's philosophy. This implies establishing a climate of mutual influence, respect, and learning among all those who contribute to the

Journal -- editorial staff and board, authors, reviewers, and readers. In practice, this suggests that (a) editors are not simply managers of manuscript traffic, but genuinely counsel and work with authors through reviews and revisions, and (b) the Journal's reputation is not linked to a high rejection rate of submitted manuscripts but rather to quality of content, and a genuine effort not to be exclusive and elitist.

Satish Verma - Editor

Cathy Hamilton - Associate Editor, Tools of the Profession

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Research and Extension in Food Production: Dr. Merle Jensen's Opening Address

The important role of agricultural research and extension in sharing technology to increase food production around the world was highlighted by Dr. Merle Jensen, Assistant Dean, College of Agriculture, University of Arizona, who gave the opening address at the conference. A horticultural scientist and development consultant who has traveled and worked in 65 countries, Dr. Jensen shared a few of his collaborative experiences with scientists and development personnel in the United States and other countries. He emphasized the benefits that both developed and developing countries can gain by sharing technology in a spirit of mutual respect, openness, and readiness to learn. Dr. Jensen alluded to major issues facing the world, and gave examples of projects in which he had been involved. Excerpts from his address are paraphrased to bring out key points made by Dr. Jensen.

Dr. Jensen indicated that the biggest challenge for all nations, and particularly individuals in those nations who are connected with agriculture, food, and technology transfer is feeding the world's burgeoning population. This task has to be pursued in a way that national economies and environments, both severally and from a global perspective, are sustained and all people have an opportunity to develop.

Proper land and water use are critical concerns in the task of food production. For example, a common global problem is overgrazing of land leading to soil erosion, climate change, and desertification. Another big problem is excess soil salinity resulting in loss of cultivable land. Only 10% of the earth's land area is arable, and as much as 40% of the arable land is threatened by salinization. Egypt, for instance, had to build roads around sand dunes to prevent encroachment. A related and equally difficult issue is finding and providing clean drinking water for the population, and utilizing water resources for agricultural purposes in a sustainable manner. The World Bank estimates that 25,000 people die every day from polluted or insufficient water.

Dr. Jensen cited examples of projects in which water resources had been harnessed for agricultural purposes. In Arizona, his home state, 25,000 miles of canals were bringing water to places where food was now being produced, pushing the desert back. But, with solutions come further questions, such as what and who will have priority for limited water supplies -- city populations or agricultural users. In fact, many areas of the world face a similar dilemma. And, as one looks at using water for agricultural purposes, the question arises "Can we continue to flood irrigate using excess energy and water or should we not be looking at more precise irrigation methods, such as drip and trickle irrigation?"

Dr. Jensen indicated how the successful experiences with harnessing and utilizing water resources for agriculture in Arizona led to collaborative projects with several countries. With the University of Sonora, Mexico, desert sea coasts were developed for agricultural purposes. Sea water was desalted, and the water used to raise crops. Not only that, it was found that with a perfect nutrient solution one could raise crops in pure sand. Abu Dhabi, a little country in the Middle East, heard about this venture. The project was replicated and a food factory constructed, complete with desalinization plant and five acres under green houses. Excellent crops were produced, including an exotic variety of cucumber from Europe. The local population did not care too much for this variety, but the Sheikh (ruler of that country) went on television one night extolling its value and exhorting people to eat it. They did. However, as these innovations were being introduced, the question in the minds of U.S. consultants was "How appropriate is the technology we are bringing to these countries considering their level of sophistication and cultural norms? Should we not be doing something that is simple, can be supported indigenously, and can be easily understood?" There were also questions regarding the benefits to the University of Arizona and the United States. Research done in the Middle East and in Arizona showed that food could be grown in pure sand, that a plastic barrier could be placed on the floor to conserve water, and excess water not needed by plants

collected and recycled. An intensive agriculture system was thus developed in Arizona, a whole new agriculture industry of hydroponics, with green houses as large as 40 acres under roof employing hundreds of people. This is a spin-off from the early work in the Middle East that has benefited Arizona.

Drip irrigation was cited as an example of a successful project in Morocco. The country did not have enough water to flood irrigate as they were doing; also, they did not have enough animal waste as fertilizer. So, they were introduced to drip irrigation and water-soluble fertilizer, and were able to irrigate twice the area that was previously flood irrigated. An additional benefit of drip irrigation was that salt water was kept away from the roots. Another important element of the project was the training of extension and agricultural workers in green house technology, and allowing farmers to choose from a variety of ideas. In fact, in California, use of drip irrigation has resulted in 97% water efficiency use and 60 pounds of cotton for every inch of water used. This is the kind of technology to transfer to other countries -- technologies that will promote efficiencies and economies.

In the United States we are entering the era of precision agriculture, aided by sophisticated technologies such as remote sensing and mapping which will allow farmers to raise crops based on the needs of small plots and/or individual plants. Fish farming is a potential and fast growing industry around the world. In Arizona, the many miles of water canals are unsuited to fish culture because of the high rate of water flow. But Native Americans have broken up the water flow and grown fish successfully. Fish waste is also recycled into production agriculture. So, two crops are now being produced with the same water and the same energy. This has been happening in other countries as well. Dr. Jensen cited a project in which he helped build fish ponds from cement sand and stocked them with Tilapia (from Africa) and plants (as fish food) in Sonora, Mexico. A month later, all the fish had been stolen by the local people. The fish were too small to eat, but the people knew their value as fingerling stock. In a bizarre way technology was being transferred throughout Sonora. Another example was research done on raising of shrimp in sea water green houses at the University of Arizona. Although a viral disease killed the Arizona shrimp, the technology generated by the project spilled over into Mexico, Costa Rica, and Central America. Mexico now has about 12,000 acres of shrimp pond open fields because of this work.

Biotechnology, genetic engineering, and space technology are the new "frontier" areas of research which have much to offer the agricultural industry in its quest for producing more and better quality food to feed the nations of the world. The challenge for agricultural professionals in research and extension is to feed everyone in a way that will sustain the resources of the world.

Dr. Jensen ended his address thanking farmers for their labors and their show of gratitude for a new variety or technology, and empathizing with extension workers, whom he regarded as missionaries in technology transfer.

Extension and a Risk Society (Invited Address)

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Thank you very much for all these very kind and a bit embarrassing words actually. I must say I feel very much at home here and I feel very grateful for the way you have made me feel welcome. So, I hope I can do justice to this expectation because it's getting to be a bit tough.

What I want to talk about is "Extension and a Risk Society." I borrowed this term "risk society" from Ulrich Beck, a sociologist. I would like to explore a little bit what it means to our profession to be in a society that is marked by risk as result of our own activities. I will try to explain that.

We are all very used to thinking about science as involving change, since many of us have been trained in science. We see science and technology as having generated fantastic opportunities for human existence. In our faculties of agriculture we are probably all very much used to being asked questions like "What about your contribution as a social scientist?" I have many among our technical agricultural faculty who expect me and our group to perform in the same way as they do. So, we are often being judged by our ability to provide experimental proof, and by our ability to manipulate successfully, in an instrumental way, causal relationships. Of course, that is the last thing we can do. So, we are being told "You guys can't even send a man to the moon, what is the use of social sciences." I have always had this kind of struggle in trying to explain what we are all about. I say yes, but we are trying to understand people's reasons because they are very powerful in explaining what people do. We are also trying to look at institutions and their development, because they are very important for the way things are going in the world. And then I say, social science is as powerful as science in affecting people. And, then I try to explain by this mechanism called the "double hermeneutics", which is something Anthony Giddens thought of. I like it very much. Giddens says the idea of double hermeneutics is that whether you believe that the sun turns round the earth or the earth turns round the sun, it does not make a difference to these celestial bodies. But, what people think of other people does make a lot of difference in how they behave. And so, people behave on the basis of their reasons. They are sense makers and they can be called reflexive.

As an example of this double hermeneutics, I like to use the impact of economics. I am always struck, and I think in all your universities you are probably also struck, by the fact that universities are run on principles of economics and marketing language, and we all have to think strategically, and so on, and so forth. Economics has had a fantastic impact on our thinking even though it is not an experimental science at all, it is an axiomatic science. Axioms, which economics uses, I think are two: one is that people seek to maximize their benefit or their utility, and the second is I think less known, but my wife tells me it's called the "Benthamite Agenda". Benthamite Agenda, which is the greatest good for the greatest number, arises from the pursuit of wellbeing. You have this notion that by the individual pursuit of wellbeing automatically a desirable society arises as a kind of emergent property, which makes it very much a kind of evolution, the automatic outcome of a struggle for survival. And so, this Benthamite Agenda has I think been very powerful. We are very much living on that basis. We have organized our society very much on this way. Our vice chancellor in Holland and our Minister of Agriculture will say free market is

the best food guarantee for food security in the world. So, that I think is really an example of this agenda pursued by a world trade organization.

However, I have a but, and the but is that the collective impact of human activity looking after individual wellbeing is destroying the thin film of biosphere that we are all dependent upon. And so, basically, that is where the term risk society comes from: that we are living in a society which has risks, we are living in conditions of very high uncertainty which are of a human nature, we have created them ourselves. Our activities lead to a risk society. Ulrich Beck has written a whole book on that notion. That's why I called my talk a risk society. I think what one could draw as a conclusion is that we can really no longer afford this Benthamite Agenda -- an automatic decrease in the following of that agenda. That leads us really to my main issue of today, which is that you cannot, and I am quoting Einstein, or maybe adapting what he really said but I like it very much, "You cannot use the same thinking that caused the problem to solve it." I think we can draw the conclusion that it is not just science and technology nor economics which will solve our problems in future but probably much more a change in human sense making, human institutions and that, therefore, we are really faced with the need to think of a new agenda. We are faced with a new focus on the double hermeneutics, a change in how that works, and how we could make it to work better.

So, that then raises the question "What can replace this agenda"? I think that's a very important question. What I suggest by way of answer is "adaptive management", the term invented by or revitalized by an American ecologist called Clarence Holling. He is now an elderly man I understand. He has a whole set of students who have worked on the analysis of complex ecosystems and what they have come up with is a number of very fascinating issues as far as I am concerned, which I think are very interesting to agriculturists. One is that all ecosystems move through cycles, and the cycles have to do with the accumulation of energy, with increasing complexity, with collapse and regeneration. And, so say Holling and his colleagues, what we try to do as humans is to control target variables to be stable and constant so that our life continues and we have a future on which we can count. We try to suppress all other variables and, of course, that kind of tendency of our approach conflicts with ecosystem dynamics. So, as a consequence, he speaks of the ultimate pathology of vulnerable ecosystems in dependent societies. I think we have had many examples of this and I don't have to really go into details. And so what they have come up with is that, instead of a kind of control-oriented management, what we need is adaptive management, which will include monitoring and taking corrective action on the basis of monitoring, experimental probing of ever-changing environments. The result, he says, is a new agenda for releasing human opportunity which is much more based on learning and institutional change.

It's remarkable how interested these ecologists are in learning and institutional change. One of the chapters in what I think is a very breathtaking book called "Barriers and Bridges" deals with social learning. The whole book is really about institutions. I think that we can draw a number of conclusions which are very relevant for our profession from at least this thinking. One conclusion is that we have to move from agriculture to ecological services. I think that most agricultural universities, including my own, focus on food production. We have just formulated a new mission for our combined research and agricultural university institutions which we are building and, of course, it's food production and green space which we are focusing on. I think that we are already behind times. Because I think that the notion of ecological services is much more powerful and much more useful as a mission for an agricultural university.

Let me just briefly mention a few of these ecological services. Of course, they include food and fiber, but they also include water, they include biodiversity on which we are very much dependent, they include recycling of wastes, the production of oxygen-stable climates, our genetic integrity versus not so very certain, control of micro-organisms. Let me give you a few examples. The other day I was listening to a BBC report on another killer bloom in Hong Kong. They have suddenly realized that this killer algae

bloom is really threatening aquaculture. You realize that such a killer bloom, the enormous expansion of microorganisms through conditions which people have created, is the outcome of human activities. The same, of course, with the hole in the ozone layer, with the fact that crop pollination is threatened in that these insects are no longer showing up when they should, and so on. So, I think we are increasingly becoming very aware of the fact that we are not only dealing with food and fiber, we are dealing with very narrow conditions on which we depend, and they require management of ecological services.

I think many ecologists and economists are beginning to be aware of this. In March there was a very interesting European session of the Ecological Economics Association. That's a very interesting group of people who are beginning to look at what this ecological thinking means for economics instead of the other way round. They are going to have a world congress I think in November in Chile this year. Let me now continue with the implications and this of course is going to get you all upset, maybe. I think one implication is that we need to move from a selfish pursuit of wellbeing to negotiated agreement to curb greed. Gandhi once said, "There is enough for everybody's need but not enough for everybody's greed." So I am using that term. I know it sounds horribly pessimistic if not very naive, but I think that we need to look at this very carefully. I think that it is not altogether hopeless. There are quite a few cases of successful negotiation where greed has been curbed.

I would like to give you an example of a community forest in Nepal, which has been studied by a student of mine. Maybe she picked a very good example but I was impressed with what happened. In the 1950s, the national government in Nepal made public property of all the forests. Forests were being misused by the villagers. These became common properties as has happened with coastal areas in Europe and many other resources that have been nationalized to become public property. The result was that they became defacto open access properties. So, they were totally, let's say, degraded. Recently, a new law has allowed these forests to be given back to the communities, which means that these communities have been helped by the government to create regimes for managing these forests, and these regimes include agreements, they include sanctions for not following the agreements, they include ways of monitoring the agreements like village supervisors, and access to the forests. The result of these rules has been that people have had to sell, for example, some of their animals which were fed from forest products because they couldn't take as many forest products as they were used to. So here you see, I wouldn't even call it greed, it's a bit mean because these people are very poor, but have managed their taking of products from those commons because that is the only way to survive and to make that forest survive. People have realized that in order to make the forest survive they have to do that. I think that's a very good example, be it a small scale one, of an instance where successful negotiation of agreements to curb greed has been reached.

Another thing that is hopeful is that there are examples of very successful sustainable societies. One example that I personally like very much and I hope I am going to visit on my sabbatical is in northern Philippines. Some of you might know the place. I have been there more than once. If you stand on the parking lot, you can see mountains in front of you that are covered by terraces which are 3,000 years old. So, here is a community that has for 3,000 years been in a very inhospitable mountain climate/mountain environment but has managed to maintain terraces that have fed a very dense population. Needless to say in modern times the crumbling is not just their fault. But, the fact that they have managed for 3,000 years to maintain a society is indicative of a successful negotiation.

The final reason why I am hopeful is that I think that there are social science perspectives that can begin to function in this double hermeneutics and replace some of the axiomatic ideas that we are selfish and that we are economic man. Some of these are, well, I can't help it but I must mention constructivism, which I think provides some faith in people that actually they can construct their own reality and are not dependent on given truth that other people have resolved for them. I think a very important dictum for social science, that is, I think very, very educative of how we behave is the whole study of holons, which Custer formulated -- a holon being a sub assembly in a larger hierarchy of assemblies, where each holon

of course is part of the whole but if the whole looks down, it's also a part so there is always this conflict between being autonomous and being part of a need to integrate, and people always have the choice between egoistic or selfish behavior and cooperative behavior. There is a lot of research on the conditions under which people might engage in cooperative behavior. I think this is a very fascinating area of research for us because it has implications for solution of conflicts, or resolution of conflicts.

Directly related to that, of course, is common property resource management and I have alluded to that already when I mentioned the forests in Nepal. Another project that I thought brought a lot of insights and we have been working on this very much is a Harvard-based project on the consensual approach to conflict resolution. I think that project has been very powerful in suggesting new ways of dealing with environmental issues.

The final plea I want to make is to look for reasons why societies collapse. Unfortunately my memory is not good enough to give you the exact quote, but for anybody interested there is a book on the collapse of complex societies. I think we are always talking of how can we grow, how can we develop, but I think it's equally interesting to look at how do we collapse, and what is the basis for collapse. Understanding that is educative.

I would like to end here with some conclusions for our profession. I think that extension, the facilitation of learning, conflict mediation, leadership development, and such activities are key professional skills for change to adaptive management. So, the way you're talking of adaptive management, there is a key direction for our society to go. If we are to make intelligent choices based on our ecological predicament, then I think our profession has a really very fundamental role to play, and a much more fundamental role than our earlier role where we were asked to deliver the technologies that the scientists have produced. I think it means that we are moving, and we have to move, from a focus on innovation to group communication and mediation. We put the word innovation in our group at Wageningen, but I think increasingly our job has to do with mediation, which is more than innovation. Also, we are moving from expertise-based solutions to solutions which emerge from interaction. This I think is a fascinating area for our field. And, finally, I would like to mention that from a focus on agricultural/rural development, I really think we need to move to adaptive management of ecological services. So, hopeful and positive conclusion, on the last day of your conference, "ours is a key profession in a risk society." Thank you.

Question: From local and rural development viewpoint, I want to ask how do you suggest that we solve the dilemma or conflict between the need to produce more food to feed the growing world population, which by the year 2000 is estimated at 6.5 billion, with your concept of adaptive management of ecological services?

Niels: Good question. I think what the questioner is saying is that this adaptive management is all very well, but really in developing countries where population is rapidly increasing, what we need is more food, more production and all this stuff about adaptive management, how does that help? In the first place, I am not saying that adaptive management is totally subjugating human needs to the needs of ecology. I didn't say that. I said it's another strategy for releasing human opportunities, number one. Number two, I think that the notion that the present problems in food production are caused by a lack of productive capacity is really questioned in many circles. Many people say that it's more a question of distribution than of total production. You know that in the North we can produce food, that our productivity of labor is about 34-35 times the productivity of labor in the South, that the cost of labor is about 24-25 times higher in the North than in the South, you are still ending up with a cost of production which is considerably lower per unit of food in the North than in the South. The result is that you will not find a chance for rest of the farmers to develop. They don't have access to fertilizer, they don't have access to other resources, there is no one who wants to invest in land development because it doesn't pay. I think those are the kinds of questions which are much more important and have much more to do with

this kind of study than a total technology which will increase food production through precision farming or what have you. But, that is a debatable issue and that's my point of view. You might not agree.

Comment: Isn't it also a sobering thought that if we do not take care of ecology, eventually there would not be any human beings left.

Niels: Let's take this simple fact that pollination is now becoming so difficult. There was a whole article in the New Scientist the other day about pollinators. Insects to pollinate major crops are really becoming a problem. Because we are spraying everything and there are no more little places where they can breed. We are just really worried. But if you just go on and on you will hit a wall. I think that's what we are doing.

Question: You mentioned that Extension will need to move from innovation to mediation. In light of what you said about constructivism, I would like to think that it's going to increase innovation, with a shift in what we mean by innovation. Are we talking about diffusion of innovation or technology, or are we talking about creative innovation at the same time and changing our model and mind set? I would hate to see Extension ever move away from innovation. I think that we should be at the forefront of innovation. I think we need to redefine innovation. I know where you are coming from, and while you may not agree with this notion, in Extension we need to be innovative.

Niels: What I said is that I think innovation is very much a word we use to talk about ways to adapt to means, to maintain our goals, or even to achieve our goals. With mediation, I think we are dealing with mutual interdependencies, with conflict. These are becoming as important in our work if not more than this adaptation of our means to our goals.

Question: Ecology is a long-term issue, much longer than the politician's life cycle. Lester Brown, of the Worldwatch Institute, said one of the lingering impediments of our society is not to focus on long-term solutions. But, ecological issues are much longer-term than what the politician is there for. This is a major issue. Secondly, you have mentioned examples of Native Americans in harmony with nature. But we cannot go back because of the industrial world. The population has increased; we can only go forward and the answer is technology. These are technological concepts, but institutions are not in alignment with technology, that is the main issue. How do we bring into being institutions which are consistent with technological solutions.

Niels: I would agree that technology has a very major role to play. Yet, I maintain that the key thing is not so much using technology to solve these problems, but the collective impact of individual action in pursuit of wellbeing. The collective impact is what is going to damage. I think we have to deal with that and draw the implications for individual action. Part of the solution will be technological, but not all. I think it is possible, because on the local scale, let's say within a family, lots of people behave altruistically. There are lots of studies of altruistic behavior. I don't see why we couldn't manage that from a larger scale also. But, that is where I might be called naive.

Question: In terms of adaptive management, let's assume that you are right. What would a university or college or faculty of agriculture need to be like in order to implement what you have been talking about? Do we have a vision of where do we need to go?

Niels: I think that could be a very interesting discussion point for the whole group. It is a difficult issue. There are two issues; one, what is the vision of such a faculty, and two, how you get there -- the management of change. I think it is easier to describe the vision. One thing that would be very important would be to design curricula where students can draw their own conclusions from what they see so that we need to move away from a disciplinary focus, to a more assistance like focus with an emphasis on

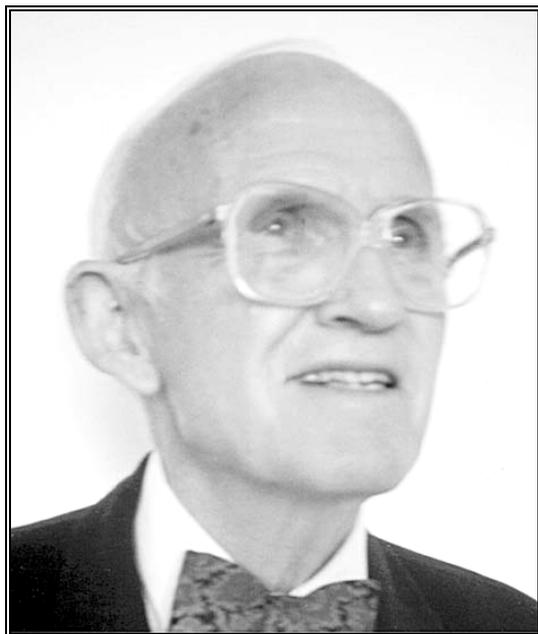
problem-oriented cases. That is one way I would go -- training students from the start much more broadly than a disciplinary focus, and then let them pick areas according to their interests, the areas they want to specialize in. We are having a meeting in Wageningen in a few weeks time on integrated design in agriculture and what we want to do is to think about how we can at least, bring closer together the soil sciences, or the earth and the life sciences on one hand, and the social sciences on the other to begin to integrate the thinking about planning, about the design of green space, and the design of the biosphere. As long as we use the Internet to create an even greater social sharing for things like BMWs, I am not sure whether it is so helpful. But, it can be used very positively too. I have a student who has used the Internet and computer facilities to help groups of people begin to realize the ecological footpaths of their own activities. That was a very fascinating learning experience which had a very good effect on a number of housewives in Venice.

Recognizing Our Own: The Annual Awards Ceremony

The awards ceremony is the culminating event of the conference. It is a special occasion for AIAEE members to recognize and honor people for their accomplishments and contributions to the Association and the profession. A special feeling of warmth and fellowship pervades, as people share, respect, and enjoy the pleasure of renewing old friendships, and committing to new friends.

OUTSTANDING SERVICE, LEADERSHIP AND YOUNG PROFESSIONAL AWARDS

The Awards and Recognition Committee recognized three outstanding agricultural and extension educators: **Mr. Bruce M. Lansdale**, Outstanding Service Award, **Dr. Barbara G. Ludwig**, Outstanding Leadership Award, and **Ms. Ching-Chun Shih**, Outstanding Young Professional Award.



Mr. Bruce M. Lansdale, Outstanding Service

Mr. Bruce Lansdale's contribution to international agricultural and extension education began early in his career when he served as an administrative volunteer at the American Farm School in Thessaloniki, Greece in 1947. The American Farm School is a boarding school for over 200 Greek youth who desire to further their education in agriculture. He was Assistant Director of the School from 1952-1955, and served as Director from 1955 until his retirement in 1990. His meritorious contributions could be summarized into several categories. First, his efforts at providing a sound and high quality secondary program to Greek youth, regardless of political or international influences, is without a doubt a major milestone. Students from all corners of Greece enroll at the Farm School to learn first hand agricultural knowledge which they can later use upon returning to their homes. Bruce always assured that the Farm School

used the latest technology and effectively involved the school cropland and animals to provide a truly hands-on learning experience for each student. Through the years, Bruce made sure that the Farm School was on the cutting edge of technology in instructional practices, agricultural knowledge, and faculty expertise. Second, his work went well beyond the secondary program. The Farm School, under his leadership, became an adult training center for all of Northern Greece by sponsoring training classes for rural men and women and professional inservice education for extension agents. These activities became so successful as an adult learning model that eventually the Government built an adult training center complete with lodging and meal facilities on the Farm School grounds. And last, through Bruce's leadership, the Farm School became a leader in new agricultural innovations. Among the new technologies introduced were pasteurization of milk, mechanized hatching of chicks, modern facilities for dairy cows and poultry, and mechanized equipment for farm work.

Besides his meritorious contributions to Greece, his book, Master Farmer, has become a classic. Developing countries have come to realize the sage points in this book are truly proven practices that one should follow in development work.

Bruce's recognition by his peers of somebody who makes a difference in the lives of individuals, organizations, and governments grew steadily through the years in Greece. But now, many throughout the

world are aware of his vast depth of knowledge and experience that he has to offer others. The Fulbright, a program that recognizes promise in individuals was first. Bruce assumed a teaching role at the Farm School in that program. Next, was the groups of professional educators who came annually from all over the world to the Farm School to learn his secret of management of an educational enterprise in a sometimes less-than-perfect environment. They wanted to know how Bruce could manage an educational program and an operating farm, and do both effectively. These annual visits by professional agricultural and extension educators prompted Bruce to develop a summer “Methods and Management of Practical Educational Programs” at the Farm School. This program ran for five years and involved 64 individuals from 18 countries. The highlight of these seminars was Bruce’s presentations on POLKA, or his time-tested management guidelines. But, he would probably say one of the highlights of his recognition was when he started to be actively involved with AIAEE and was asked to provide wisdom-sharing keynote addresses at the annual meetings, which always received standing ovations. Finally, peer recognition is evident with his past and continuing work not only in Greece, but in Albania, Bulgaria, Honduras, Malawi, Nepal, Nigeria, India, and Indonesia.

Bruce’s dedication was focused on the student learner, whether it be a youngster who had no home or worldly goods, a peasant farmer who still used cultural practices that violated the environment, the progressive farmer who could always be a key link to other farmers in the community, or the new expatriate consultant who had much to learn about international consulting. His basic premise was that the development of the whole individual must come first. For example, a person with a big head and small hands, or a person with big hands and small head must be changed if they are to be good learners and effective workers. His dedication in life has been to help people from all walks of life develop their critical thinking abilities, but never to the point that the hands could not still be used to perform tasks that apply one of the basic principles of learning in our profession, namely that of practice.

The belief that education “must start where the person is” has been a basic tenet of Bruce’s approach. This is illustrated in his resourcefulness of using the human and environmental resources in a most effective and efficient manner. For example, he would suggest to farmers that they start with 50 chicks rather than 500. Or, that they should start with a half hectare of wheat and not five. For teachers, they should start with visual aids that were handy and related to the topic and not waste precious time running around looking for things that were hard to find. For extension agents, they should gather their groups under a shade tree, and not balk at teaching a group just because tables, chairs, chalkboard, and an overhead projector were not available. The point is that Bruce always took into account what was available and how it could be used in an effective manner, and he would practice this resourcefulness of human and environmental resources as he taught others.

Most people, when they approach retirement or once into retirement, have decided that they have made their contribution to the world and now it is up to the younger generation. Not so with Bruce. Since his retirement, Tad (his wife) and Bruce have continually been in demand to come to this meeting, or go to this country for Volunteers for Overseas Cooperative Assistance (VOCA), or attend a meeting on the spur of the moment realizing that it will not conclude until midnight. It must also be mentioned that in many of these sustained efforts Bruce did not receive any consulting fees, but offered his time, services, and expertise without the expectation of a monetary reward. His personal and professional ethics were that it was his obligation to share with others what he had learned over the years with the hope that he could help others avoid mistakes and pain as they helped others to grow.

In his many travels and educational assignments, Bruce has the knack of being able to work effectively with people of various personalities, levels of sophistication, and different job titles, from the peasant to the president. His sensitivity to people, their faults, and their strengths enables him to use his magical story-telling to make a point such that all can understand the real meaning of the message. His Hodja stories are world class entertainment as well as the vehicle to convey messages that make him so popular

and effective. In fact, a key characteristic of people who practice and/or exhibit cooperative skills is that they can communicate and work with all people in all settings to reach a common goal. Hodja has served him well, and he has served the legend of Hodja with pride as he has perfected this unique, teaching approach to rendering outstanding service to the agricultural and extension education profession.

Gratefully acknowledging the award, Bruce remarked:

I was told I would get a Hodja story for receiving this award. I am reminded of a man that died and the preacher said he was a drunkard and everything under the sun. He had gone away and finally died of this liver problem. The priest in his local church got up and started singing all the praises for this great man, saying he was this and that. His wife who was sitting in the front row with a little kid said, "Hey Johnnie, go look and make sure that is your dad they are talking about."

I will tell you one of my more favorite Hodja stories because it relates well to you. His "tiraki" (apprentice) said to him one day, "Hodja, everybody says you are good, does that mean you are good"? "No," said Hodja. "I suppose if they were to say you are bad, does that mean you are bad"? his tiraki added. "No" again Hodja responded. "How could you tell"? the tiraki said. "Well if the good people say you are good, and the bad people say you are bad, that is when you are really good. But you know how hard it is to tell which are the good people and which are the bad people" said Hodja.

Thank you for being good people.

Dr. Barbara G. Ludwig, Outstanding Leadership

Dr. Barbara Ludwig has demonstrated continual dedication to the Association by serving in several leadership positions, most recently as President and earlier as chair of publications and conference planning committees. She is committed to internationalizing Extension and is actively involved in providing opportunities for Extension professionals to increase their global awareness.

Barbara is extremely organized and efficient in carrying out her duties and responsibilities. She encouraged members of the AIAEE leadership team to work together and helped the group to focus on the strengths of individual members. She always maintains a professional and positive attitude.

Barbara is an excellent role model, especially for younger members in the Association. She has taken an active role in the Association and is recognized for her leadership abilities. Barbara has made significant contributions in Ohio to "globalizing" Extension professionals through special study assignments, and study abroad programs, and as chair of Ohio State University's Extension International Committee.

Quality is a key component of Barbara's accomplishments. She maintains a high standard for others in the AIAEE leadership team to emulate. She is acknowledged throughout the state of Ohio for being an effective extension administrator.



Barbara has published a number of articles on internationalizing Extension, collaborates with Extension professionals in Europe, led an Extension delegation to Taiwan, and continues to incorporate an international dimension into her teaching, research, and outreach activities.



Ms. Ching-Chun Shih, Outstanding Young Professional

Ms. Ching-Chun Shih has made substantial contributions to the profession in service, leadership, and scholarly activity, with outstanding work in scholarly activity, as evidenced by her nine publications, two of them in the profession's premier journal.

Ching-Chun has been active at the local, regional, national, and international levels in education related to international agriculture and extension. She is an exceptionally capable, determined, and hard-working individual. She is one of the first to help whenever assistance is needed and is always ready to attend a seminary workshop, or training to enhance her skills. She is continually on the lookout for new opportunities, not only for herself, but for others. Her AIAEE conference attendance includes 1992 and 1998. She has attended a

number of regional and national research conferences and has presented her own papers and those of others, in addition to serving as facilitator and poster presenter. Most recently, she has completed training sessions in grant-writing, learning styles, and in cooperative learning.

Ching-Chun has served as editor of the graduate student publication at Iowa State University. She has helped with 4-H and other Extension activities, as a resource person and as a program evaluator. She has been a self-starter and a careful and competent research assistant, one who has received top ratings in productivity, planning, and communication. Ching-Chun has been a part of the Vision 2020 Core Team at Iowa State University, and has encouraged other international students to also participate. She is active on committees in the department's graduate student organization, and is a sociable and friendly person, eager to take part in activities, to bring her family, and to encourage others to participate.

Ching-Chun is always watching for new opportunities and new ideas to enhance the profession's interest in teaching and learning. Her doctoral research has taken her in new directions as she has worked with Project Bio to study teaching and learning in biology and zoology courses taught over the World Wide Web. Using her own time and resources, she has become competent in the use of computers for analysis, presentations, and communications. She has an impressive list of computer skills and is an expert in the use of technology in education, and is always willing to share her expertise with others.

Ching-Chun has been a valued research assistant in the Department of Agricultural Education and Studies at Iowa State University. She was one of the few who received research assistantships from the Technology and Social Change Program for two years in a row. As a part of that project, she investigated the role of rural women in Taiwan. She was inducted into the agricultural honorary, Gamma Sigma Delta, in recognition of her achievements. In Taiwan, she was honored as an outstanding staff member of the Pig Research Institute. Her leadership roles have been many and in a variety of organizations.

Ching-Chun is a serious student, very committed to doing well in her classes and her research. She has an impressive number of carefully written papers. Five of her nine papers have been published in nationally

circulated journals or proceedings, and two are regional papers that have undergone a rigorous selection process. She gave an invited presentation of her master's research to the Iowa State University Extension Annual Conference in 1995, and was part of a poster presentation at the AAAE Central Region in 1995.

PAPER PRESENTATION AWARDS

Papers presented at the conference covered a range of topics dealing with theory, research and practice in agricultural and extension education worldwide. They were judged on clarity of purpose, methods and data sources, clearly articulated theoretical/philosophical perspectives, meaningful content, and educational importance. Paper presenters recognized were:

1. Sheila Duffy, Anna Toness and James Christiansen (Graduate Paper Award)
“Internationalization of Land Grant University Curriculum for a Sustainable Environment”
2. Larry Miller (Best Paper Award)
“Research-To-Practice in a Positivistic Community”
3. Wade Miller and David Acker
“Cooperation Between the National Agricultural University of Ukraine and Iowa State University: An Example Linkage Project”
4. Brian Sager and Satish Verma
“Developing and Field Testing Design Parameters for Customizing Agricultural Extension Education Systems in Developing Countries”
5. Julie Tritz and Robert Martin
“Perceptions of Female Agricultural Educators Regarding the Role of Women in Agriculture in Uzbekistan: Implications for Agriculture and Extension Education”
6. Nancy Walker
“That Our Lives Will Shine: Collaborating with Youth for Sustainable Development”

POSTER PRESENTATION AWARDS

Posters were evaluated for technical content, originality, innovativeness, and creativity. Judges questioned, “Does the poster convey a message and does it do that easily”? “Is the topic important”? “Is the display well planned, easily read, and well constructed”? Poster presenters recognized were:

1. Matt Raven, Robert Torres, Michael Newman, Jim Flowers, Gary Moore and Gary Jackson
“A World Wide Web Hypermedia Textbook for Improving Instruction in Agriculture”
2. Matt Baker, Rick Rudd, Ricky Telg and Tracy Hoover
“A Model for Faculty Development: Collaborative Activities Between the University of Florida’s Teaching Resource Center and Zamorano Escuela Agricola Panamericana”
3. Dido Kotile, Robert Martin and Michael Warren
“Indigenous Knowledge Links to Research and Extension for a Sustainable Environment”

Participant Perspectives

Cathy Hamilton, Davison Mupinga and Fredrick Nafukho

Louisiana State University

School of Vocational Education

Baton Rouge, Louisiana

A conference setting -- interaction and networking among participants, an atmosphere of friendship and collegiality, the sharing of knowledge -- usually sparks fresh ideas. We thought it would be instructive to ask participants at this year's conference about their expectations and impressions. We wanted to include more first-time participants from different countries. We interviewed five university faculty -- Dr. Pongsak Angkasith, Chiang Mai University, Thailand, Dr. Mohammad Chizari, Tarbiat Modarres University, Iran, Dr. Gustav Düvel, University of Pretoria, South Africa, Dr. Jim Phelan, University College Dublin, Ireland, and Dr. Niels Röling, Wageningen Agricultural University, The Netherlands -- and three graduate students -- Randy Andreasen and Awoke Dollisso, past and current president, AIAEE University Students Committee, and Mikel Stanek, Iowa State University. They gave us a perspective of how they learned about and what they expected from the conference, the conference theme, format and papers, issues needing to be researched, and suggestions for the Association, the Journal, and future conferences. We thank them for their input.

Networking Works

Different ways by which interviewees came to know of the conference tell us the importance of using a variety of information sources and people networks to get the word out. The Association's membership brochure, the European and Australian conferences, university faculty and graduate students, and personal contacts were cited.

Expectations of the Conference

People had different ideas about who would attend. Some expected to find only U.S. and U.S.-based participants, others an international mix. Dr. Röling was surprised at the extent to which the conference had people from around the world. He remarked "... to be frank ... I expected it to be an American extension educators meeting. But I notice that there are very many international scholars here." In contrast, Dr. Düvel viewed the organization as "...basically an American association." Obviously, the Association is keenly aware of the need for attracting more international members.

Interviewees hoped to gain new knowledge about the field, meet colleagues they knew, make new acquaintances, and hear presentations on different ways of doing extension work. Mikel Stanek remarked he was on a reconnaissance mission, "... to find out what kind of people are in the organization, their mission, and their desires." Notably, he wanted to see how students were integrated in the Association and treated by others. Apparently, he and his fellow students were satisfied that students had a special place, and were playing an important role in the Association.

Meeting leading scientists "you have heard and read about", who have made a contribution to the field, who have used research, extension, agricultural education and technology transfer to help the world's food situation was another expectation which was met to a large extent. Interviewees were impressed with the diversity, quality, experience and achievements of participants. The conference gave them a chance to meet world class professionals. Dr. Chizari hoped to see more scholars from developing countries come to future conferences and make them truly international. Next year's conference to be hosted by the University of the West Indies in Trinidad-Tobago will be the first time the Association will go outside the United States for its

annual meeting. As the Association's international membership grows, one could imagine future conferences being similarly hosted.

The hope of and actually meeting face-to-face a colleague with whom one has communicated via mail was a common feeling expressed by interviewees. At such conferences, people are usually free and open about what they are trying to do and achieve and that is important, remarked one interviewee. Compared to European conferences, AIAEE's conference appeared to have a broader orientation. The major challenge is to address common issues in an appropriate format.

Just meeting people at the conference was to students a good experience. They came to know people who shared a common interest and could build on these commonalities. Randy Andreasen talked of his experience, "You start with a nucleus of people with whom you have common interests; as you go through the conference, your circle of acquaintances, friends and colleagues gets bigger and bigger...to the point of enlightenment."

Conference Theme, Format and Papers

Interviewees felt the theme "Sustainable Development Through Participatory Collaboration" was important, appropriate, and timely. Our agricultural and natural resources are finite and, in some instances, diminishing. Sustainability is therefore crucial. Dr. Angkasith explained how his university through research and education is trying to control the degradation of natural resources by agricultural operations and forest fires in Northern Thailand. Dr. Röling urged consideration of adaptive management as a refined alternative to the more general term sustainability to emphasize people and soft systems methodologies.

The point was made that sustainability implies collaboration -- among institutions, agencies, and people. Everyone needs to be involved to achieve sustainable development. Dr. Chizari indicated that the ministries of agriculture and extension in Iran collaborate with one another and with local communities to promote agricultural development. Dr. Phelan remarked that government departments and scientists are operating with limited funds; hence, collaboration should have strong appeal. He pointed out how departments of extension, economics and sociology were working jointly on a number of issues, using a holistic, interdisciplinary strategy, and benefiting greatly from this cooperation. On the importance of collaboration among people, Dr. Phelan commented, "One of the things I enjoy most about conferences like this is I think I learn more from informal talks with colleagues than from formal technical sessions." Dr. Röling complimented the U.S. for strong participatory traditions in universities and institutions, and among scientists. This kind of focus he felt was not that strong in Europe.

The difficulty of relating all papers to a theme at a conference was appreciated by the interviewees. Many of the papers were relevant, while others dealt in some way with agricultural and extension education, development, and research issues.

Paper sessions were thought to be professional, stimulating, and educative. One shortcoming of the paper session format was not having sufficient time for discussion. It was the general feeling of interviewees that the format of the conference should enable presentation of a few subthemes related to the conference's main theme, accompanied by open discussion, questioning, and in-depth analysis of issues that might arise in the presentations. Dr. Röling recommended using the unique U.S. land grant institutional structure as an example to discuss how facilitation of learning and collaborative action among people and interest groups in an extension system is becoming crucial for designing a sustainable society.

While the quality of papers was generally high, it was felt that we needed to reexamine our research and not do the same things over and over, going around in the same circle. Dr. Larry Miller also made this point in his

award winning paper presentation, calling for a hard look at our research if we are to gain respect for our profession.

At least two papers presented at the conference dealt with newly independent states of the Soviet Union. More paper presentations from these countries should be encouraged.

Research Issues

Some of the research issues suggested by interviewees included natural resource development policy, indigenous knowledge, environmental stewardship, and consumer education in food production and consumption.

With regard to the environment, the point was made that extension and agricultural development personnel had shied away from policy issues. For too long, extension has left policy matters to economists and not attempted to influence decisions in this regard. Furthermore, our frame of reference should be rural rather than farm, because all over the world the numbers of farmers are decreasing, and families are deriving a greater share of their income from non-farm sources. As such, extension has to broaden its focus. This, as pointed out by Dr. Röling, challenges the technology transfer model and points to a new focus on ecological issues. It calls for a different way of thinking: managing the ecology in an adaptive, exploratory, and learning-oriented manner. It implies a new field of ecological economics. Here we do not start with economics. Instead, we say, we have an economy, but given that the ecology is so important, how do we adjust the ecology, using a systems thinking approach.

Besides research, the interviewees felt that we should start solving problems and implementing problem-solutions. That is the way we become educators in the true sense. Simultaneously, work is needed in developing curricula in the field of agriculture. Promising research opportunities with great potential are to be found in the former communist/socialist countries of eastern Europe, observed Mikel Stanek. He saw a great need for agricultural and extension educators to go to those countries and assist with the transformation process taking place there.

Suggestions for the Association, the Journal, and Future Conferences

Interviewees felt that much time was being spent in presenting research and development results at the conference, but not enough time to discuss the question “So what?”, to focus on using results to improve programs and be more effective in our work.

It was suggested that the conference format include issues presented by keynote speakers or panels on the conference theme or subthemes followed by debate and discussion on key points. This would enable people to bring their experiences to bear on the issues and discuss them in an open forum, offering possible solutions or strategies to address the issues.

Most readers appeared to be pleased with the Journal’s content and quality. However, page printing costs were considered prohibitive and perhaps a disincentive, especially for students. Disk and email versions of the Journal were felt to be good options.

Students agreed that the Association was a unique professional group according high recognition to students and involving them as full partners with academic faculty. The student committee chair, Awoke Dollisso, enumerated goals and hopes for students’ participation and the Association in general:

1. Find ways to increase student participation in next year’s conference in Trinidad-Tobago.

2. Encourage student members to invite one or more students to join the Association and attend the annual conference.
3. Work with students to try to minimize transport and other expenses participating in conferences.
4. Work with the Trinidad-Tobago conference planning committee to provide necessary immigration information to international students in a timely manner.
5. Encourage undergraduate students to join the Association and attend conferences.
6. Listen to and work with students on issues relevant to the Association.

Synopsis of Selected Papers

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Six outstanding paper presentations at the conference are included in their entirety in this issue. This is a synopsis of key issues and ideas from a selection of the remaining papers. The papers were reviewed for dominant themes. Five themes were identified: The Role of the Farmer in Agricultural Sustainability; Collaboration in Agricultural, Rural, and Human Resource Development; Innovative Learning Strategies; The Role of the Public Sector in Sustainable Development; Effective Communication in Extension Work.

The choice of which papers to include in this synopsis was guided basically by relevance to the ideas which have challenged agricultural and extension education professionals to new ways of thinking about, experimenting with, and acting on current and emerging issues. This criterion, as also relevance to the identified themes, were used to select 29 papers. The selected papers are grouped under the several themes. Relevant issues and related ideas synthesized from the selection are presented.

The Role of the Farmer in Agricultural Sustainability

Farmers -- what they know, how they think, the quality of their decisions, how they act, what practices they follow, and their attitudes toward agriculture and the environment -- have a critical role in ensuring and enhancing agricultural sustainability. This notion was clearly evident in different ways in conference papers that focused on the theme of sustainable development. As such, farmers should be at the center of sustainable agriculture development efforts. At the same time, clearly recognized was the need for and importance of strong professional support and guidance to see that farmers are equipped with the knowledge and skills to follow sustainable agriculture practices. Therefore, participatory collaboration among all relevant stakeholders -- farmers, extension agents, researchers, agricultural educators, the private sector, and government agencies -- emerged as a corollary, even a necessary condition, for success. Nine papers dealt with this theme.

Adedayo Ayaji and E. Laogun (*Analytical Study of Women Farmers' Preferences for Training Program Design in Nigeria: Case of Oyo State*) used the principle of learner involvement to emphasize that learner needs and preferences for such things as methods, time, duration and sites for training, should be taken into account in training program design. They studied women farmers in Oyo, Nigeria, and concluded that the specific needs and preferences of this group should be considered in planning and implementation to ensure success of training programs.

Teffera Betru (*Conditions of Sustainable Agricultural Development in the Middle East: A Lebanese Case Study*) studied farmers' perceptions of sustainability to conclude that farmers' awareness of both the long- and short-term effects of farm practices on agricultural production and the environment is critical for a satisfactory sustainable agriculture system. He recommended that a continuing education program focused on key sustainable agriculture practices -- appropriate control of insects, diseases and weeds, and environmentally sensitive use of chemicals, including calendar spraying -- should be organized to improve farmers' awareness.

In a similar vein, the importance of providing relevant and timely information to increase awareness and involvement of farmers, and enable them to make better decisions about land use and other sustainable

agriculture practices was emphasized by Dido Kotile and Robert Martin (*Farmers' Perspectives of Sustainable Farming Systems: A Case Study*). They examined farmers' perceptions regarding respect for and values held about land and the environment, how this determined use of the land, as well as changes occurring in land use, and farmers' views of the future. The authors found that farmers conceptualized their views from a number of influential sources -- personal experiences, family members, parents, other farmers, government programs, lenders, private industries, and research.

The need for farming households to adjust to current changes in agriculture was emphasized by James Phelan (*Prospects for Farming Households in the Republic of Ireland*) if they are to remain viable in the marketplace. He argues that the ability of households to adjust to changes depends on the interactions of household characteristics, the farm environment, the physical environment, and the macro-environment as created by the market system or the household. The important role of the farmer in the adjustment process is emphasized.

Farmer empowerment and farmer-centered approaches to agricultural research and extension were advocated by Terry Tucker, Edwin Balbarino and Merrill Ewert (*Informal Farmer Experimentation in Resource-Poor Environments: Understanding Differential Propensity and Capacity*) if sustainable agricultural development is to be achieved. They acknowledge that farmers' knowledge and capacity for experimentation and innovation are central tenets of participatory research and extension approaches, but maintain that the limited farmer-led research projects and extension programs have not incorporated this focus. The authors describe how environmental, social, and environmental changes have adversely affected the Philippine uplands. On a positive note, they show how many farmers are developing sustainable and viable technological options, including agroforestry systems, managed fallows, and alternative cropping systems. At the same time, conditions such as landlessness, near landlessness, and abject poverty mitigate against sustainable agriculture development efforts.

The critical element of professional guidance and support to assist farmers in achieving success in sustainable agricultural development efforts was brought out by Pongsak Angkasith (*Participatory Collaboration for Sustainable Environment*). While it is agreed that the farmer is an important element of the sustainable agriculture equation, equally important are extension and agricultural education scholars and practitioners who guide farmers. Angkasith gave examples of how faculty at Chiang Mai University, Thailand have been actively involved over a 30-year period in efforts to promote sustainable agriculture. Collaboration among the faculty of social sciences, research and extension workers, and the Royal Forest Department have been beneficial to all parties involved. College of agriculture faculty have also worked closely with the highlands and implementing agencies in Vietnam, Laos, and Cambodia. This is a good example of how faculty can design specific programs to involve all stakeholders in promoting the cause of sustainable agriculture development.

Examples of practices that can detract from sustainability were given. Gustav Düvel (*Cultural Factors Preventing Sustainable Stock Production in South Africa*) showed how for decades the problem of overstocking of grazing land, generally accepted to be the major cause of degradation of natural resources in the communal farming areas of South Africa, has not been resolved. A primary cultural barrier in reducing livestock numbers has been the symbolic prestige associated with ownership of cattle. Past efforts to reduce overstocking have failed, and Düvel feels that there is no immediate and acceptable solution to the problem. He recommends that research focus on gathering supportive economic and ecological evidence based on cognition and perceptions of rural and farming communities that could counteract the inherent cultural constraints. Throughout the conference, the importance of addressing ecological issues to achieve meaningful progress in sustainable development was discussed. This implies that the farmer must be made aware of the important role of ecology, especially in relation to environmental degradation and stewardship.

The continuing practice of slash and burn to clear and cultivate land for agricultural production in a Brazilian community was cited by Matt Baker, M. Arango and Peter Hildebrand (*Program Planning and Evaluation in Farming Systems Research and Extension: A Study of the Brazilian Amazon Community of Grupo Novo Ideal*). They developed a model to predict the impact of this and other types of agricultural practices on the environment, both now and in the future, and suggested developing similar models in other situations in different parts of the world to enhance future-oriented sustainable agriculture development.

Both knowing about and practicing weed management practices that would enhance sustainable agriculture were favored by farmers who participated in a study by Dido Kotile and Robert Martin (*Sustainable Weed Management Practices for a Sustainable Environment: Implications for International Extension Educators*). Participating farmers agreed that the quality of the environment should be maintained, and were in favor of education programs to help them understand sustainable agriculture concepts enhancing weed management. Farmers understood the reasons for and used various methods of weed control -- chemicals, crop rotation, soil fertility management, and crop diversification -- as prerequisites for sustaining and improving the environment. The authors present a model for gathering data which can help extension and agricultural workers learn more about sustainable agriculture practices in weed management to ensure proper use of technologies that may be environmentally destructive.

Collaboration in Agricultural, Rural, and Human Resource Development

Collaboration suggests a partnership among those who have a stake in a project or program in the belief that their participation will accomplish desired objectives to the benefit of all parties involved. Collaboration emerged as a dominant theme in a number of conference papers focusing on agricultural and rural development, and human resource development.

Eleven papers were related to this theme. The papers were categorized by the level at which collaboration took place. The levels were considered in an hierarchy of collaboration from the individual, group and system level, to the institutional level, to the international level.

Collaboration among individuals, groups and systems.

The team approach involving professional staff and/or farmers was the strategy of choice in two papers. St. Clair Barker (*Some Constraints to Greater Impact: The Case of Vegetable Farmers in St. Vincent, Trinidad and Tobago*) studied the adoption behavior of farmers over a 16-year period and recommended that teams of representatives from the public sector, private sector, extension, research and farmers design and conduct extension programs. The author indicated that multi-faceted problems now and in the future require a team approach, and maintained that the success of the team is more important than the needs of individual team members. It is necessary to put into place effective and efficient teams to address agricultural and environmental issues.

Vickie Sigman, Pudjo Tjiptono, Hendro Sunarjono and Siti Purnamawati (*Monitoring of Training for Smallholder Commercial Fruit Orchard Development in Indonesia*) also recommended a team approach in their evaluation of a training program in Indonesia. They argue that extension can play a key role in putting together teams to assist communities, as for example in the integrated training approach with fruit producers reported by them in the paper.

Collaboration within families was emphasized by Ching-Chun Shih and Eric Abbott (*Waste Treatment, Extension Education Programs and the Families Operating Hog Farms: A Case Study in Nanton, Taiwan*). They reported that most hog farms studied were operated by extended families and exhibited participatory collaboration in a true sense. Men usually took the lead in managing the operations, and women had subordinate roles. Sons and daughters-in-law returned to work on the farms once waste treatment facilities

were built. Collaboration beyond the family units involved neighboring farms as the latter bought solid waste generated by the waste treatment on hog farms. Farmers also collaborated by voicing their opinions to the government. This bridged the gap that had previously existed between farmers and the government. A measure of sustainability was achieved as the treated waste water and gas produced from the treatment process were utilized, and the solid waste sold to farmers.

Abdillahi Alawy and N. McCaslin reported on two studies in Kenya in which they emphasize the important role of collaboration at the system level. In a study dealing with the question of whether selected cultural factors influence accessibility of extension services (*Accessibility of Extension Services in Kenya: Do Religion, Language and Ethnicity Play a Role in Service Delivery?*), they found that lack of collaboration between farmers and extension agents in the Kwale region of Kenya interfered with the success of the extension program. Differences in language, religion, and ethnic backgrounds of extension staff and farmers detracted from the effectiveness of extension services delivered in the region. To overcome these barriers, they suggest that a management information system be installed to educate farmers on the importance of cooperating with extension staff regardless of the latter's background. At this stage in Kenya's development, diversity and integration should be regarded as a source of strength and not allowed to degenerate into division and conflict. Therefore, it is important that researchers, extension agents, and policy makers strive to enlighten people of the need to work collaboratively.

The second study (*How Can Extension Services, Low Resource Subsistence Women's Groups Better Relate to Environmental Conservation*) by Alawy and McCaslin advances the notion that the "fit" between rural women's collective strategies and implementation strategies of extension policies in Kenya has not received attention. They make the point that the benefits of women's groups are most likely to be realized when extension agents adopt collaborative approaches which take into account the needs and interests of these groups.

Weak linkages among extension, research, and education were found by Gholamreza Pezeshki-Radd, Hossein Agahi and Rama Radhakrishna in their assessment of county extension educators' activities in the northwestern region of Iran (*An Assessment of County Extension Educators' Activities in Northwestern Region of Iran*). They suggest that activities which could facilitate and enhance linkages among these systems be identified and nurtured. The lack of or ineffective links among research, extension, and education is a common pattern observed in developing countries due to organizing philosophies of government bureaucracies and/or the segregated approach to technology generation, transfer, and application. Generally, these functions are not coordinated, researchers do not address practical problems and needs of farmers, and the quality of resident teaching does not meet the needs of extension staff. Obviously, for a well-integrated functioning system, research-based information needs to be extended to farmers via extension. Steps need to be taken to build strong links and ensure collaboration.

Benefits of a collaborative linkage among aquaculture education programs at the secondary level in states of the Northeastern United States were assessed in a study by Gary Wingenbach, Stacy Gartin and Layle Lawrence (*Collaboration in Northeastern Aquaculture Education: The Teacher's Perspective*). Benefits included increased student participation and peer tutoring. To ensure sustainability of the aquaculture education programs, the authors recommend addressing existing barriers such as limited facilities to house the program, high costs of aquaculture teaching equipment and remodeling existing aquaculture facilities, low teacher knowledge, and the need to care for fish on weekends and holidays.

Collaboration among institutions.

Two papers addressed collaboration at the institutional level. Larry Miller and Barnabas Dlamini (*Collaborative Efforts to Restructure the Faculty of Agriculture at the University of Swaziland*) described the benefits from collaborative efforts spanning a decade between The Ohio State University and the

University of Swaziland's faculty of agriculture. Both institutions improved their academic programs and enabled faculty to experience positive professional growth, and provide better service and instruction to students in traditional and outreach programs. For the University of Swaziland, other significant benefits included broadening of undergraduate and graduate programs, increased outreach capacity, enhanced teaching and learning resources, and innovative teaching strategies. For individuals at both universities, the institutional links helped establish and nurture profound personal and professional relationships that have continued over the years through better communication and creative and productive projects. One significant lesson alluded to by the authors, which has been corroborated in other collaborative experiences, is the far greater achievement that long-term projects produce over shorter-term projects.

An example of extensive collaboration at the interagency level in the state of Connecticut was provided by Latif Lighari and Nancy Bull (*The Impacts of Interagency Collaboration for Extension Programming on Downsizing and Decentralizing*). They described how the state extension service managed to offset downsizing (one-third reduction in personnel) through collaborations with state and local agencies to provide critically-needed extension programs to clientele. Collaborations with 54 different agencies over a ten-year period were reported. Decentralized programming and decision-making by extension management facilitated the collaborations.

International collaboration.

Experiences from Africa were described in two papers focused on enhancing collaboration among countries. Reviewing pre-World Bank and World Bank assisted agricultural education programs in sub-Saharan Africa, Deirdre Birmingham (*Developing Human Resources for Agricultural Extension Services: The Experience of the World Bank in sub-Saharan Africa*) concluded that pre-service programs continue to be seriously weak. Unless these are improved, extension services will have to devote scarce resources to remedial training efforts. The author recommends that training should be viewed as a vehicle for strengthening institutions and a strategic investment to develop extension's human resources in sub-Saharan Africa. From a collaborative standpoint, countries in the region should have a common, long-term goal of investing project (donor) funds in human resource management policies to strengthen institutional capacities, and ensure that research and extension systems in their countries cooperate with one another to promote professional expertise. For their part, donors could promote collaboration in the region by sponsoring forums at national and regional levels for policy makers and administrators. In addition, there is urgent need for regional roundtable talks among African nation governments and donors to discuss new modes of cooperation in agricultural education. The author points out that African researchers, scholars, and planners face a major challenge of collaborating with each other and peers in other countries so as to build the human capacity to do things for themselves and assume responsibility for their own economic and social development.

Rakey Cole (*Extension Approaches for a Sustainable Environment in the Sene Gambia Region*) used an action research approach to involve major agricultural development players (research, extension, farmers, and non governmental agencies) in Senegal and Gambia in a rice demonstration project and a regional workshop to study how collaboration could be enhanced. Each player has individual and collaborative roles within and across countries. The research was intended to reveal problems in and strategies for collaboration. Problems identified in the demonstration project included inefficient use of resources and differing technology recommendations by and lack of communication among multiple players. Strategies suggested in the one-day workshop for the several players from both countries included pooling of resources and complementary activities, organizing regular meetings and exchange visits among players to share experiences and ideas and plan specific collaborations, and utilizing a collaborative approach to combat field problems and reduce farmer dependency.

Innovative Learning Strategies

Several presenters discussed innovative learning strategies for facilitating learning in the context of current and emerging societal trends.

Niels Röling (*Extension Training: The WAU [WOW] Experience*) drew on the structural organization and processes at Wageningen Agricultural University, The Netherlands, to posit that extension is increasingly moving into the business of facilitating learning, of helping people to take effective action. Such action was grounded in technology, economic strategy, and concerted action involving consensual problem solving. Extension has important roles to play in all three domains, but equity and ecological imperatives are shifting Extension's paradigm from technology transfer and advisory work to process facilitation.

Kevin Moore (*Facilitating Collective Learning: A New Opportunity for Extension Education*) provided an interesting experience of collective learning groups in New Zealand involving producers, extension consultants, agribusiness personnel, and researchers. All partners were bound together in an educational mission with benefits accruing to them all. The evolution of learning groups over time provided extension educators the opportunity to assume a new role of facilitation of the groups. This non-traditional learning approach was good not only for extension but farmers as well. It also created new and exciting educational choices for New Zealand farmers, which could serve as a model for other countries.

Guidelines for the new role of facilitators of collaborative learning were suggested by Roger Steele, Erik Nielsen and Emmy Mbozi (*Facilitating Participation and Collaborative Learning in Pluralistic Environments*). The authors examined and reported on recent development trends, giving specific consideration to the increase of pluralism worldwide, and what this implies for community learning (as distinct from individual learning) in the context of such dynamic trends as democratization, decentralization of government services, and enhanced participation of local groups, organizations, and communities in decision-making. They argue for the stimulation of more learner-centered, interactive, and critically reflective modes of learning, and believe that the new pluralistic climate will encourage local-level participants to take charge of and control their own development. The authors conclude that "...the new demands for collaborative learning will only be met by teams of collaborators who (a) understand that transformation of experience is the essence of learning, (b) can stimulate the process of critical learning, (c) are willing and able to surface assumptions, including their own, and (d) nurture conditions for dialogue that give rise to accumulation of social capital within communities."

The Role of the Public Sector in Sustainable Development

A key responsibility of national governments around the world is to provide a conducive environment that can promote social and economic development, and build human capital. Dynamic political, social, and economic changes are constantly occurring. How governments respond to these changes will generally determine the level of success in development and growth. Four papers focused on the theme of societal change and transition, and the response by the public sector. They implied that governments had an important role in addressing sustainability issues, and pointed to evidence showing that governments unwilling to empower people did not have strong agricultural development and extension systems.

Against the backdrop of globalization, the political trends of decentralization and devolution, and market-driven economic policies, William Rivera (*Agricultural Extension Reforms Worldwide: Reflecting and Reinforcing Polity Trends and Other Comparisons*) forecasts that public sector agricultural extension will continue to have a significant role in servicing small farm development, sustainability issues, and natural resource management. At the same time, as a parallel trend, he foresees that market-oriented, private sector extension will have an important place in national and regional development.

Henry Bahn and Donald Evans (*Influences of Polish Extension on Post Communist Transition*) described the social, political, legal, economic, and institutional adjustments that were made in the transition from communist to democratic market economies in central and eastern Europe. Specifically focusing on Polish extension, they indicate how a complete transformation took place in support of emerging needs and the changing political, social, and economic situation. Collaboration between extension clientele and staff is seen as having an important role in identifying workers and linking them to key elements of transition. The Polish agricultural and rural environment is viewed as an incubator of future development for countries with literate populations and an existing infrastructure that is not overwhelmed by chronic poverty, malnutrition, and political instability. The authors feel that the new Polish extension model is a departure from the directed, coercive technology model of the communist regime, in that it can respond to client-defined needs with relevant, science-based programs, and at the same time enhance client capacity to deal with the future.

Government and farmer collaboration is highlighted in Ruth Beilin's description of a program to promote land care and sustainability of natural resources (*The Captured Land: Farmer-Based Photo Elicitation Linking Conservation Knowledge to Production Practice*). Using photographs to enable farmers to visualize, capture and analyze their landscapes as well as see the landscapes of other farmers, the author offers extension workers an interesting technique of working with farmers. Through illustrative photographs, farmers were able to understand what land care is, and why it is important to conserve land. Both researchers and farmers were empowered and challenged to analyze farm landscapes in a way that had not been done before. The author describes the vivid reality of the process "...the farmers hear their own voices describing their photographs...there is both familiarity and confrontation--with their own feelings--as one farmer is haunted by the trees he hasn't planted; and with those of the community--as another sees each hilltop as the families that have moved away from those farms."

Elbert Johnson (*Agricultural Marketing Extension: A Role for the Agricultural Extension Officer in the Caribbean*) reviewed the agricultural marketing situation in eight Caribbean region states to determine if public sector agricultural extension services could have a role in the marketing phase of agricultural commodities. He found that while there are well-developed marketing systems for traditional crops, the marketing services of non-traditional agricultural commodities provided by agricultural marketing agencies or boards are lacking or inadequate and pose severe problems for farmers. The author suggests that extension services are best positioned to fill this void. Extension services have a sound understanding of recommended production systems; they have the ability and experience to communicate effectively with farmers; and they are strategically positioned to interface with production, research, and marketing personnel and organizations. The author recommends that marketing agencies continue to provide services, while extension provides the link, assisting in the effective dissemination and use of information by farmers.

Effective Communication in Extension Work

Communication is said to be effective when the parties involved in communication events understand the intended meanings of messages and provide feedback. Extension education can be thought of as essentially communication among and within research, extension, and clients for the purpose of bringing about behavioral changes. To accomplish this purpose, effective communication is essential. Two papers were selected on this theme for inclusion. They dealt with problems encountered in information dissemination, and the need to identify and discriminate critical elements in the communication process.

Layle Lawrence and Percy Weerakkody (*Major Problems that Affect the Dissemination of Agricultural Information by Extension Agents in the USA*) reported that county agricultural extension agents in the United States encountered a range of information, technical and managerial, economic, and social problems in disseminating agricultural information to farmers and ranchers. Since the study involved a random sample of agents in the country with agricultural responsibilities, the results should be useful to state extension services as they try to make their programs more relevant and effective.

“Providing the right information to the right people at the right time in the right format” was the basic message of the paper *Information Sought from Agricultural Educators to Solving Plant Problems* by David Mustian, Don Schmitt and Ronald Jones. In practice, they saw that this message had to be applied in the following manner: agricultural educators have to proactively respond with relevant, timely information to meet the needs and solve the problems of their target customers using appropriate information delivery methods. Their focus group study of problems encountered by cash crop farmers revealed that target groups--small and individually-owned production unit operators, and large-scale commercial operators--had different technological needs, and required different information sources and methods. The task for the agricultural educator is to keep abreast of relevant information for target producer groups and provide this information in an appropriate manner.

Synopsis of Selected Posters

*Davison Mupinga and Fredrick Nafukho
Louisiana State University
School of Vocational Education
Baton Rouge, Louisiana*

Improving agricultural science instruction and curriculum, understanding and promoting globalization through education, and ensuring sustainable development were major themes of this year's poster presentations. Posters (8) related to these themes were chosen from those presented (15). A synopsis of the selected posters is given to provide readers a sense of how the themes were treated.

Improving Agricultural Science Instruction and Curriculum

The value of experiential learning in vocational agriculture and agriscience programs was demonstrated by Mwangi, Githeko and Wachanga (*Ensuring Effective Training of Secondary School Teachers in Kenya by Improving Teaching Practice*) in their study of teaching practice of Kenyan secondary schools agricultural teachers, and by Bobbitt and Hendy (*Modern Teachers' Perceptions of Supervised Agricultural Experience Programs*) in their work with teachers on supervised agricultural experience (SAE) programs in Michigan. A significant recommendation of the Kenyan study was that supervisors should help students to improve their presentation skills. Teachers in the Michigan research study had positive feelings about SAE, and felt the need to devote more time to these programs.

Faculty improvement was the focus of a poster presentation on the development of a web-based, multimedia textbook for faculty use, and a second presentation on a collaborative faculty development model. Raven, Torres, Newman, Flowers, Moore and Jackson (*A World Wide Web Hypermedia Textbook for Improving Instruction in Agriculture*) presented their 18-unit textbook. Each unit includes content, hypertext links, interactive tests, and brief video and audio vignettes. Suggested benefits from this tri-state effort included improved teaching, avoiding duplication in developing similar material, and dissemination of the concept of on-line learning. Baker, Rudd, Telg and Hoover (*A Model for Faculty Development: Collaborative Activities Between the University of Florida's Teaching Resource Center and Zamorano Escuela Agricola Panamericana*) showed how teaching had been enhanced through a collaborative faculty project between the University of Florida's Teaching Resource Center and the Zamorano Escuela Agricola Panamericana focused on faculty needs assessments, exchanges, and teaching improvements through portfolios, evaluations, syllabus and test construction, and other areas.

Understanding and Promoting Globalization Through Education

An example of a study-abroad program offered by Iowa State University and the University of Guadalajara, Mexico, was used by Carr (*The Strength of the Weak Ties in International Agricultural Programs*) to show how U.S. students gained a better understanding of Mexican culture and agriculture through classroom and field interactive experiences. Andreasen and Stanek, in their presentation of multi-cultural appreciation (*Rationale for Developing Multicultural Appreciation Through Educational Simulations*), emphasized the need for and value of acquiring a global perspective, and used educational simulation to integrate global intercultural knowledge and skills into learning strategies.

Ensuring Sustainable Development

Successful sustainable development programs were shared by Penrose and Samples (*Holistic Pest Management: Framework and Resources for an Effective Educational Program*) on holistic pest management education, and Dollisso and Martin on dairy cattle cross-breeding (*Reflections of a Project Manager: Myths, Barriers, Strategies, and Successes in Durame Cattle Crossbreeding Extension Programs*). The pest management presentation from Ohio State University highlighted the need for a credible, research-based information system to enable diagnosis of pest infestations followed by appropriately focused, least-toxic treatment measures, and cited a series of education programs offered to various interest groups. The dairy production poster showed how myths and barriers surrounding cross-breeding of an exotic breed with native cattle in a district of Ethiopia were dispelled by the practical demonstration of cross-bred animals yielding more milk and returning higher income to farmers.

AIAEE Program Goals

The program of activities of the Association for the ensuing year is planned at the conference by a number of program committees. Committee chairs are assisted by conference participants who work in committees based on their interest and expertise. This structure and operating procedure work well, generating ideas and sustaining interest and interaction at the conference and continuing thereafter.

During the conference, committees meet, plan, and present the plans to the membership. The Association's leadership team, which includes chairs of the several committees, reviews and approves the plans, and publishes a program of activities of the Association.

Given below is a synopsis of the 1998-99 program goals established by each committee.

Conference Planning:

Jan Henderson, Steve Maximay, Dunstan Campbell, Satish Verma (co-chairs)

1. Organize the 1999 conference in Trinidad-Tobago.
2. Begin planning for the 2000 conference in Washington, D.C.

Publications:

Rama Radhakrishna (chair)

1. Publish four issues of the Association's newsletter "The Informer" to include features, views, news, reviews, a column on international programs around the world, and articles by regional editors.
2. Create students and members list serves.
3. Refine and expand AIAEE home page to include back issues of the Journal, constitution and bylaws, and membership database.

Awards and Recognition:

Wade Miller (chair)

1. Recognize achievements of members through the annual outstanding leadership, service, and young professional awards, and the best paper and poster presentation awards, and publish names of current and past awardees for archival purposes.

Constitution and Bylaws:

James Christiansen (chair)

1. Maintain registration and manage use of the logo.
2. Provide constitution and bylaws information to interested groups.

Resolutions:

William Thuemmel (chair)

1. Audit, solicit, and get approval for new resolutions.

Legislative:

David Giltrow, James Long (co-chairs)

1. Assist membership in educating organizations and legislatures concerning foreign and international trade issues, including agricultural trade.
2. Inform membership of legislative and policy issues concerning World Bank, FAO, USAID, and NGOs through AIAEE's web site, annual meeting, and member-to-member contacts.

Scholarly Activities:

John Richardson, Latif Lighari, John Crunkilton (co-chairs)

1. Solicit and arrange for review of paper and poster proposals for 1999 conference.
2. Select papers and posters and publish conference proceedings.
3. Organize paper presentation sessions, including session chairs, discussants, and judges.
4. Establish committee duties, guides, and procedures.
5. Publish Volume 5 of Journal.
6. Increase Journal subscription.
7. Provide effective editorial leadership for the Journal.
8. Collaborate with other professional journals.
9. Continue and publicize Spanish translations of abstracts.

Membership:

Jim Diamond (chair)

1. Review previous survey of past AIAEE members.
2. Promote sale of member certificate.
3. Promote AIAEE display through "The Informer", web site, and conferences.
4. Expand database to publicize AIAEE conferences and calls for papers/posters.
5. Promote AIAEE membership among private sector, non-profit, and for-profit organizations involved in agricultural training/Extension, and among undergraduates.
6. Establish AIAEE chapters in other regions of the world.
7. Establish database of permanent addresses of members temporarily residing in the US.
8. Provide accommodation for Spanish speakers at AIAEE activities.

University Students:

Awoke Dollisso (chair)

1. Raise funds for presidential scholarship.
2. Increase communication network among students.
3. Assist with survey of past AIAEE members.
4. Solicit sponsors for university students to attend 1999 conference.

AIAEE Business Report

Significant business of the Association conducted at the conference included introduction of the AIAEE Leadership Team for 1998-99; approval of resolutions; presentation of committee reports; information about the 1999 conference.

AIAEE Leadership Team

AIAEE Board

President - Jan Henderson
President Elect - Satish Verma
Past President - Jack Elliot
Secretary - Deirdre Birmingham
Treasurer - Latif Lighari
Board Member at Large - John Richardson
University Students Representative - Awoke Dollisso

AIAEE Committee Chairs

Membership - Jim Diamond
Scholarly Activities - John Richardson, Latif Lighari, John Crunkilton
Journal Editor - Satish Verma (through 12/98); Jim Connors (beginning 1/99)
Legislative - David Giltrow
Constitution and Bylaws - Jim Christiansen
Conference Planning - Jan Henderson, Steve Maximay, Dunstan Campbell, Satish Verma
Publications - Rama Radhakrishna
Newsletter Editor - Rama Radhakrishna
Awards and Recognition - Wade Miller
Resolutions - Bill Thuemmel

Resolutions

Resolutions approved by the membership of the Association.

1. Recognize David Dominguez, Ph.D. candidate, Department of Agricultural and Extension Education, Pennsylvania State University, for translating into Spanish abstracts of articles in Volumes 1, 2, 3 and 4(1) of the Journal.
2. Recognize and thank the AIAEE Board (Jack Elliot, President; Jan Henderson, President Elect; Deirdre Birmingham, Secretary; Latif Lighari, Treasurer; John Richardson, Board Member-at-large) for investing time and energy to promote the Association and successfully organize the 1998 conference.
3. Recognize Satish Verma, Journal editor, for his work to advance the mission of the Association and the development of the Journal.

Committee Reports

Committee chairs presented reports of the discussions in their respective committees, and goals and activities for the coming year. Each committee's goals are shown in "AIAEE Program Goals" in this issue. The document "Program of Activities" will list goals and activities of the different committees for 1998-99.

1999 Conference Information

Steve Maximay, Managing Director, Plant Pro Estates, Trinidad, and Dunstan Campbell, Outreach Lecturer, University of the West Indies, Castries, St. Lucia, shared travel, accommodation and tentative program information about next year's conference in Trinidad-Tobago. See "1999 Conference" in this issue for details.

1999 Conference

The Association's annual conference provides a forum to explore what is happening around the world in the disciplines of agricultural education and extension education. Next year's conference will be in the Caribbean islands of Trinidad (March 21-24) and Tobago (March 25-27). The University of the West Indies, Faculty of Agriculture and Natural Sciences, St. Augustine, Trinidad, is our partner in this effort.

The conference theme "Revisiting Extension before the 21st Century" is both timely and provocative. We can engage in dialogue about the history and future of our profession and discipline from philosophical, theoretical, research, and practical perspectives, and challenge ourselves and our colleagues around the world. Plenary and paper sessions, and poster presentations should provide this opportunity. Informal visiting to exchange ideas, educational field trips in Trinidad and Tobago, and free personal time will enhance the experience.

Preliminary conference information may be of interest. Details will be provided in "The Informer", the Association's newsletter.

Important dates:

- Paper and poster proposals: September 15, 1998
- Full papers and poster abstracts: January 15, 1999
- Hotel registration: February 1, 1999
- Conference registration: February 1, 1999 (early, reduced cost).

Conference hotels:

- Trinidad Hilton, Port-of-Spain, Trinidad (868-624-3111 ext. 6040/41, 800-445-8667 {USA}; 44-0345-581-595 {UK})
- Grafton Beach Resort, Tobago (868-639-0191; Fax: 868-639-0030)

Host contacts:

Dr. David Dolly, Chair, Local Organizing Committee, Department of Agricultural Economics and Extension, The University of the West Indies, St. Augustine, Trinidad and Tobago, W.I., Tel.: 868/662-2002 ext 2076 or 3206, Fax: 868/663-9686, Email: aiace@centre.uwi.tt

Mr. Steve Maximay, Managing Director, Plant Pro Estates, 25 6th St. East Cane Farm Avenue, Trincity Trinidad, Tel.: 868/640-7513, Fax: 868/640-7513, Email: smax@ttemail.com

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CALL FOR PAPERS

AIAEE will accept paper proposal summaries related to international agricultural and extension education issues. Topics related to the 1999 conference theme of “Revisiting Extension Before the 21st Century” are encouraged, but all submissions will be given full consideration. Both research and philosophically-based papers will be considered. The summary should not exceed three double-spaced pages of text. In order to submit a proposal one must be an AIAEE member. Contact Dr. Latif Lighari, AIAEE Treasurer, University of Connecticut, West Hartford Campus, 1800 Asylum Ave., West Hartford, CT 06117, USA, concerning membership information (Tel: 860-570-9063/Fax: 860-570-9008).

New members are invited. Please contact your professional in-country and international colleagues about the opportunity to submit a proposal. More than one proposal may be submitted.

Please observe the following format for each paper proposal.

- Separate title page with names of authors. Include mailing address, telephone number, fax number, and email address of the author responsible for receiving communications from AIAEE.
- Text of Proposal
 - introduction
 - purpose of paper
 - methods and data sources; or, theoretical/philosophical themes (the problem or issue, with attention to the arguments used)
 - results and/or conclusions
 - educational importance
- 4 copies of the paper proposal must be included.

Deadline for submission of paper proposals is September 15, 1998. Send paper proposals to: Dr. John Richardson, Department of Agricultural and Extension Education, Box 7607, NC State University, Raleigh, NC 27695-7607, U.S.A., Tel: 919-515-2380, Fax: 919-515-1965, E-mail: john_richardson@ncsu.edu.

Each paper proposal will be peer reviewed by three respected agricultural and extension education scholars. Corresponding authors of paper proposals will be notified in November 1998, and paper specifications given to those accepted for presentation. Presenters will be required to register for and pay the conference registration charge. Also, when submitting a paper proposal, please indicate if you are willing to be considered for participation in the poster session should it not be accepted in the paper session.

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- Separate title page with names of authors. Include mailing address, telephone number, fax number, and email address of the author responsible for receiving communications from AIAEE.
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 - introduction
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 - if part of research project, methods, data, and results and conclusions
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Technical content/information	20
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Creativity of presentation/ideas	15
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Neat and well constructed	<u>5</u>
TOTAL	100

Deadline for submission of poster proposals is September 15, 1998. Send three (3) copies of the proposal to: Dr. John R. Crunkilton, Associate Dean and Director of Agricultural Technology, 1060 Litton Reaves Hall, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061-0334, U.S.A., Tel: 540-231-6503, Fax: 540-231-6741, Email: jcrunkil@vt.edu.

For more information, contact Dr. Crunkilton.

Award-winning Papers

INTERNATIONALIZATION OF LAND GRANT UNIVERSITY CURRICULUM FOR A SUSTAINABLE ENVIRONMENT

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Outstanding graduate research paper from the Fourteenth Annual Meeting of the Association for International Agricultural and Extension Education, Tucson, AZ, U.S.A., April 16-18, 1998.

Abstract

A need exists to prepare future leaders to manage for a sustainable environment. Economic, ecological and social issues, global in scope, necessitate that managers of natural resources understand and address problems holistically. Environmental sustainability requires broad and long term perspectives. The internationalization of the Land Grant University (LGU) curriculum is an important mechanism for building the human capacity necessary to manage for a sustainable environment. This paper asks and discusses four questions: (1) Why is managing for a sustainable environment desirable? (2) Why are LGUs, in particular, the vehicle to achieve improved management for a sustainable environment? (3) Why is internationalization of LGUs important in achieving a sustainable environment? (4) Why is internationalizing the LGU curriculum so important? The paper concludes that although LGUs have made strides to internationalize research and extension, they have neglected curriculum. Internationalizing of curricula at LGUs remains a crucial step in preparing effective natural resource managers.

“Whereas the proximate causes of biodiversity loss are likely biological, the ultimate causes are likely social, economic, and political.” (Forester & Machlis, 1996)

“The need for societies to have the capacity to respond to changing environmental circumstances and to act upon environmental problems is widely recognized as one of the fundamental principles of sustainable development.” (OECD, 1994)

Introduction

This paper discusses the relationship amongst a sustainable environment, human capacity, and the internationalization of the LGU curriculum as a means to building human capacity in order to manage for a sustainable environment. There are increasingly greater challenges facing natural resource managers as a result of accelerating population and a diminishing natural resource base. LGUs play an important role in building the human capacity of present and future natural resource managers. Internationalizing of their curricula is an important step in this process.

Purpose

The purpose of this paper is to illustrate that internationalizing of the LGU curriculum is an important but neglected mechanism for building the human capacity necessary to manage effectively for a sustainable environment. An internationalized curriculum prepares natural resource managers by broadening the spatial and lengthening the temporal scale of issues under study, thus enabling a more realistic and holistic approach to problem solving. This is fundamental to addressing issues of environmental sustainability. Another intent of this paper is to heighten awareness of the need, provide rationale for, and encourage the internationalization of LGU curriculum, which must be done if LGUs are to reflect the global reality and fulfill their mission of preparing students to be effective natural resource managers.

Discussion

Why is managing for a sustainable environment desirable?

The relationship between human and natural systems necessitates a focus on natural resource management. Widespread land degradation, biodiversity loss, food and fiber security, political instability, an accelerating population rate, rapid change, globalization of economies worldwide, and increasing polarization between rich and poor demand improved natural resource management skills. Increasingly, limited natural resources must be used more productively with less negative impact on the environment. The impact of the historical mismanagement of the natural resource base further requires us to work toward the goal of sustainability. Managers must be aware of and learn how to work within the context of limited natural resources. The ecological, economic, and social factors influencing natural resource problems are extremely complex and interdependent. Understanding and identifying their interrelationships is the crucial first step to making progress toward environmental sustainability. Environmental sustainability

requires improved management at the individual, local, community, regional, and global levels. The environment has not, and does not, respect political boundaries. Consequently, addressing the challenge for achieving a sustainable environment requires approaches that are spatially broad, long term, interdisciplinary, international, and holistic.

Throughout history, individuals and disciplines have attempted to understand the complex relationships that exist between human and natural systems. Although the relationships are still imprecise and there are philosophical and practical disagreements about them, it is clear that nature is dynamic and complex, and humans and nature are interconnected. Human life and the environment are immersed in one system. When we influence nature, we influence ourselves; when we change nature, we change ourselves. Therefore, humans play an important role in the use and management of a finite natural resource base. In fact, as human demands on the natural resource base increase and natural resources diminish, the need increases proportionately to understand further the human-nature relationship in order to develop and use effective management strategies and tools. The ability of humans to understand and effectively manage natural resources is crucial to the reconciliation of present and future human needs for natural resources without destroying the base from which these natural resources are derived.

The precise definitions, objectives, and methods to achieve sustainability vary from ecological, economic, and social perspectives. It is likely that the focus of an ecologist would be on environmental integrity, an economist on economic efficiency, and a sociologist on equity between and amongst generations (Serageldin, 1993). Many definitions of sustainability exist, as a result. In one way or another, however, all reflect the complex interactions between natural and human systems and express concerns about (a) the effects of present day activities on the future, (b) the importance of maintaining ecological processes, and (c) the benefits of improving the quality of life now without denying future generations a similar opportunity (Young, 1992). Sustainable use and management

of the environment upon which humans depend for their livelihood requires a fundamental understanding of not only each of these disciplinary perspectives, but of their complex relationships. Traditional approaches are no longer adequate because they fail to teach about ecological, economic, and social interconnections (Robinson, 1991). Such approaches are too constrained by the disciplinary traditions from which they emerge. Instead, integrated and interdisciplinary approaches to natural resource management are required. We will fail in our efforts towards achieving a sustainable environment unless progress is made to integrate the viewpoints of at least three disciplines -- ecology, economics, and sociology (Serageldin, 1993).

Why are LGUs, in particular, the vehicle to achieve improved management for a sustainable environment?

Many arguments have been made that LGUs are in need of revitalization. Among the numerous calls for reform is the call to train and educate students for a global economy, to use information networks, and conserve the natural resource base. Because of their flexibility and mission given by society, LGUs have been at the forefront of making higher education a national necessity. The ability to stay in touch with the needs of society is a cornerstone of LGU education (Smith, 1986). Important characteristics of the land-grant system and its members as educational institutions are their ability to assess their environment, design constructive change, and initiate those changes. LGUs are well equipped with natural resource management expertise achieved over the years in understanding the natural resource base.

The accomplishments of the land-grant system have been realized through a federal-state relationship that responds to local, regional, and national priorities (Oyer, 1986). When the pursuit of agricultural activities abroad was recognized as being in the best interests of the United States, these activities became the responsibility of the Department of State and are currently being implemented by the United States Agency for International Development

(USAID). The passage in 1961 and 1975 of Title XII of the Foreign Assistance Act provided a congressional mandate for the involvement of U.S. colleges and universities, including the land-grant institutions, in the nation's foreign assistance programs. This act added a fourth element to the land grant mission, that of international involvement. Title XII created a cost sharing/matching cooperative funding relationship between the state and federal governments and land-grant universities. Additional mandates for international cooperation are included in recent farm bills, which make it the responsibility of state and federal institutions to expand international food and agricultural research, extension, and teaching programs. Furthermore, the Secretary of Agriculture is authorized to assist U.S. colleges and universities in strengthening their capabilities for food, agricultural, and related research and extension relevant to agricultural development activities in other countries.

During the 1970s, federal and state governments and LGUs united to form a strategic partnership that had the ability to invest in building long-term relationships with developing countries. At that time, it was recognized that LGUs should and could serve both local and global constituencies. To this end, LGUs established a position of liaison officer to oversee internationalization efforts in research, extension, and teaching. Because the federal government provided funds for research and development, technical assistance, contracts and grants, these functions have driven most international activities at LGUs to the virtual exclusion of teaching. Ideally, the integration and internationalization of activities should take place in all three areas of the land-grant mission -- research, extension, and teaching. Heretofore, this goal has not been aggressively pursued; thus a disequilibrium has emerged (E. Price, personal communication, April 15, 1997).

One of the tripartite purposes of the LGU is to prepare students with the skills, tools, knowledge, and philosophical approaches necessary to manage natural resources effectively. While LGUs have expertise in natural resource management, they lack the

experience in making the linkages among social, economic, and ecological factors. A particular weakness of LGUs is that their curriculum has been too narrowly focused on single disciplines, on state or national issues, and on shorter-term goals. The world today requires that natural resource managers understand the linkages amongst social, economic, and ecological factors and incorporate short, medium, and long-term goals in decision making. Without addressing actual complexities and time scales, LGUs are failing to meet this mission and are failing to take a leadership position in preparing effective future natural resource managers.

Why is internationalization of LGUs important in achieving a sustainable environment?

Globalization is a reality. While the U.S. is still strong, economically and technologically, its predominance has diminished (Olson & Howell, 1984). Seventy percent of U.S. domestic production is exposed to foreign competition. Yet, most citizens continue to act as if the world that counts ends at U.S. borders. The guiding principle of social development has been the internationalization of all aspects of human behavior. The 20th century has been one of enormously accelerating scientific and technological progress and of growing interconnectedness and interdependence in the modern world, a century which has brought many possibilities for establishing international collaboration on a worldwide scale. During this time, it was those peoples and countries most actively engaged in this process of internationalization that achieved the greatest success in their political, social, economic, and cultural development (Merkur'ev, 1991).

The changing role of the U.S. in the world demands that average citizens, as well as public officials, politicians, and business and industrial leaders, develop a better understanding of the international world (Smuckler & Sommers, 1989). This need is undeniable if the U.S. is to remain a leading nation in an era of interdependence and increasing international competitiveness. Leadership in international affairs cannot be developed or exerted in a vacuum. In the U.S., in 1984, a case was made

that the majority of citizens and a significant proportion of our leadership lacked the capacity to understand and respond to international issues. More effective international leadership will emerge only when those who are led understand why and how international issues affect their daily lives. Only then will they demand a more farsighted approach to international decision making. Events over the past six years alone illustrate the importance of analyzing and understanding the international dimensions in higher education against the backdrop of the accelerating internationalization of culture and society (Wollitzer, 1991). Consider events such as the pro-democracy movement in China, the fall of the Berlin Wall, democratic elections in South Africa, Perestroika in Russia, and the Persian Gulf War. There can be no doubt that the scope of international influence on daily life is expanding at an accelerated rate and affecting most aspects of human endeavor.

Many critics of American education agree that an understanding of the culture, politics, language, economy, religion, and geography of foreign lands is essential to the education of American students (Akpan & Martin, 1996). Higher education, with its component activities of learning, teaching, research, and public service, must respond to them. Now more than ever before, a period of greater internationalization of learning is developing with increasing worldwide exchange of scholars, students, and ideas. The scholar is now becoming less the citizen of one nation and more a citizen of the academic world, thus living more and more in two worlds, the international and the parochial. According to Kerr (1991), the modern university, wherever it may be in the world, represents a new convergence of national purposes for higher education with one foot planted in the nation-state and the other in the pursuit of pure knowledge. Institutions of higher learning should be global, devoted as they are to universal learning, yet still situated in a world of nation-states.

Kerr (1991) envisioned a global community of higher learning in which each university's unique strengths should be accessible to all as

part of a single learning system. He describes a model university as one in which national purposes and universal learning come together, to include a third converging element: explicitly international purposes for higher education. The two laws of motion tugging at higher education are the internationalization of universities and the nationalization of the purposes of higher education. In higher education, as in the life of nations and in virtually all other aspects of human experience, one thing is certain: everything does truly continue to change. The world's thrust towards international cooperation and competition will exert pressure upon universities to change with them (Wollitzer, 1991). Therefore, leaders and faculty of institutions of higher education must assure that graduates will have the knowledge to understand complex global forces that will have impact on their lives by putting priority on the international and comparative dimension of their programs.

LGUs now serve a complex and extensive information society where the focus is knowledge, information, and problem solving. The "product" of LGUs is largely in the form of human capacity or "experts." This is especially true for colleges of agriculture because of their need to understand the global economy and America's place within it. For some, the fact that land-grant institutions are situated in nation-states causes a perceived conflict of interest and has contributed to slow progress towards reform of LGUs, in general, and specifically in the internationalization of their programs. Fundamental to the LGU mission is the teaching of students; therefore, LGUs must adapt their teaching programs to reflect the realities of a globalized environment. To not reflect global actualities in the teaching programs of land grant institutions adversely affects students' abilities to understand and function effectively. Incorporating an international focus into the curriculum of LGUs enhances domestic teaching, research, and extension programs by equipping students with the knowledge and skills necessary to operate optimally in today's world. Moreover, doing so recognizes and reinforces the interconnectedness of human and physical systems across national borders.

One of the reasons why our society has not focused in the past on managing for a sustainable environment has been a short-term and narrow vision of our world and the future. There is a need to expand our worldview, to have a sustainable, long-term outlook on the environment, and to be inclusive and participatory through the inclusion of diverse groups, such as scientists, extension workers, educators, students, public interest groups, and citizens in management decisions. To build effective human capacity, LGUs must assure that graduates can (a) understand complex global forces, (b) see the larger picture, (c) understand cause and effect relationships, (d) understand interrelationships, and (e) think in longer time scales. With these competencies, future natural resource managers will be equipped to make effective decisions.

Why is internationalizing the LGU curriculum so important?

Curriculum is the vehicle by which skills, tools, knowledge, and attitudes are conveyed to students. Therefore, curriculum is the cornerstone to building human capacity to manage for a sustainable environment. An LGU curriculum that is not international and long range in scope is a serious impediment to preparing for environmental sustainability, as it is precisely such a curriculum that has the potential of preparing future generations to solve problems that will be largely natural resource related. Curriculum that is spatially broad, temporally long, interdisciplinary, holistic, and international in focus shifts the study of problems and their solutions to a level that effectively addresses issues of environmental sustainability. By understanding how natural resource use and degradation are affected across regions and the linkages between environmental causes and effects across political boundaries, it becomes possible to manage natural resources in a sustainable manner. Regardless of whether the management level is the household, farm, region, watershed, or ecosystem, we find that ecological, economic, and social forces impact the natural resources that managers consider in their decisions.

The internationalization of the curriculum at an LGU is mandated by both necessity and law. Internationalization of the LGU curriculum is a natural outgrowth of the tripartite mission to provide education, research, and services to the constituents of the states in which LGUs are located. Inherent in this mission is the fundamental premise that the activities of LGUs change constantly to address evolving needs. The growth of international elements in human affairs is a prevalent force in the late 20th century and a pressing need to which land grant institutions must respond in all aspects of their mission. The fact that Title XII mandates that the LGU curriculum be internationalized has been largely ignored. Indeed, curriculum has been left behind. Although some efforts have been made to internationalize curriculum at U.S. academic institutions, in areas such as arms control, resolution of conflict, and peace and development in the 1980s, these have tended to be the exception rather than the rule. In 1987, the Study Commission on Global Education recommended that the U.S. place more emphasis in the curriculum on world history, on an understanding of one or more cultures in addition to the American culture, on an analytical view of the world as an interrelated series of systems: physical, biological, economic, political, informational, and evaluative, and on the ability to analyze important public issues, both domestic and foreign. However, such recommendations have not been fully incorporated into LGU curriculum.

Although LGUs ostensibly serve the nation-state in which they are located, the technological, economic, social, and political factors have combined to bring many scholars to the conclusion that internationalizing the curriculum is an essential component of education. The internationalization of curriculum at LGUs is only one component of the reform and revitalization efforts and is presently a priority because it directly impacts society's ability to meet changing needs by preparing capable professionals to function in the global community. In their efforts to meet the ever-changing needs of society, LGUs are undergoing reforms, which include "internationalization."

Within the LGU system, both research and extension functions have been internationalized, to some extent. In comparison, teaching and curricula have not. A principal way in which an educational institution creates human capacity with the knowledge and skills necessary to manage for a sustainable environment is through the curriculum.

There are a number of reasons to internationalize instructional programs and curriculum at LGUs. These include: (a) curriculum is the vehicle through which formal education takes place, (b) past emphasis has been on research, therefore curriculum has lagged behind, (c) curriculum directly transfers skills, knowledge, experiences, and attitudes to students, (d) LGUs must reflect globalization and meet the needs of the U.S. economy, (e) LGUs are inherently international institutions and should reflect this fact in their curriculum, (f) an internationalized curriculum promotes multi-disciplinary and interdisciplinary efforts and integrates international and domestic teaching materials, (g) such a curriculum builds long-term relationships with developing countries and promotes cross-cultural linkages, international understanding, peaceful international cooperation and national security, (h) internationalization fosters faculty updating their knowledge and skills, and enables the U.S. to learn from collaboration with other countries, (i) internationalizing provides opportunities to establish meaningful communication with the foreign students on campuses, which yields increased knowledge and understanding and enriches the training of American faculty and students, (j) LGUs lead society in information generation and technology, and (k) internationalization helps to maintain the LGUs' competitive position vis-à-vis other academic institutions.

Some factors that impede curricular change include: (a) individual personal behavior, including fear, self-centeredness, and narrow vision, (b) organizational and environmental factors (organizational structure, availability of information, institutional direction), and (c) special interest constituencies (administration, curriculum committees, faculty, students, accreditation agencies, practitioners, and the

media). Institutional culture, the traditional image of agriculture, aversion to risk, denial that globalization has arrived, short-sightedness, and ignorance about the importance of international activities and the cost-sharing conflict between states and the federal government are critical factors that have delayed the internationalization of curriculum at LGUs. These impediments should be evaluated and understood at each institution in order that curricular change occurs.

Internationalization can be infused through the flow of new knowledge, the content of the curriculum, the flow of scholars, and the flow of students (McConaghy, 1990). The general trend of internationalization of university education has been to increase activities in these areas: (a) student exchanges and education abroad programs, (b) foreign language study, (c) cooperation in the area of curriculum, i.e., joint publications of textbooks, (d) development of inter-university information networks, (e) establishing joint scientific research projects, (f) joint publishing projects, (g) the role of international organizations and universities in education, and (h) bilateral relations (Merkur'ev, 1991). These activities contribute to, but do not take the place of, explicit internationalization of the content and teaching methodologies of LGU course curriculum.

Conclusion

The roles of LGUs are changing as the world changes around them, but the strong commitment to serve society remains the same (Smith, 1986). Higher education is a necessary part of our lives as a contributor to social and economic development. LGUs have made a significant impact in past years in an economy that was moving from an agricultural to an industrial base. This impact continues today and will continue into the 21st century, as society moves from an industrial to an information economy. For LGUs to be leaders in this changing environment, their curricula must reflect the growing complexities of the trend toward globalization and the interconnectedness between human interactions and the natural world. Although LGUs have made strides to internationalize research and extension, they

have largely neglected curriculum. The internationalization of curricula at LGUs remains a crucial step in preparing students to manage for a sustainable environment.

If you are thinking a year ahead, sow seed.

If you are thinking ten years ahead, plant a tree.

If you are thinking a hundred years ahead, educate the people.

By sowing seed, you will harvest once.

By planting a tree, you will harvest tenfold.

By educating the people, you will harvest one hundredfold.

-Anonymous Chinese poet, circa 500 BC

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RESEARCH-TO-PRACTICE IN A POSITIVISTIC COMMUNITY

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Best research paper from the Fourteenth Annual Meeting of the Association for International Agricultural and Extension Education, Tucson, AZ, U.S.A., April 16-18, 1998.

Abstract

This paper will examine the philosophies of research in an attempt to understand where adult educators are in that milieu. The paper will propose that pragmatic philosophy and soft systems methods may hold promise for research in agricultural and extension education and that the profession should prepare researchers for broader scholarly interests.

A legend exists in the Middle-East about a man by the name of Nasrudin who was observed by a friend searching frantically in the roadway dust outside his home.

“What have you lost, Nasrudin,” asked the friend?

“My key,” said Nasrudin.

So the friend helped look for the key on hands and knees. Finally, after no success, the friend asked “Where exactly did you drop it?”

“In my house,” Nasrudin said.

“Then, why are you looking here, Nasrudin?”

“Because there is more light here than within my own house,” replied Nasrudin.

This story forms a backdrop for what will be discussed related to research. The profession should examine the research that we are conducting. The philosophy of science will be examined to define the boundaries of the thesis and attempt to draw implications for our research. The heart of the discussion will feature the concept of “knowing”. Ray (1987) stated that “research is not a process of proving

something but a process of discovering and learning ... we may see problem solving, thinking, learning, research and discovery as one and the same process.”

To extend the analogy, where and how are we looking for our key? Are we tending to look only in the dust of the well-lit roadway, or are we willing to search in other, darker locations, with other means, to move down that road to “knowing”. Here, I am using Krathwohl’s (1985) term, because he discusses research as not necessarily always resulting in the ultimate destination of “to know”, but on the roadway to “knowing”. That is, research moves us toward the solutions to problems, but does not always provide the absolute final answer to the whole research problem. Röling (1974) wrote that our research is not geared to make conclusions (generalizations) but as decisions, a formula for action.

What I want to discuss will not be related to discipline-specific research, but related to “subject matter research” or “problem solving” research (Miller, 1989a). Bonner (1986) related how land grant universities undervalue subject matter and problem-solving research relative to

discipline research. The agricultural and extension education key will not be among the roadway dust of basic research but in the house of the people. Our research tends to be toward “soft” on a soft-hard continuum, and toward applied on an applied-basic continuum, placing it in the less-well-lit area.

Some basic researchers would note that our research is “soft,” does not have clearly defined objectives or hypotheses, lacks focus and rigor, is not programmatic, and is not sufficiently funded. The research is conducted by persons with weak training in research methodology who (a) cannot identify important research problems, (b) do not value research endeavors, (c) conduct research for promotion and tenure rather than for its importance and utility, and (d) have a limited amount of time assigned for research. We would not fare much better if those from the humanities or arts perused our work. Criticism would also come from those subscribing to post-positivistic paradigms. They would view our work as not scholarly enough, not reflective, or not employing critical analysis.

As universities and other agencies move toward interdisciplinary inquiry and project teams are formed, the omission of agricultural and extension education researchers from these groups will not be surprising because they do

not understand what we do or how we can contribute. I have been frustrated, too many times to mention, because international or domestic projects have been submitted by my college or through interdisciplinary teams which had education/training or evaluation components and the proposers saw no reason to include us.

Conceptual Basis

Let us consider these issues from the perspective of “knowing”. Oliga (1988) summarized the basic elements of Habermas’ Interest Constitution Theory (Figure 1) and noted that the three different knowledge types implied different methodological approaches, namely, empirical, hermeneutic, and critical. This theory helps explain much of our position on the hard-soft, basic-applied, and concrete-abstract, active-reflective continua respective to other disciplines. The technical researcher wants to produce “laws”, the interpretive researcher to reach “consensus” and meaning, and the critical researcher to achieve “emancipation” through reasoned choice. Van Manen (1977) noted that each of the three forms of inquiry is distinctive in terms of (a) its way of looking at people and society, (b) the form of knowledge it produces, (c) its logic in use, (d) its methodologies and techniques, and (e) the use to which the knowledge can be put.

Type of Research	Basis of Human Interest	Type of Interaction	Underlying Paradigm	Method/Approach
Technical	Labor	Man -- Nature	Functionalists or Positivists	Empiricism
Practical	Communicative Interaction	Man -- Man	Interpretive	Hermeneutics
Emancipatory	Power	Man -- Self	Critical	Critique

Figure 1. Habermas=Interest Constitution Theory (Habermas, 1972)

The methodological approaches of the empiricists produce objective knowledge which is independent of the researcher, and replicable in other settings. The knowledge also has value freedom in that it is ethically neutral. The knowledge or “discoveries” produced add to the knowledge base in a discipline or, as in the case of hard systems methods, such as engineering, provide technology which produces greater output or more efficient systems of doing things. The philosophy underlying this epistemology is most often positivism. The position is “that science alone represents a genuine form of human knowledge, such that nonscience represents pseudoknowledge or even cognitive meaninglessness or nonsense” (Keat, 1981). Popper (1969), although a positivist himself, argued that while science could be distinguished from nonscience, that did not imply an equivalent distinction between sense and nonsense. The second doctrine of positivism argues that knowledge is the explanation and prediction of observable phenomena through the demonstration that such phenomena constitute instances of universal laws that remain invariable in all regions of space and time (Oliga, 1988).

The methodology of hermeneutics, or interpretive science, includes the “naturalistic”, the “hermeneutics as method”, and the “historical-hermeneutics”. Oliga (1988) wrote that the naturalistic perspective includes the phenomenological symbolic interactionism which seeks to explain how social order, as a real phenomenon, emerges from social action and interaction processes, from which shared meaning in turn emerges. Ethnomethodology seeks to explain how actors employ various cognitive resources to order and make sense of their everyday activities and make some activities accountable to others. Existentialism is concerned with the central lived qualities of

individual human existence and seeks to understand the individual “life-world” from the point of view of those involved, using constructs and explanations which are intelligible in terms of common sense interpretations of everyday life. The belief in hermeneutics is that social reality is distinctive in character and contains a component missing from natural phenomena; it requires a mode of analysis different from that of mere explanation (Oliga, 1988).

Jax (1984) related that interpretive science was conducted to interpret and give meaning to a given situation and that the intent was not to provide broad generalizations. The researcher takes on the role of the people or group studied and attempts to understand the context of the situation within the framework of the participants.

Critique, or critical hermeneutics, is an attempt to mediate the objectivity of historical processes with the motives of those acting within it, the aim being the freeing of emancipatory potential. The approach seeks to remove barriers to understanding that may be operative, without the individuals or groups concerned being aware of them: a critique of ideology (Bleicher, 1980). The task is to render individual and social processes transparent to the actors concerned so that they can pursue their further development with consciousness and will, rather than remaining the end product of a causal chain operative behind their backs (Oliga, 1988). Freire (1987), referring to the adult learner, stated that they are objects of persuasion which will render them more susceptible to propaganda, but this cannot happen if they are critically aware of their situation, then they can act on it. Lather (1991) brings summary to the nature of inquiry in another form (Figure 2).

Prediction	Understanding	Emancipation	Deconstruction
Positivism	Interpretive Naturalistic Constructivism Phenomenology Hermeneutics	Critical neo-Marxist Feminist Praxis-oriented Educative Freire-s participatory action research	Poststructural Postmodern Post-paradigmatic diaspora

Figure 2. Nature of Inquiry (Lather, 1991)

Application

With this backdrop from philosophy, I believe it is clearer as to why agricultural and extension educators have difficulties in communicating about our research and participating in the research of others. Our tradition and our learning related to research methods are couched in the empirical method. However, much of our interest for knowledge production or problem solving lies in practical understanding with our basis in communicative interaction or emancipation.

When the basic scientist is so well versed in the positivistic paradigm and sees the study of nature and the production of value-free knowledge as the ultimate end, how does a person from agricultural or extension education explain the knowledge produced from interpretive or critical research? Or, for those concerned with emancipation, international development, or critical consciousness; how would one communicate such man-self interactions to an empiricist from the positivistic community? "Discovery" is the driving force for the basic scientist, with patents. If the research is conducted to better understand how to educate adults, wherein is the patent? Where is the value-free knowledge, the laws, the discoveries/patents which emerge? Should critics not be examining the man-man or man-self dimensions? Should the standards for research quality or promotion and tenure be determined only from data-based, quantitative research publications? Schön (1983) stated that "in the United States more than any other country except Germany, the very heart of the

university was given over to the scientific enterprise, to the ethos of the Technological Program and to Positivism." Our profession suffers criticism because of our way of knowing and our interest in doing the research.

Critics also note that we do not produce theory from our research. Generalizations are closely related to theory, the difference being that theory specifies the relationship among a set of variables while generalizations concern the extent to which whatever relationships are uncovered in a particular situation can be expected to hold true in every situation. Cronbach (1982) concluded that social phenomena are too variable and too context-bound to lend themselves to generalization. He emphasized that data should be interpreted in context rather than reducing the context to arrive at generalizations, with local conditions becoming primary, and with helping "people use their heads instead of constructing generalizations and building theory". In essence, we should focus upon research which will permit us to put it into practice.

I suggest we look elsewhere than positivism for our key. The key may not be found in the well-lit dust of the road. The key may lie in what can be applied, in the identification of the problem setting, in a given context, and in a more pragmatic concept of our research philosophy. Let us not be swayed by the preferences of hard/basic scientists with positivistic inclinations.

Carl Rogers (1969) wrote that in educational research "rigorous procedure is considered more

important than the idea it is intended to investigate. A meticulous statistic and a sophisticated research design seem to carry more weight than significant observation of significant problems.” Therefore, a pragmatic philosophy is more nearly in order. Pragmatists use a standard of “workability”. Is the recommendation from the research “workable” in this situation? Truth may be place- and time-specific. The most important question to ask of research remains: “So what”?

Ackoff (1974) noted that most of the real problems of society are “a mess” of interrelated problems and not resolvable with common research methods; they are a system of problems. Consider the “rural decay” problem in the United States today. Consider all the related disciplines which have a stake in that problem, just a few of which would be economic revitalization, educational, sociological, anthropological, medical, or environmental in nature. The problems the public and the legislatures want addressed by universities are often these “messy” problems.

Ulrich (1988), in defining a program of research in such “messy,” soft systems, posed that these are “practical problems”, not unlike those faced by pragmatists such as agricultural and extension educators. He noted that the practical intent is to bring more reason into actual social practice, that theoretical knowledge would bring some “objective knowledge” about some segment of the problem, whereas the practical reason is to secure ethically justified consensus among the stakeholders about norms regulating interpersonal relationships within our world or society.

Freire (1987) wrote that knowing, whatever its level, is not the act by which a bit of knowledge is transformed into a subject who passively accepts the contents others give; on the contrary, it is the curious presence of learners, who are confronted by the world, who transform actions on reality with constant searching, invention and re-invention with each person undergoing critical reflection on the very act of knowing. Knowledge is not extended from those who know to those who do not. Knowledge is built

up in the relation between human beings and the world, relations of transformation, and reflects itself in the critical problematization of these relations.

Miller (1989b, 1991) has proposed that we consider soft systems methodology [SSM] (Ackoff, 1974; Checkland, 1981; Churchman, 1968; Raman, 1989) as a potential strategy for agricultural and extension educators to employ because it deals with problem setting, and involves the stakeholders in the research process in the local context. SSM is not a method to necessarily employ in one specific study, but a philosophical basis for conducting inquiry. SSMs are called “soft” because the problems addressed do not have clear objectives, hard feedback mechanisms, or boundaries. The system is a construct and its objectives and boundaries depend on shared decisions and consensus, and one which I suggest should be explored by our profession.

Within universities, we have become academic cannibals: “eating our own”! Our internal criticisms of each other leak outside to our detriment! I have tried to illustrate a broader definition of scholarship, encompassing other ways of knowing, to alleviate such elitist criticism, as we seek our key. The profession must begin to prepare persons for other ways of knowing while applying strict quality standards for all research and scholarship (Miller, 1990).

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COOPERATION BETWEEN THE NATIONAL AGRICULTURAL UNIVERSITY
OF UKRAINE AND IOWA STATE UNIVERSITY:
AN EXAMPLE LINKAGE PROJECT

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Outstanding research paper from the Fourteenth Annual Meeting of the Association for International Agricultural and Extension Education, Tucson, AZ, U.S.A., April 16-18, 1998.

Abstract

The Iowa State University/National Agricultural University of Ukraine Linkage Project was one of several U.S. Information Agency Projects involving U.S. and Newly Independent States (NIS) universities working together to bring about educational reforms in the former Soviet Union. The purpose of this paper is to highlight the cooperative activities and procedures used to develop the linkage between ISU and NAUU in the area of higher agricultural education. The NAUU and ISU faculty explored curriculum alternatives, prepared and revised curricula, and obtained final approval from national committees. Curriculum reform was further supported through the development of new course materials, and the acquisition of supplies, equipment, and teaching materials. The greatest impacts at the university were the curricula changes in all departments and the Memorandum of Understanding regarding curriculum equivalency, understanding and changing the degrees offered to include bachelors and masters degrees, changes in the structure of university administration, and greater awareness of alternative educational systems.

Introduction

Efforts to globalize agricultural education can lead to a broader picture for students of agriculture and better preparation for their international careers. These efforts can also lead to greater efficiencies in terms of student mobility, language acquisition, and credit transfer among cooperating universities. The

Iowa State University (ISU)/National Agricultural University of Ukraine (NAUU) Linkage Project is one of several U.S. Information Agency Projects involving U.S. and Newly Independent States (NIS) universities working together to bring about educational reforms in the former Soviet Union. It is part of U.S. foreign policy to assist, when requested, universities that are adjusting to democratic

reform practices and market economies in their respective countries. Under the United States Information Agency (USIA) program, U.S. universities are paired with universities in the former Soviet Union to accomplish these purposes. U.S. universities benefit from learning about the higher education system in these newly independent states and from testing the robustness of their educational models in other settings. Partnerships of this nature can provide a significant learning experience for both institutions.

Purpose of Paper

The purpose of this paper is to highlight the cooperative activities and procedures used to develop the linkage between ISU and NAUU in the area of higher agricultural education. An examination of this project and several lessons learned in the process may prove useful to administrators and faculty members in other U.S. universities who may be considering a linkage project with universities in the former Soviet Union.

Methods and Data Sources

The data from which this paper was developed are contained in project reports, project proposals, and university fact sheets. These data are augmented by the personal observations of the authors during five working visits to the Ukraine during 1994-1997.

History

National Agricultural University of Ukraine

The university was founded in 1898 as an agricultural department at the Kiev Polytechnic Institute. Later known as the Ukrainian State Agricultural University, it developed as a major institution for training agricultural specialists in the USSR. After independence in 1991, the institution was renamed the National Agricultural University of Ukraine and has continued to develop as a leader in higher education in the former Soviet Union. NAUU has as its mission to provide effective instruction on and off campus and to conduct quality

research that will benefit the people of Ukraine. NAUU has been recently ranked among the top six Ukrainian universities by European and United Nations evaluation agencies.

NAUU is the only university in Ukraine offering undergraduate and postgraduate higher education in agriculture and related disciplines. As a national university it aspires to provide leadership and models of reform to other agricultural universities in Ukraine as well as to universities in other NIS countries. The Ministry of Education in Ukraine has accredited NAUU to offer specialist, masters, and candidate degrees. Currently, the university provides 20 specialist programs and also candidate programs for research in a wide variety of agricultural and social sciences. It has approval to offer masters degrees in ten fields.

NAUU/ISU Links

Iowa State University and National Agricultural University of Ukraine established a working relationship in 1991 with the Samantha Smith Cultural Exchange Program funded by USIA. The relationship grew under the follow-on Samantha Smith Academic Exchange Program in 1993 which provided for an academic exchange of six agriculture students of each university.

This was followed by the President's University Student Exchange, with the second set of ten undergraduates of NAUU and two graduates of the Ukrainian Academy of Agricultural Science for one semester of classes at ISU. At the same time, the first group of ISU students on the President's Exchange returned to study at NAUU. Research and other professional activities have also connected Iowa State with NAUU and other institutions in Ukraine. The ISU Center for Agriculture and Rural Development (CARD) has conducted research in trade and agriculture, natural resources, and economic development policies in Ukraine. In 1993, CARD coordinated the Farmer-to Farmer program to increase short-term food supply, foster democratic farm organizations, and

assist women in agriculture. The ISU Center for International Agricultural Finance has trained many Ukrainians in-country and at ISU in the area of credit and banking. ISU professors in several departments and centers have established or proposed joint research activities, including forestry, horticulture, seed sciences, sociology, animal science, and the ISU library.

In other efforts, Iowa State and the NAUU had always been seeking means of collaboration in institutional development, strengthening and integrating research centers, and financial and privatization development. All were intended to address important needs to bring about the reform of agricultural education in Ukraine. The Linkage Project was designed to advance that broad objective by improving education and continuing education in the NAUU. Importantly, administrators and faculty at NAUU indicated their desire to consult with one or more U.S. universities and several European universities as NAUU undertook a review of their university and decided on a course of change.

Project Description, Outputs and Impacts

The Linkage Project began in September 1994, funded originally at \$294,000. In 1997, an additional \$98,000 was awarded in recognition of the considerable progress made during the first three years.

Ten colleges were identified at NAUU as counterparts to seven departments in the ISU College of Agriculture and the College of Veterinary Medicine. At ISU, 14 faculty, staff, and administrators worked directly with NAUU to carry out the objectives during the two-year project. At NAUU, 11 different deans and teaching faculty were selected each year to participate in Linkage activities along with the NAUU project coordinator. Each team spent three to four weeks at the counterpart university. ISU professors went twice to NAUU, once each fall during 1994 and 1995; while two NAUU teams visited ISU, one in the Spring of 1995, and the second in the Spring of 1996.

In July 1996, two special NAUU teams visited ISU to concentrate on modernizing administrative structures and improving continuing education at NAUU. A total of 33 NAUU faculty and administrators participated directly in the Linkage Project through working visits to ISU. Counterparts kept in continuous contact throughout the year.

In all cases, visiting professors and administrators learned about the host country's agriculture and the host institution's educational system, and participated in several cultural events as well as focusing on the objectives of the project. Broad faculty support was given during the visits by each of the universities both at ISU and NAUU. Faculty took on activities of the Linkage Project as an add-on assignment, which was part of the cost-share of the project.

The objectives of the linkage and a summary of outputs follow.

Objective 1: Revise and Restructure Curricula

The creation of a new educational plan or curriculum at NAUU has clearly been the centerpiece of the Linkage Project. The NAUU and ISU faculty involved in the process spent thousands of hours collectively creating awareness of curriculum alternatives, preparing and revising curricula, finalizing curricula, and obtaining final approval from national committees. NAUU curricula were recognized in the ISU Colleges of Agriculture, Business and Veterinary Medicine as a result of the curricular reforms. The process culminated on May 6, 1996, when ISU formally recognized the comparability of the curricula for undergraduate education at NAUU through a Memorandum of Understanding signed by officials of both universities.

Objective 2: Develop and Acquire Educational Materials

The curriculum reform was further supported through the development of new course materials, and the acquisition of supplies, equipment, and teaching materials. Each NAUU Linkage Team member who visited the ISU

campus for a month in 1995 or in 1996 purchased, obtained, or developed materials to be used in one or two specific courses as well as for general references to be located in their departments. A set of 50 textbooks with an instructor guide was provided for the newly established International Agribusiness Institute. Materials were obtained for teaching of English as a second language to be used in the English Language Center. Several professors obtained course syllabi, videos, and extension and research publications for their own or department use. One NAUU professor wrote and assembled 40 copies of a handbook for his world economics class largely from materials obtained through his ISU visit.

Objective 3: Incorporate New Teaching Methodologies

A new Media Resource Center has been equipped and is available for instructors to prepare teaching materials such as slides and overheads. Slide and overhead projectors are now available for check-out by instructors for use in the classrooms. In-service training on developing computer generated graphics and visuals is now part of instructional support. E-mail access is available at the Media Resource Center to encourage NAUU professors to keep in contact with their counterparts at ISU. Cameras purchased for participants in 1996 enabled them to prepare slides and prints for use in course presentations. Action plans were developed to improve instructional methods. Emphasis is being placed on improved teaching methods under austere resource conditions, greater incorporation of computers as teaching tools, and helping students acquire greater skills in the use of computers and self learning.

Objective 4: Improve Continuing Education

A team of four faculty and administrators with continuing education responsibilities made a two-week working visit to ISU in July of 1996. The intensive training received on all aspects of continuing education will assist them as they make improvements in their system. A vice dean has been named in each Faculty with responsibility for upgrading their off-campus

degree and continuing education programs. The Institute of Continuing Education, which collaborates with NAUU faculty members, plans several improvements in its educational programs for graduates returning for additional training in their area of study or for retraining in another area.

Objective 5: Modernize Administrative Structures at NAUU

Important administrative reforms have been institutionalized at NAUU. The leadership at NAUU have indicated that they drew heavily on the model they found at ISU in redesigning their administrative structure. NAUU has added the positions of Provost, Vice President for Student Affairs, and Director of Extension. Multidisciplinary units called Institutes are being formed to enable those in related disciplines to cooperate more closely. The Institutes also add a research dimension to the traditional teaching role of the Faculties.

In addition to the success with the specific objectives, there were noteworthy accomplishments attributable to the project in the areas of human capital development and cross-cultural understanding. There were also a large number of joint projects initiated and carried out during the time we were engaged in the Linkage Project.

1. Joint development of the Institute of Agribusiness (1995-2000)
2. Strengthening NAUU English language training capability (1995-present)
3. Completion of a proposal for leadership development (1996)
4. Management of student exchanges/internships (1994-present)
5. Conduct of the International Ensminger/ISU Ag-Tech School at NAUU (1996)
6. Conduct of an International Agriculture Policy Conference (1996)

7. Conduct of a Veterinary Biologics Workshop at NAUU (1996)
8. Conduct of a workshop on Organization and Planning of Agricultural Research (1996)
9. Conduct of a collaborative swine research program (1995-present)
10. Conduct of a library exchange program (1996-present)
11. Establishment of an Agricultural Policy Research Center (1996-1999)

In 1996, two ISU faculty were awarded honorary professorships at NAUU, the Rector of NAUU was awarded an ISU College of Agriculture World Professorship, and 23 faculty and administrators from ISU participated in three international conferences at NAUU. In 1997, two honorary professorships were awarded to ISU faculty.

The NAUU participants identified the greatest impacts of the Linkage Project on their university as curriculum reform in all departments and the Memorandum of Understanding regarding curriculum equivalency; understanding and changing the degrees offered to include bachelors and masters, as well as specialist degrees; changes in the structure of university administration; greater awareness of alternative educational systems; and breaking through stereotypes of U.S. and Ukrainian education and culture.

Participants also identified the greatest impacts of the Linkage Project on their department and college. These included adopting new curricula; introduction of new courses; expanding degree programs; reorganization of administration; acquisition of new materials for use in the department; introduction of new teaching methods, means of testing, and electives; and improved off-campus and continuing education.

The Linkage Project made a personal and professional impact on participants, the greatest of which was changing attitudes and raising awareness of the educational system used at

ISU. Professors used the educational materials acquired, joined professional organizations, increased professional capabilities such as diagnosis and design, and gained understanding of systems of extending knowledge and recommended practices beyond the campus.

NAUU Linkage team members mentioned many changes which have taken place at their university recently in which the Linkage Project did not play an important role. These included publishing textbooks and educational materials in the Ukrainian language; budget and financial matters which resulted in cuts in personnel; creating new educational centers; and NAUU's success in various student competitions.

Participants pointed out several administrative changes which had taken place as a result of the Linkage Project. Several participants indicated that the university administration had been broadened with the addition of a Provost and new vice rector positions; that changes in administrative personnel had occurred all the way from the department to the university level; and that Nizhyn Agrotechnical College had been added to NAUU. Others mentioned the integration of education and research, establishing departments at the science research institutes, and uniting departments with closely related majors. Also identified was the establishment of the Institute of Agribusiness and the signing of the Memorandum of Understanding with Iowa State University.

Administrative changes were also identified at the department and college levels. A review had been made of all administration which resulted in structural reorganization of some colleges. Several departments or colleges made changes in the curricula which necessitated administrative attention, including introducing elective courses, the credit system, and an alumni association.

As a result of the Linkage Project, several student services have been implemented. High on the list were student exchange programs with the U.S. or with western European universities; more opportunity to study English; offering B. S. degrees, and greater consideration of out-of-

class study time. Many departments are organizing department clubs and seeking ways to improve student/instructor relations. Many stated that having better educational materials to judge student learning was an important student service.

There were numerous cultural benefits through the Linkage Project for NAUU professors. For most, the trip to Iowa State was the first visit to the U.S. They noted several impressions about the Iowa educational system, such as the amount of information and equipment available in classrooms in primary, secondary, and higher education; the lack of government control over curricula; the mission of teaching, research and extension; the student oriented enrollment process; the measures used for testing and evaluation, and the professionalism of the American professors.

The activities which helped NAUU professors gain knowledge of U.S. universities included: studying the ISU curricula, visiting classes, studying the system of out-of-class work, participating in seminars, reading graduate theses, visiting the library and computation center, learning about the interrelationship between teaching, research and extension; visiting the departments and residence halls, and meeting with administrators and faculty.

ISU Linkage personnel planned many group and department times for individual activities to help NAUU professors gain knowledge about U.S. culture. NAUU participants noted as most helpful: excursions within the state of Iowa; conversations with teachers, farmers, business persons, and students; contacts with colleagues and their families; visiting Des Moines and Washington DC; attending cultural programs; visiting schools and churches; and learning about ISU professors' assignments, opportunity for advancement, and incomes.

Upon their return to Ukraine, NAUU participants mentioned particular aspects of their visit to their family and friends, including visits with their colleagues and their families; the educational process; the trip to Washington, DC; participating in VEISHEA (a student run festival

at ISU) and other ISU student activities; how the extension system works; openness, kindness, optimism, and patriotism of the people; the eagerness to work; the barrier of language; and the similarity of aspirations.

NAUU participants claimed the following activities were the most fun during their U.S. visit: visiting the Capitol in Washington and in Iowa; the Iowa excursion; visiting families of colleagues; visiting churches, fraternities, residence halls, community schools; celebrating Independence Day on July 4; talking to people.

The Linkage Project has made an impact on ISU and numerous ISU faculty members. This impact has not been limited to agriculture or rural topics. Student services, management of a university, and library services are examples of areas of interest outside agriculture. Several faculty members and scientists are working on collaborative research projects in both countries. These projects are primarily in animal science, agronomy, and forestry. A number of other types of funded projects have also been developed as a result of this project. These have included additional faculty exchanges, student exchanges, industry internships, women's leadership programs, and regional seminars. The impact of this project will be evident for many years as new opportunities for sharing and linkages present themselves.

Lessons Learned

The following lessons were learned from the project:

1. Linkages of this type need to be viewed as a long-term proposition. To make real progress in educational reform requires time to become acquainted, to learn to communicate, to understand the context of each other's problems, and to patiently and persistently look for external resources to sustain cooperation.
2. Communication is the key to success. Significant language barriers existed at the beginning of the Linkage. Expert translators and interpreters are essential to convey

understanding of words, jargon, true meaning and context among discussants.

3. Differing models of education can present challenges to exchanges of ideas for reform. The modified European approach utilized in Ukraine is significantly different from U.S. models of education. Discussion must be extremely detailed to ascertain if true communication has occurred.

4. NAUU faculty and administrators are very adept at operating under conditions of scarce resources. They used creativity and persistence to overcome resource constraints that would send many U.S. faculty into a tailspin.

5. Practical training at institutions of higher education in Ukraine is extremely high quality. When graduates enter the work force they have had significant practical experience.

6. U.S. faculty need to learn about command and control power structure and decision-making processes in Ukraine as they are quite different from those common in the U.S. While there is considerable room for discussion and disagreement in the Ukraine context, it is clear that decisions are, in the end, made by an individual, and that individual is generally a very senior authority.

7. The institutional structure of agricultural research and education in Ukraine is unlike that found in the United States. Research and education responsibilities are found in different institutions and communication between these separate institutions is now starting to increase.

8. Reform minded leadership is critical to broad institutional change. Dr. Melnichuk, Rector of NAUU, is an exceptional leader who tirelessly pursues reform.

Summary and Next Steps

This project is continuing beyond the original funding period and exceeding the original objectives. It is anticipated that the linkage will continue in various formats for many years. Faculty and administrators from both

universities learned much about each other and the higher agricultural education systems in both countries. This paper provided insight to the reader concerning higher agricultural education in Ukraine. It also outlined the procedures and activities of the Linkage Project, and gave examples to faculty and administrators from other universities considering linkage arrangements.

During 1998, faculty exchanges will involve approximately 20 faculty in strengthening the graduate programs at NAUU. The focus will also be on dissemination of results.

One significant event currently being planned for September 1998 is an international symposium on the future of agricultural education. The conference will occur on the occasion of the 100th anniversary of the university.

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DEVELOPING AND FIELD TESTING DESIGN PARAMETERS FOR CUSTOMIZING
AGRICULTURAL EXTENSION EDUCATION SYSTEMS IN DEVELOPING COUNTRIES

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Outstanding research paper from the Fourteenth Annual Meeting of the Association for International Agricultural and Extension Education, Tucson, AZ, U.S.A., April 16-18, 1998.

Abstract

This developmental research project offers country developers, extension educators, and evaluators a design strategy for custom designing an appropriate extension education system through the use of evaluative instruments which analyze a developing country's situation. The research involved (a) a search of relevant literature to identify country-specific problems and components of extant extension education approaches resulting in the development of two instruments, "Country Analysis" and "Model Correlation", (b) a modified Delphi review to refine the instruments, and (c) field tests of the instruments in the People's Republic of China (PRC), Cambodia, and Turkmenistan.

Delphi panelists reinforced the core analytical categories and items of the original instruments while suggesting enhancements in format, clarity, and efficient usage. Field tests in the PRC and Cambodia confirmed the suitability of the instruments for evaluating existing extension education systems. The Turkmenistan field test substantiated the validity of the instruments for designing a new system.

Introduction

Developing countries view the partnership of research, education, and extension in traditional agricultural extension education systems as an adaptable model for improving their agrarian economies. The process of adaptation, however, has too often followed the traditional developmental project approach and been little more than the transplantation of a predefined

extension education model into a developing country with little regard to existing country-specific factors which impact the effectiveness of a domestic extension system. As a result, less than satisfactory technology transfer has occurred, agricultural economic development has been slow, and agricultural extension has had a disappointing record (Wharton, 1984). Nonetheless, planners believe that extension education can promote development by

improving the capacity of small farmers to produce food and fiber, thus enabling them to become functional, contributing parts of the economic development process (Benor, Harrison & Baxter, 1984). The challenge is to design an extension education system, within country-specific parameters, which will effectively meet the established developmental goals of a country.

Purpose

The purpose of this developmental research project was to identify the factors to consider when designing an effective agricultural extension system for a developing country and then to link these factors to the components of existing extension education models to “custom” design an appropriate, effective extension system.

Methodology and Results

Specific research methods for this project included (a) identification of problems encountered in existing extension education systems of developing countries and outlined theoretical considerations, (b) identification of primary components of extant extension education models, (c) design of instruments to analyze country specific situations and correlate situations to model components, (d) refinement of the designed instruments through a modified-Delphi review, and (e) field testing of the finalized instruments in selected developing countries to derive country-specific recommendations for the establishment or review of agricultural extension education systems.

Problem areas and theoretical considerations impacting the success of an extension system were described in the literature (Maunder, 1972; Sigman & Swanson, 1984; Swanson, Farner & Bahal, 1990) and substantiated consideration of the following areas when designing an effective extension system:

1. Government Policies in Agriculture
2. Macro-Organization of an Extension Service
3. Responsibilities of an Extension Service

4. Linkages between Research and Extension
5. Programming Approach in Extension
6. Selection and Training of Extension Personnel
7. Local-Level Extension Staffing
8. Support Strategies for Local Extension Personnel
9. Geographic Factors
10. Climatic Factors
11. Political Factors
12. Economic Factors
13. Agricultural Factors

Primary components of extant extension education models were identified by reviewing descriptions of approaches to extension which have been employed over the past 40 years (Shaner, Phillip & Schmehl, 1982; Swanson & Claar, 1984). These approaches can be considered alternative extension models and may be identified as follows:

1. Conventional Agricultural Extension System
2. Training and Visit System
3. University Agricultural Extension System
4. Commodity Development and Production System
5. Integrated Agricultural Development System
6. Integrated Rural Development System
7. Farming Systems Research and Development System

An analysis of these models identified and compared the primary components of objectives, clientele, organization, approach, and the role of extension personnel. This analysis and subsequent correlation with identified existing and desired characteristics provided the conceptual framework for the project.

With this information as a foundation, two instruments were developed. The “Country Analysis Instrument” serves to identify and quantify various existing or desired characteristics within a country which impact the development of an extension system for that country, and the “Model Correlation Instrument” which correlates these identified impactors to particular components of existing models.

The original draft of the “Country Analysis Instrument” consisted of questions focusing on the major impactors identified in the review of literature and divided into the following general categories:

1. Geographic Situation
2. Climatic Situation
3. Demographic Situation
4. Political Situation
5. Economic Situation
6. Agricultural Situation
7. Infrastructure Situation
8. General or Desired Characteristics Impacting an Agricultural Extension Education System from Policy Makers’ Perspective and Users’ Perspective

The original draft of the “Model Correlation Instrument” consisted of questions designed to correlate the impactors identified by the “Country Analysis Instrument” with particular components of extant extension education models and to identify the best alternative components, thereby outlining the basic structural framework of an agricultural extension education system through appropriate design parameters. Parameters identified by the instrument include Objectives, Clientele, Organization, Educational Approach, and Role of Extension Personnel.

Once designed, the instruments were subjected to a modified Delphi review by a panel of recognized experts in extension education and development for evaluation and refinement. A total of 30 individuals were purposefully selected to review the instruments in three waves as outlined in Table 1.

The review panel was randomly divided into two groups, a “Primary Review Panel” of 20 members and a “Secondary Review Panel” of 10 members. Of the 30 reviewers originally seated, 27 completed the review process, 18 in the primary review panel and 9 in the secondary review panel.

Composite and progressive refinements were made to the instruments at the completion of each review wave. Suggestions for improvement fell into four primary categories: form, grammar, and style; language and cultural diversity; category appropriateness and effectiveness; and significance of specific category questions. They were incorporated into the revision of each wave at the discretion of the researcher to improve the format of the instruments, ensure their appropriateness for accomplishing the identified objectives, and enhance potential application.

Refinement of the originally designed instruments through the modified Delphi approach resulted in the “final instruments” for field application. The final “Country Analysis Instrument” comprises 77 classes of data which are further subdivided into specific data items. The data provide factors for consideration in determining appropriate extension system components. The number and selected examples of data classes are shown in Table 2.

The “Model Correlation Instrument” is organized into sections consistent with the five components of extension systems. For each component, relevant analysis factors from the “Country Analysis Instrument” are listed for interpreting the information gathered in the country analysis process.

Table 1.

Modified Delphi Approach Waves.

Wave	Review Panel	Items Provided	Items Returned
First	Primary of 20	Original Instruments Evaluation Form Letter of Explanation	Modified Instruments1 Completed Evaluation
Second	Secondary of 10	Revised Instruments1 Evaluation Form Letter of Explanation	Modified Instruments2 Completed Evaluation
Third	Complete of 30	Revised Instruments2 Evaluation Form Letter of Explanation and Thanks	Modified Instruments3 Completed Evaluation

Table 2.

Country Analysis Instrument Data Categories and Classes.

Category	Number of Classes	Selected Examples
Geographic Situation	11	Size, Land Distribution, Sub-Units
Climatic Situation	5	Average Regional Rainfall & Temperature
Demographic Situation	4	Population, Growth Rate, Cultural Groups
Political Situation	9	Form of Government, Administrative Set-up, Branches & Responsibilities
Economic Situation	11	Currency, GNP, Trade
Agricultural Situation	19	Land, Farm Size, Tenure, Farming Systems, Production, Agricultural Education, Research, Policy, Credit, Marketing, Development Goals
Desired Characteristics of Agricultural Extension System: Policymakers' & Users' Perspectives	18	Administration, Responsibilities, Funding, Staffing, Program Direction, Research Link

Field testing of the final instruments was done in the People's Republic of China (PRC), Cambodia, and Turkmenistan. Valuable experience was gained in instrument application procedures and the instruments were validated under practical application.

Field testing in the PRC and Cambodia was afforded by a 1994 Fulbright Grant. Specific evaluation procedures for the project included:

1. Referencing national and university library resources,
2. Securing statistical reports from government agencies,
3. Interviewing educators and government personnel, and
4. Surveying educators and clientele through focus groups.

Initial contact in the PRC was with faculty members of the Departments of History, Sociology, Education, and Economics at Beijing University. They provided access to library resources, student translators, introductions to governmental agencies and leaders, interviews, and arrangements for in-country interview and survey contacts.

Major portions of the Geographic, Climatic, Demographic, Economic, Agricultural, and Infrastructure Situation sections of the "Country Analysis Instrument" in the PRC were completed through the aid of student translators assigned by university faculty and junior clerks in the State Statistical Bureau and Ministry of Agriculture. A total of 21 interviews -- 10 university faculty, 9 senior officials of the Departments of Agriculture and Economics and the Institute of Economics, and 2 representatives of the Shenzhen Economic Council -- enabled completion of major portions of the Political Situation and General or Desired Characteristics from Policy Makers' Perspective sections of the "Country Analysis Instrument".

Two focus group sessions were arranged to complete the General or Desired Characteristics from Users' Perspective section of the instrument. The first was arranged by the Institute of Economics in Xian and consisted of five farmer representatives of farming communities in townships surrounding Xian. The second was organized in Dunhuang by the Chinese Academy of Social Sciences and was conducted with eight farmers.

During a series of three exit interview sessions, personnel of the Chinese Academy of Social Sciences and faculty members of the Departments of Sociology and Education of Beijing University assisted with the interpretation of data collected by the "Country Analysis Instrument" through the previously described procedures. This analysis, including a prioritization of the information collected, accommodated the completion of the "Model Correlation Instrument" and, subsequently, an evaluation of the current agricultural extension education system of the PRC organized under the Chinese Ministry of Agriculture.

Results of instrument application in the form of suggested design parameters are summarized as follows:

Model Objectives should be:

1. established by the central federal administration.
2. defined as
 - a. providing for broad-based agricultural development;
 - b. improving the quality of life for the entire rural population;
 - c. increasing food availability while maintaining low food prices.

Model Clientele should be:

1. target groups within the farm population, specifically production units of the primary commodities of pork, poultry and eggs, and cereal grains.

Model Organization should be:

1. administered by the Ministry of Agriculture.
2. responsible for agricultural production education and research and production input supply.
3. organized with staff and offices on national, provincial, prefecture, county, and township levels.
4. funded by the federal government through project profits.
5. staffed by university graduates at the national and provincial levels and technical school graduates at the prefecture, county, and township levels; men and women at all levels; and nationals at all levels.
6. staffed with administrators at the national and provincial levels, associate administrators and subject matter specialists at the prefecture and county levels, and field staff educators at the county and township levels with total staff numbers at each level depending upon numbers of farmers and regional production.
7. linked with research centers through locally administered research plots and dual-assigned personnel with both research and teaching responsibilities at the prefecture and county levels.

8. associated with farm supply and marketing systems on an informal basis, but not credit or promotional organizations.

Educational Approach should be:

1. agricultural information units for production of bulletins and teaching aids.
2. local extension workers contacting local production unit farmers on a fixed schedule.

Role of Local Extension Personnel should be:

1. consultant - identify farmer problems/needs and production constraints.
2. communicator - communicate farmer problems/needs and production constraints to subject-matter specialists and researchers.
3. educator - disseminate research-based information about new technology and demonstrate its practical application to farmers.
4. evaluator - work with local people to evaluate the effectiveness of new techniques and extension programs.
5. researcher - conduct on-farm research to determine practicality and effectiveness of new technology.
6. supplier - provide farmers with required inputs.

Arrangements in Cambodia were accommodated by the Cambodian Office of the Food and Agriculture Organization (FAO) of the United Nations and the Ministry of Agriculture. Staffs of both organizations provided statistical analysis information, interpreters, interviews, and introductions to governmental agencies and leaders. Major portions of the Geographic, Climatic, Demographic, Economic, Agricultural, and Infrastructure Situation sections of the "Country Analysis Instrument" for Cambodia were completed through the assistance of two junior staff members assigned by the Ministry of Agriculture. A total of 12 interviews with Vice Ministers and Department Directors in the Ministries of Agriculture and Education facilitated the completion of remaining portions of the situation sections and the General or Desired Characteristics from the Policy Makers' Perspective section.

As in the PRC field testing, a focus group was utilized to secure information to complete the General or Desired Characteristics from the Users' Perspective section of the "Country Analysis Instrument". The focus group consisted of seven farmers from the Mekong area.

One joint exit interview was conducted with representatives of FAO and the Ministries of Agriculture and Education. The session enabled presentation of the data and information collected through the application of the "Country Analysis Instrument", its interpretation, and its prioritization and input into the "Model Correlation Instrument". Results of instrument application in the form of suggested design parameters were discussed in detail and are summarized as follows:

Model Objectives should be:

1. established by the central federal administration with clientele advisory groups providing program input.
2. defined as
 - a. increasing agricultural production for export to reduce balance of trade deficit;
 - b. increasing agricultural production to increase real income of farmers;
 - c. improving the quality of life for the entire rural population.

Model Clientele should be:

1. entire farm population.

Model Organization should be:

1. administered by the Ministry of Agriculture.
2. responsible for agricultural production education.
3. organized with staff and offices on national, provincial, and district levels.
4. funded by the federal government and supported with development assistance funds.
5. staffed by engineers (university graduates) at the national level, controllers (technical school graduates) at the provincial and district levels, and agents (one-year certificate holders) and skilled workers (secondary cycle graduates) at the village level; men and women at all levels; and nationals at all levels.

6. staffed with administrators at the national and provincial levels, subject matter specialists at the national and provincial levels, specialist extension officers at the district level, and farmer technicians at the village level with total numbers at each level depending upon the number of farmers and regional production.
7. linked with research only through local demonstration plots and advisement of local needs and results of new technology application; research to be administered by National Agricultural Research System (NARS), national universities, and autonomous international research institutes or private companies (Non-Governmental Organizations [NGOs]).
8. associated with no other credit, supply, marketing, or promotional organizations on a formal or informal basis.

Educational Approach should be:

1. local extension personnel using research-based information to help local people identify and establish need priorities and then request instructional assistance from subject matter specialists on selected topics.
2. national and provincial level support of NGO extension development projects.

Role of Local Extension Personnel should be:

1. consultant - identify farmer problems/needs and production constraints.
2. communicator - communicate farmer problems/needs and production constraints to subject-matter specialists and researchers.
3. educator - disseminate research-based information about new technology and demonstrate its practical application to farmers.
4. evaluator - work with local people to evaluate the effectiveness of new techniques and extension programs.
5. motivator - encourage application of improved methods or identified solutions to problems.

Field testing of the instruments in Turkmenistan was accomplished as a part of a 1995 United States Agency for International Development (USAID) project. Turkmenistan is one of the

Newly Independent States (NIS) of Central Asia formed as a result of the breakup of the Soviet Union. The specific purpose of the project was to assist the country in investigating the potential formation of an agricultural extension education system, a uniquely appropriate project for instrument field testing.

Specific procedures for the project included:

1. Securing statistical data from governmental and international development agencies.
2. Interviewing educators and government personnel.
3. Surveying clientele through focus groups.

Primary contact in Turkmenistan was with in-country personnel of the USAID office in Ashgabat. An Assistant Program Manager and Project Interpreter were assigned to the project and assisted in all aspects of the identified procedures, including translating the instruments, collecting applicable government statistics, arranging and recording interviews and focus groups, and interpreting written documents and verbal exchanges. Large portions of the Geographic, Climatic, Demographic, Economic, Agricultural, and Infrastructure Situation sections of the "Country Analysis Instrument" were completed through statistical information provided by USAID and the Ministry of Agriculture. Remaining portions of the instrument, including the General or Desired Characteristics from Policy Makers' Perspective section, were completed through individual interviews.

Interviews were held with five Directors and Vice Directors of the Ministry of Agriculture in Ashgabat, four faculty members of the State Agricultural University in Chardzhou, the Governor of the Chardzhou Oblast and the Governor of the Danow District of Chardzhou, five Government Bureau Chiefs in Chardzhou and Danow, and nine farmers in the Danow District, for a total of 25 interviews. Additionally, two focus groups, one with 12 farmers in the Danow District and a second with 16 farmers in the Ashgabat area, facilitated completion of the General or Desired

Characteristics from Users' Perspective section of the "Country Analysis Instrument".

An exit interview with representatives of the Ministry of Agriculture and USAID in the final week of the project facilitated the application of the "Model Correlation Instrument". Suggested design parameters are summarized as follows:

Model Objectives should be:

1. established by the central federal administration with clientele advisory groups providing program input.
2. defined as
 - a. providing and/or maintaining low consumer food prices;
 - b. increasing agricultural production to increase real income of farmers;
 - c. improving the quality of life for the entire rural population;
 - d. providing for broad-based agricultural development;
 - e. supporting communities toward the goal of community development.

Model Clientele should be:

1. entire farm population.

Model Organization should be:

1. administered by the Ministry of Agriculture.
2. responsible for administration and direction, agricultural production and research, and small business development.
3. organized with staff and offices on national, oblast, and district levels.
4. funded by the federal government, generated project funds, and development assistance funds.
5. staffed with university graduates at the national and oblast levels and specially trained individuals at the district level; men and women at all levels; and nationals at all levels with expatriate support for development projects.
6. staffed with administrators at the national and oblast levels, subject-matter specialists/researchers and educators at the oblast level, and extension workers at the district level with total numbers at each level depending upon the number of farmers and district production.

7. linked with research through locally administered research plots and advisement of local needs and results of new technology application; research to be administered by State Agricultural University and development assistance organizations.
8. associated with credit, supply, and marketing organizations on a formal basis as required in specific development projects.

Educational Approach should be:

1. agricultural information units for production of bulletins and teaching aids;
2. local extension workers contact local farmers on a fixed schedule;
3. local extension workers receive training on a fixed schedule;
4. local extension personnel using research-based information to help local people identify and establish need priorities and then request instructional assistance from subject matter specialists on selected topics; and
5. development project established in which the organization provides previously limited inputs and assumes the responsibility for coordinating all facets of agricultural production, including credit, supply, technical assistance, and marketing services.

Role of Local Extension Personnel should be:

1. consultant - identify farmer problems/needs and production constraints.
2. advisor - work with local people to identify and prioritize problems/needs and possible solutions.
3. communicator - communicate farmer problems/needs and production constraints to subject-matter specialists and researchers.
4. educator - disseminate research-based information about new technology and demonstrate its practical application to farmers.
5. motivator - encourage application of improved methods or identified solutions to problems.
6. evaluator - work with local people to evaluate the effectiveness of new techniques and extension programs.

7. researcher - conduct on-farm research to determine the practicality and effectiveness of new technology.
8. government administrator - administer government programs and policies on the local level.
9. supplier - provide farmers with required inputs.
10. marketer - coordinate product marketing.

Conclusions and Recommendations

The research procedures used in the study were effective and appropriate for the defined purpose. The review of literature revealed problems encountered in current extension education systems, outlined theoretical considerations, and descriptions of extant extension education models. The modified Delphi review refined the project instruments by verifying the significant analytical categories and enhancing instrument clarity, efficiency, and universality. Field testing provided valuable experience in instrument application procedures and validated the instruments. The field tests in the People's Republic of China and Cambodia confirmed the suitability of the instruments in evaluating an existing extension education system, and the Turkmenistan field test substantiated the suitability of the instruments when designing a new extension system.

Additional field testing is recommended with emphasis in two primary areas. First is further refinement of the instruments to enhance their usefulness in a variety of developing country situations. Second is the evaluation of various instrument application techniques. This study utilized resource referencing, interviews with educators and government decision-makers, and clientele focus groups. Other techniques may be equally or more viable.

Obviously, the implementation of recommendations based on the use of these instruments and follow-up studies evaluating the effectiveness of a "custom designed" extension system would be the ultimate test of instrument validity.

Educational Significance

Instruments which allow professional project analysts to identify and quantify factors which impact the effectiveness of an agricultural extension system in developing countries and then correlate those factors with components of existing extension education models can be effective tools for designing country specific extension education systems. Such an approach to the "customization" of a technology transfer system will more effectively contribute to the growth and development of a rural economy, thereby enhancing the ability of a country to meet defined developmental goals and is worthy of study.

The design and use of evaluative instruments and techniques to diagnose country-specific situations and determine appropriate design parameters for extension education systems in developing countries has potential for use by development specialists and extension educators. It also demonstrates the value of linking theory with practice in evaluating country-specific systems. Such an approach to the "customization" of a technology transfer system can contribute to the growth and development of rural economies, thereby enhancing the ability of a country to meet defined developmental goals.

The customized approach suggested by this project should appeal to country developers looking for strategies to deal with differences which abound across countries, extension educators seeking ways to adapt education strategy to diverse situations, and evaluators who initiate studies and collaborate with country developers and extension educators in project design and management.

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PERCEPTIONS OF FEMALE AGRICULTURAL EDUCATORS REGARDING THE
ROLE OF WOMEN IN AGRICULTURE IN UZBEKISTAN: IMPLICATIONS
FOR AGRICULTURE AND EXTENSION EDUCATION

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Abstract

This study focused on perceptions of women educators regarding the roles and responsibilities of women involved in agriculture in Uzbekistan. A qualitative study was conducted using interview data from fourteen women educators from the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers (TIAME) in Tashkent, Uzbekistan. The interviewees held roles and responsibilities as teachers, advisors, and researchers. The interviewees defined agriculture in terms of production and revealed with some hesitation the viability and significance of women in agriculture. They cited male dominance of agricultural professions, domestic responsibilities, and a desire for the more "feminized" professions as reasons for women not pursuing professions in agriculture. Implications for agricultural and extension education are that training and information are needed to incorporate a gender perspective into curriculum, extension, and development programs to increase awareness of the importance of women in agriculture. Furthermore, a gender balance at the secondary and post-secondary level should be ensured so that women and their needs remain visible in the eyes of educators, administrators, and extension personnel.

Introduction

Nestled in the heart of Central Asia, Uzbekistan is one of five Central Asian states. The republic is the most populous of the five states with 71% of the population Uzbek, followed by Russians at 8% (Pomfret, 1995). Uzbekistan was under Soviet rule for nearly 70 years and has undergone economic, social, political, and

cultural changes since independence in 1991 (Olcott, 1996). For much of the past century, cotton production has dominated Uzbekistan's economy. The transformation to a collective system deployed modern irrigation equipment, produced a cotton monoculture, and exploited an entire region agriculturally, politically, and socially (Mesbahi, 1994). In 1940, cotton occupied 30.4% of all sown area, in 1950, 39%

and by 1986, 52% (Craumer, 1995:27). According to Pomfret (1995), Uzbeks felt that the Soviet Union deliberately destroyed Uzbekistan's grain-growing capacity that made it difficult, if not impossible, to reverse the devastating environmental impacts associated with cotton production.

The agricultural revolution that evolved throughout Uzbekistan had a dramatic effect on women. The emancipation of women under Soviet rule increased their role in the labor force, especially in agriculture and intensified cotton production. More women became visible on state farms or kolkhozes. Yet, they remained invisible with respect to their domestic responsibilities. Women in Uzbekistan were given many of the production responsibilities, spending numerous hours in the field, whereas men managed, marketed, and distributed cotton (Critchlow, 1991:62). The policies of agrarian development implemented throughout Uzbekistan promoted inequalities and health risks as more women were seen working the land. Currently, 61% of Uzbek women reside in rural areas and play a significant role in agriculture, either directly or indirectly (Griffen, 1995).

What made Uzbek women unique were the social structures under Soviet rule that allowed higher levels of literacy and better social protection when compared to women in other Muslim countries. However, according to Bridger (1987), women were hindered from entering agricultural professions for two reasons. First, traditional Islamic attitudes made it difficult for women to seek specialized training, and second, the schools or institutes were located at a great distance from their village. According to Medlin, Cave and Carpenter (1971) women had made significant strides pursuing work outside the home and experiencing some degree of economic independence but were still viewed as inferior in many ways to men in social organizations and at work.

Theoretical Framework

The agricultural sector has often been the context for much of the research conducted in the area of women and development. The theoretical framework for this study centers on women and their role in the development process. During the early 1970s, women moved to influence government policy in such a way as to change laws regarding women, and to improve women's overall status (Tinker, 1990:28). What evolved was a conceptual belief that women's issues and development were linked. Economic development is closely related to the advancement of women and their inclusion in the development process. Research has shown that women have advanced in situations where economic growth has prospered (Craumer, 1995:x).

The theory of women in development (WID) began as a policy concern to help improve and better the goals of development agencies through economic development (Tinker, 1990:3). Throughout much of the 1970s and early 1980s, WID emphasized making visible the invisible work, needs, and contributions of women in developing economies (Henderson and Hansen, 1995). WID succeeded in initiating a dialogue on women's issues, in drawing attention to the many roles women hold throughout the world, as well as the benefits of including women in the development process.

The WID movement failed to recognize three key factors. First, women's lives were shaped by relations with men, so to exclude them would slow and/or hinder the development process (Young, 1993). Second, the WID movement sought to involve more women in public arenas and more non-traditional work, but failed to recognize the fact that a majority of women worldwide resided in rural areas (INSTRAW, 1996). Third, the ideology of women in developing countries was different from those trying to initiate change. The unequal balance of power and position in society was seen as normal, so why change, was the overwhelming response by women (Young, 1993).

These key factors were the impetus for the evolution of the most recent theory. Gender and Development (GAD) was an approach that focused on women and men. The emphasis with GAD was on changing the structures and processes such as laws, religions, political institutions, systems of thought, and socialization practices that helped identify disadvantages among women. GAD offered a more holistic view of women's issues and shifted the attention from a focus on women to a focus on women and men (Young, 1993:134).

Purpose and Objectives

The purpose of this study was to describe the role of women educators at the Tashkent Institute of Irrigation & Agricultural Mechanization Engineers (TIAME) in Tashkent, Uzbekistan and to determine the implications for agricultural and extension education. Specific objectives were to (a) identify roles and responsibilities of the Institute's women agricultural educators, (b) identify perceptions regarding the role of women in agricultural professions, and (c) develop a demographic profile of female agricultural educators.

Methodology

A qualitative research design was used. Three qualitative research techniques were used to accomplish the objectives of the study: historical research, in-depth interviews, and observations. Fourteen interviews were conducted over a two-month period during the summer of 1996 at TIAME.

The population consisted of eighty women educators at TIAME. Five were (U.S. equivalent) full professors, 35 were associate professors, and 40 were assistant professors. Fourteen women educators were purposively sampled due to the uncertainty of the conditions in Uzbekistan. The on-site coordinator

recommended a list of women educators based on the following criteria: professor at TIAME, Uzbek or Russian nationality, and an educator of an agricultural or agriculture-related subject.

An interview schedule was derived from the literature review and checked for face validity. The instrument included 34 open-ended questions to meet the objectives of the study. Information from the historical research, interviews, and observations was triangulated to assure validity of the findings. Two interpreters worked with the researcher prior to the study to ensure that the interview schedule was understood and interpreted in the correct manner. The findings were analyzed using Ethnograph 4.0, a qualitative computer program. The data from each interview were analyzed based on code words.

Findings

The average age of the interviewees was 46.7. All the women were married, except for one divorced woman, and one single woman. Each interviewee had at least one child. None had more than three children. A majority of the women described their social status as middle income with monthly incomes ranging from 1,300 soum to 3,000 soum (\$33-75). Twelve interviewees practiced Islam, one interviewee was Russian Orthodox, and one was atheist. Except for one Russian, all the interviewees were Uzbek, a proportion similar to the population.

Eleven interviewees held the associate professor rank, two were assistant professors, and one a full professor. Their roles and responsibilities were as teachers, advisors, and researchers with fields of specialization largely in the technical agricultural sciences. Areas of specialization based on the highest degree earned are summarized in Table 1.

Table 1.

Areas of Specialization of Respondents.

Specialization	No. of women
Agricultural Economics	3
Hydro-Technical Construction	2
Machinery Usage	2
Agricultural Economics/Water Management	1
Agricultural Melioration	1
Automation/Technical Process	1
Construction Engineering	1
Cotton Engineering	1
Inorganic Chemistry	1
Irrigation	1

Their responsibilities outside the institute were closely tied to the home, their children, and husbands. Their involvement in women organizations varied. Three women were involved in formal organizations such as the Women's Union at TIAME and governmental organizations. Several women described their involvement in informal meetings with women friends and colleagues, while several others indicated that their domestic responsibilities allowed no time for outside organizations.

The interviewees revealed with some hesitation that the agricultural industry was a viable profession for women. Several women believed that pursuing a profession in agriculture was a matter of character, determination and desire, noting that women had a significant role and had made important contributions to agriculture. However, interviewees cited male dominance of the agricultural profession, domestic responsibilities, and the desirability of other, more "feminized" professions as reasons for women not pursuing professions in agriculture.

There was a perception that agriculture was linked with work on kolkhozes and production agriculture. Examples of work on kolkhozes included bookkeepers, accountants, construction, and food processing. Most felt that women were respected in agricultural professions. However, two interviewees believed that Uzbek women and those women in

production agriculture found it more difficult to earn respect from their male counterparts.

The interviewees stated that success in agricultural professions was attainable, but that women had to work harder to achieve it than men. The women believed their domestic responsibilities were among their biggest barriers in their chosen profession, and balancing both family and career was difficult. Overall, the women perceived women as equal when compared to their counterparts in similar occupations.

Six interviewees were in favor of providing more educational opportunities for young women entering agriculture as a profession, whereas five were against, and three had no opinion. Those in favor believed workshops and seminars would allow young women to understand agriculture as a profession, especially the health risks from environmental degradation in Uzbekistan. They also stated that educational opportunities were already offered in other areas, and that information on professions in agriculture was not necessary. Coupled with these findings were their beliefs on encouraging young women to enter agriculture as a profession. The majority revealed that women should not be encouraged because of the demands of household and family.

Conclusions and Recommendations

The results of this study indicated that the interviewees balanced the responsibilities of both career and family. It is recommended that traditional roles in the household be looked at and that alternative methods of supporting women in both roles be addressed. Educational workshops, seminars and informational meetings are needed for both women and men to address traditional roles, stereotypes, and gender differences.

The study found three women involved in formal women's organizations and several involved in informal gatherings. Whether informal or formal, these meetings are apparently supportive atmospheres for women. It is recommended that involvement in these types of networks increase through recruitment and encouragement by women and men currently involved in women's organizations. Further analysis of the Women's Union at TIAME and other governmental organizations should address women's needs, which would help facilitate a more holistic view of women in Uzbekistan.

Women perceived agriculture as largely production. Yet, agriculture is a dynamic industry and encompasses a variety of professions. Women are involved in a variety of careers, but are unequally represented in the agricultural profession. It is recommended that a broader view of agriculture be disseminated through workshops or seminars on various professional opportunities conducted by agricultural educators and supported by printed material distributed through universities, institutes, and secondary schools in Uzbekistan.

On the continuum of success, a career in agriculture was viewed as being somewhat neutral for women. Therefore, educational programs should be developed to increase awareness of gender roles in agriculture in primary, secondary, and higher level learning institutions. To achieve a gender perspective in agriculture and to encourage more women to be involved in agricultural professions, it is recommended that men and women be actively

involved in establishing policy for agricultural development at the local, regional, and national levels.

The perceptions of the interviewees led to a belief that women play a significant role in agriculture. This finding, coupled with the fact that many women are employed in the agricultural industry and that many reside in rural areas, indicates a need to address the role of extension in Uzbekistan. It is important to assure that a gender perspective is incorporated into workshops, projects, and research within extension, and that women are not overlooked in the dissemination of information.

Despite the women's belief that agriculture was generally a viable industry and that success was attainable, professions in medicine and teaching were frequently mentioned. It is recommended that the role of women in the workplace be addressed from a gender perspective. There is strength in gender diversity, and it is important to have women employed in both agriculture and "feminized" professions. Promoting agriculture as a viable career choice will be a key in accomplishing this recommendation.

Significance and Implications

This study serves as a point of inquiry and opportunity to further study the areas of women in development, agriculture, and extension education. As agricultural educators and extension professionals, this study can serve as a point of reference for women's issues around the world. The information procured from this study can be incorporated into a agricultural education curricula across the country and globally. Incorporating a gender perspective into such classes as administration, curriculum, leadership, and teaching methods would be valuable for both undergraduate and graduate students. Disseminating the information in this manner would ensure that gender issues are addressed across the curriculum.

The study also adds to the breadth of research in agricultural education. As agricultural education broadens to encompass a wide array of issues and subject matter, it is important to include

women and their place in agriculture as a priority. Failing to recognize gender issues may continue to marginalize young women at the secondary and university levels. Young women who have not adjusted to the male-oriented atmosphere may struggle or eventually leave the profession because (a) the only mentor/advisor was male, and, (b) that individual was not gender sensitive. Therefore, incorporating a gender balance in professorial and administrative positions becomes increasingly important as more women enter agriculture at secondary and post-secondary institutions.

Gender perspectives need to be infused and gender issues mainstreamed into curricula, extension, and development, so that students, staffs, and faculties are cognizant of women's issues. Agricultural and extension education can inspire women to become leaders in agricultural development through extension activities and programs at the local, regional, national, and international levels. Well-educated women can become strong models and advocates for agriculture and extension education, but to do so requires a team effort by both women and men.

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THAT OUR LIVES WILL SHINE: COLLABORATING WITH YOUTH
FOR SUSTAINABLE DEVELOPMENT

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Abstract

Sustainable development must be environmentally sound, address issues of peace and human rights, involve all sectors in decision making, and be class and gender equitable. It must also involve young people. The potential of youth to be active participants in development has been under utilized, even ignored. The accepted approach to the so-called youth problem has been “youth development” -- what can we do for youth -- and not “youth in development” -- what can youth do with and for us. In this paper, I examine factors influencing youth’s ability to actively participate in development; identify expectations, aspirations, and concerns of youth living in Busoga District in southeast Uganda; and consider how those factors affect their desire to participate in development. In spite of daunting social, economic, and political circumstances, the youth in this study were overwhelmingly positive about their futures. Many expressed a specific desire to use their talents, time, and personal resources to improve their home communities as well as contribute to Uganda’s positive development. As agricultural and extension educators, we must tap young people’s energy and optimism, and include them in all stages of our current as well as future development and development education initiatives.

Securing our common future will require new energy and openness, fresh insights, and an ability to look beyond the narrow bounds of national frontiers and separate scientific disciplines. The young are better at such visions than we, who are often constrained by the traditions of a former, more fragmented world. We must tap their energy, their openness, their ability to see the interdependence of issues (United Nations Environmental Program, 1990, p. 22).

Introduction

The 1960s, designated by the United Nations as the First Development Decade, opened with considerable optimism. Poverty would be drastically reduced if not eliminated, and developing¹ nations would “catch up” with the developed, technologically advanced nations. By the 1980s, economic growth in developing countries did not match those expectations and the gap between the rich and poor nations widened. Furthermore, international economic growth, with little thought to the impact of large-scale industrialization and agribusiness, depleted natural resources, created environmental wastelands, and marginalized rural and indigenous peoples worldwide -- especially women, children, and youth. “It has

become starkly evident that such development is expending the very resources needed not only for the present generation but also for generations of the future. Thus it has become increasingly clear that development must be pursued along a course which is environmentally sound and sustainable” (United Nations, 1991, p. 1).

With that realization, development planners and governments reassessed their goals and strategies. Along with brave new ideas such as participatory development, farmer first strategies, and women/gender and development, evolved the concept of youth and young adults as actors and major participants in development. Chawla (1988, p. 31) felt strongly that the (development) “crisis itself could be overcome, to a certain degree, by using youth as an active agency for social change, thus capitalizing its vast potential for generating development.”

Purpose and Objectives

This paper examines the expectations, aspirations, and concerns of youth in a developing country, and considers how those factors affect youth’s desire to participate in development. Objectives guiding the study were: (a) identify specific values and aspirations of rural youth in a developing country, (b) discuss factors influencing youth’s desire or ability to participate in development, (c) determine if rural youth are interested in participating in development, and (d) suggest strategies for collaborating with youth for sustainable development.

Methods

Data instruments for the study consisted of: (a) an Autobiography of the Future (Rubin & Zavalloni, 1969) in which study participants were asked to write freely about their future hopes, aspirations, plans, and expectations up to the year 2040 A.D., and (b) a self-administered questionnaire covering the same dimensions through open-ended and multiple-choice questions.

The data were collected from 48 Ugandan in-school youth and 28 Ugandan out-of-school youth living in Busoga District in southeast Uganda, East Africa. Due to the physical difficulty of travel and security concerns in Uganda when the data were collected, limited financial resources, and time constraints, data collection was limited to selected areas in the district. Since this was a qualitative/exploratory study, the data were analyzed by accepted qualitative research methods. Responses were grouped in logical clusters, subsets identified, trends noted, and results presented through anecdote. As a naturalistic and feminist researcher, I am compelled to share my personal experiences and observations as well.

This study is representative of youth in developing countries to the extent that the study participants resemble groups of young people that one might encounter in rural areas of Uganda and other countries of sub-Saharan Africa.

Youth: Who Are They?

The most appropriate age definition for adolescence remains controversial. For instance, I worked with youth projects in East Africa where the ages of the participants ranged from 10 to 35 years and sometimes older. A human developmental stage rarely has precise limits whether it be chronological age, physical maturity, educational attainment, or a traditional rite of passage. Chawla (1986) elaborated on this idea:

The hinge of this issue is what exactly “youth” means ... For many young people in the world, there is no stage “youth” at all; for others it is precariously short and tenuous; for still others, it is indefinitely prolonged. Poverty, deprivation, scarcity, uncertainty -- all these are things which many young people must square with, in economic, social and psychological terms. (pp.7-10)

Wyn and White (1997) agree. “Although each person’s life span can be measured ‘objectively’

by the passing of time, cultural understandings about life stages give the process of growing up, and of aging, its social meaning ... Both youth and childhood have had and continue to have different meanings depending on young people's social, cultural and political circumstances" (p. 10). From a feminist standpoint, gender might also be added to their list of circumstances.

The United Nations defines youth as people from age 15 through 24 years, though in many countries around the world, people working in rural areas insist that youth should include people aged 10 through 24 and older (Chawla, 1986). For instance, in the younger age range, many girls take on adult responsibilities such as child care well before the age of 15, and "thousands of children are employed within the family or informal sector of the economy long before they might technically be classified as youth" (Rau & Lindley, 1985, p. 1). Rau and Lindley continue, "At the other end of the age spectrum, youth is often seen as a position in society reflecting a combination of age, experience, marital status and influence. Some societies regard people as young well into their 30s and 40s, and only then do they acquire the status of an adult or elder" (p.1). For the purposes of this study, I included adolescents and young adults between the ages of 10 and 35. This range realistically defines the ages of the young people whom I interacted with and observed during the years I lived and worked in East Africa.

One of every five inhabitants in the world is a youth with up to 70% of youth residing in rural areas of the developing world (Seiders, 1996). Rau and Lindley (1985) reported that, depending on the developing country, youth comprise about 20% of the total population, and rural youth may represent 60 to 90% of the total youth population. They continue that "in absolute terms, there were nearly 660 million young people in the developing world in 1980, a figure expected to climb to 807 million by 1990 and 882 million by the year 2000" (p. 1). In 1980, Africa's total population was estimated at 470 million with 71.1% living in the rural areas. With an annual growth rate of over 3%, the continent's population will increase to over 850

million by the year 2000. Rural youth will comprise an estimated 152 million of that total. In Africa alone, there will be over 300 million young people to educate and prepare for the future between 1985 and the year 2000 (Lindley, 1985).

Youth Participation in Development

According to Mohammad Sharif, Executive Secretary of the International Youth Year Secretariat, "participation means that young people have a right to be included in the discussions and decisions affecting their lives and the future of their societies. It implies understanding, equality, acceptance, involvement, and an affirmation that they be taken seriously" (Silha, 1984, p. 2). Several factors and values affect youth's desire or ability to be proactive in their personal lives as well as participate in the development of their communities and nation. These are discussed below.

Tradition and Modernity

Families and communities, worldwide, are experiencing various degrees of crisis and change. These are dramatically illustrated in Africa where urbanization, destabilization of rural family and community values and cultures, and "western-style" development have generated and intensified changes in individuals, families, and communities. Some changes in the traditional African family include absence of the father resulting in female-headed households; mothers working outside of the homestead; absence of a male role model; weakening of the extended family; and decay of traditional social mechanisms such as story telling and rites of passage (Andama, 1987).

The majority of respondents in this study were born into traditional Ugandan families, and though many of them dreamed of leaving the village, almost all expressed allegiance to the extended family and the culture and values that represented. One young woman shared, "My home village is a sort of small village with ten inhabitants who are all my relatives. Right from my great granny to my nephews and nieces."

“Our village is a part of myself,” wrote another youth. Along the same vein, another continued, “It’s important that I have to visit my father’s homeland, my ancestors. It’s indeed an obligation to know the originality of oneself.” Interestingly, one male felt that the traditional ways negatively influenced development:

It is my intention to develop our village. I want to build my house in the village. It will be a house with treated grass near my family members. However, some family members still have the beliefs which must be left before any development can take place. Some beliefs are quite awkward and are not favorable in the society.

Marginality

Marginality, as it applies to youth, relates to the degree to which they are integrated into the different social, economic, and political levels of society. Chawla (1986) suggested that youth are marginalized in a variety of senses. Young people who are marginal may be poor, caught between their rural heritage and urban opportunities, culturally unassimilated, or alienated from their families. Many young people live on the margins of society: rural youth looking for a better life in the cities and struggling to survive in an unfamiliar and sometimes hostile environment; unskilled youth looking for employment in a glutted job market; the undereducated and illiterate; children and youth suffering through war, famine, and poor health. Many youth are marginalized because of the very social and economic transformations designed to improve their lives. Not only are they agents of change, they are victims of it. One disillusioned youth wrote:

As a man from humble origin, I feel I should do much (hard work) in order to overcome the vicious cycle of poverty which has been characteristic in our family. When I look at my own village, tears come! There is no prospect of easy life though there is some gradual development especially in agriculture. My mother is very old now; father has

passed away. There is misery reigning at home.

Another talked of the hopelessness of his parents’ situation and his desire to be different from them:

It is my task to work hard, to work without resting so that I don’t be a failure in life like my father. My father did not achieve the western education so he intends to live a traditional life. So I hope to lead a better life than my father, but through hard work. My mother has never faced a blackboard as she never attended a school. So it is we the children to work hard and toil so as to be good participating citizens.

Youth marginality and poverty are paradoxes. They obstruct young people’s ability to grow as a person and/or participate in community development efforts; at the same time, they motivate those same youth to aspire for a life different from or better than their parents.

Education

Education is the greatest single factor influencing African youth’s cultural, political, and economic marginality, and the chief means of importing new ideas and philosophies into Africa. African youth and their families consider education as a major route to wealth, status, and economic security. It is a primary value, a driving aspiration in adolescence and young adulthood, and central to youth’s future plans. Even so, according to the United Nations, less than 20% of Africa’s children will enter secondary school and only a small percentage will go on to higher education. Bray, Clarke, and Stephens (1986) projected that illiteracy will remain high in many of the countries of Africa. Girls and young women are particularly at risk.

Participant responses in this study reflected the “universal” concern for education. One young woman wrote, “I am very anxious to go to the University because in Uganda these days, unless you have education, you will not get a well-paid job. I am sure if I reach the University, I will be

able to break the poverty trend in my clan.” Another youth shared, “I will make sure all my children are educated and after which they will be able to help the rest of our fellow citizens not to suffer so much.”

Employment

Traditional African society looked after the training and placement of young people usually in community-based economic activities and jobs, thereby guaranteeing the continuity and economic survival of the interdependent community. In contemporary Africa, the range of jobs available to young people has proliferated as has job mobility. Too, the present and future labor forces are growing faster than the number of job openings. Many young educated Africans, unable to find gainful employment in the rural areas, look beyond the drudgery of the farm to the opportunities of the city.

I heard and saw this attitude expressed by a young Basoga farmer I visited. Enoch’s mud and wattle house was situated in the center of a neatly swept compound. The village, being remote as most rural villages in Busoga are, had no modern utilities. Enoch’s ideas of the “good life” were graphically illustrated by the electrical fixtures carefully painted on one wall of his sitting room. On yet another wall, meticulously rendered, were a television set and radio cassette player. Enoch shared that he would soon leave the village in order to earn money to buy the things of his dreams.

Interestingly, many of the youth surveyed viewed work as a way to get money to support a valued way of life; to accrue savings for rural investment on return to their village of birth. One youth said, “When I acquire enough capital from my office in town, I will set up a small-scale industry in my village that produces cooking oil using groundnuts and sim-sim. This will be an advantage to my people and home since it will create employment for them.”

Poor Health, War, and Violence

Each year millions of children and youth die from environmental hazards, poor sanitation, malnutrition, common diseases, and HIV/AIDS. Hit hardest by the AIDS epidemic in Africa are sexually active young adults, and adults between the ages of 20 and 39. Uganda has been severely affected by the epidemic, with estimates of one million people infected out of a national population of 16 million (Njoku, 1993). A cruel twist, AIDS is taking away Africa’s best and brightest -- the very people on whom Africa’s future development depends.

War, like poverty, ignorance, disease, and malnutrition, cripples a developing country. It limits the development of capable, motivated, and creative individuals in a society. It is reported to be the leading killer of children and young people in the developing world (Shamma’, 1986). The effects of war, violence, and the military on Ugandan youth have been traumatic. Yoweri Museveni’s National Resistance Army depended heavily on children and youth, some as young as nine years, to wage a bloody, guerilla war. While in Uganda, I experienced roadblocks “manned” by heavily armed child soldiers, and AK-47 toting fifteen year old youths forcibly trying to enter my home.

The youth in this study were not immune to Uganda’s violent past. “Because of the insecurity that has been prevailing since the 1970s, all my family members were forced to move to Jinja which was relatively peaceful. In my home area, murder and armed robbery was a common practice,” shared one young man. It was often said to me, as I traveled from village to village in Busoga, that in Uganda “there is always a reason for death, and old age is not one of them.” Uganda suffered through over 20 years of violence and civil strife, the consequences of which on a generation of children and youth are yet to be determined.

But there is much hope in the Uganda of today. John Isabirye, a 21 year old out-of-school youth from a village located on the shores of Lake

Victoria, wrote in his Autobiography of the Future:

I expect to have problems, some disease and sickness, cooperation from my fellow men, to have contact with important people, a higher standard of living, to become famous, and to have advice from my relatives.

I plan to have two sons and three daughters, to have a well-constructed house, to construct a poultry house and a farm, to start a business, to take my money for banking, to have a plow, to have a plantation of coffee and one of sugar cane, to have a garden of onions, how I can make my children successful, and to help my community.

I hope to get money, to get a bicycle, to have a radio in my house, to get good clothes and good tables, to get good plates and cups, to have enough land, to have an educated and healthy family, that my village will be full of electricity, and Uganda will develop three times in the next fifty years.

I dream my life will shine well.

John's aspirations for a better life for himself, his family, community, and country are indicative of the hopes and aspirations shared by the group of young people in this study, as well as many youth worldwide. Most important, analysis of the data in this study indicated that the youth wanted to participate actively in determining their collective futures. They had strong roots in their home villages, a connection based on tradition and family; and ranked participation in community and national affairs as important. Many felt that service to others and assisting in the development of their country was an accomplishment of which to be proud. The majority of the youth identified helping others as the most important goal in their lives. An overwhelming number of the young people declared that they would actively participate in development efforts in their communities. One in-school youth shared:

My country, Uganda, which is among the Third World countries and underdeveloped, needs people who are hard working and creative. Thus, I feel that I should be one of those people who have the heart of developing their countries; who are nationalistic people who don't work for their own pockets only, but are people who toil for the wellbeing of the majority.

This leads one to ask the question, how can this youthful optimism and enthusiasm be harnessed to insure environmentally sound, sustainable, and equitable development?

Collaborating with Youth for Sustainable Development

The best known definition for sustainable development was introduced in the World Commission on Environment and Development's 1987 publication "Our Common Future", also referred to as the Brundtland Report. According to that report, sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. Sustainable development must be environmentally sound, address issues of peace and human rights, involve all sectors in decision making, and be class as well as gender equitable (International Institute for Sustainable Development, 1994). It must also be intergenerational, including both young and old alike.

A United Nations report outlining guidelines for youth participation in sustainable development (United Nations, 1991) identified six underlying perceptions about youth regarding their role in sustainable development. Among those were the ideas that youth have a unique role in sustainable development by merit of their sheer numbers, as well as their dual status as victims and agents of environmental degradation (and development). Another perception was that "youth are entitled to participate in the decisions that affect them and should be given the opportunity to do so" (p. 8).

These are not new ideas. As early as 1968 Rene Maheu, then Director-General of UNESCO,

talked of youth's role in an evolving world (United Nations, 1969):

Youth may not yet be the motive force of history but it can be the detonator in cases where history can be made to move only by an explosion.

We can no longer rest content with merely working for the young. We must think, think and work with them and through them, for everything that gives life its value is in their eyes as in ours -- in theirs even more than in ours. Only by so doing shall we keep or regain their confidence, without which all our labour is in vain. (pp. 5-6)

Mohammad Shariff concludes, "Development implies innovation and progress -- for both individuals and societies. Young people must be free to develop new ways and in all directions..." (Silha, 1984, pp. 2-3).

Most exciting, youth want to be involved. This young woman described a future Uganda she fully intends to help create:

When I look into the future, I see that my home, village and country will have greatly changed and developed from what it is today ... Within fifty years, Uganda our mother land will have developed economically, politically, and socially. It will have brought forth many bright, intelligent citizens.

Conclusions and Recommendations

Youth are our future leaders. Comprising close to one-fifth of the world's total population, they have the potential to be leaders now. "To exclude them from participating as agents and beneficiaries of environmentally sound and sustainable development would be to frustrate such development" (United Nations, 1991, p. 3). The young Ugandans in this study supported monogamous marriage, smaller families, family planning, and child spacing methods, ideas crucial to environmentally sound, equitable, and sustainable development. Additionally, high

personal aspirations, altruistic goals, optimism for the future, and youthful energy combine into a powerful and positive force for a future of yet to be imagined possibilities. As agricultural and extension educators, we are in a unique position to facilitate the integration of youth and young adults into sustainable development efforts, and we would be remiss not to do so.

For far too long, the potential of youth in developing countries to be active participants in the development process has been underutilized if not ignored. The general approach to the so-called youth problem has been "youth development" -- what can we do for youth -- and not "youth in development" -- what can youth do with and for us. Let us formally recognize youth as active and essential participants in local as well as national development plans, and work directly with them to identify needs and action plans for participatory development. Let us educate our young people about the interdependent issues and positive implications of working together for sustainable development that is environmentally sound and gender equitable. It is critical that we provide youth with the tools to be active participants in development: youth-focused extension services, viable/funded youth organizations managed by trained youth professionals, basic literacy skills, well-equipped schools, agricultural/vocational training, environmental education, credit, and access to land. Furthermore, according to the World Bank (1992), improving education for girls may be the most important long-term development and environmental policy in the developing world. Finally, we must, in ourselves and in our work, be exemplary models of what this kind of development can and must look like.

Humankind dreams of a time and place when people of all races, cultures, and genders will live in harmony. "Peace is not just the absence of conflict. Peace is understanding, it is justice and equality, participation and development; it is the freedom to exist ... and the assurance that the future will be worth living" (Silha, 1984, pp. 2-3). Environmentally sound, equitable, sustainable development -- and peace -- cannot be realized in isolation. Since youth constitute an integral part of our global order, they must be

involved as, ultimately, we all must. John Isabirye's simple dream was that his "life will shine well". Working together, all our lives will shine.

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Endnote

¹ The use of the term *developing* is convenient. It is not intended to imply that all people in a particular group of countries are experiencing similar development, or that other countries have reached a preferred or final stage of development. I use this term cautiously and with acute awareness of its inadequacies.

South African Society of Agricultural Extension: Impressions of a First-Time Conference Participant

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AIAEE Journal Editor

Just four weeks after our conference in Tucson, I attended the annual conference of the South African Society of Agricultural Extension. It was an exciting and instructive experience, and I thought Journal readers may be interested in some of my technical and personal impressions of this kindred group of extension professionals, and their conference.

The Society

The SASAE was formed in 1966. This was the Society's 32nd conference. The Society's objectives focus on advancing and applying the science of extension and rural development by stimulating thought, study, research, and discussion. The publication and exchange of knowledge nationally and internationally, promoting extension as a profession, and practicing responsibly, in the public interest, natural, economic and managerial sciences are other ways in which the Society achieves these objectives. The Society publishes once a year a scientific, peer-reviewed journal, "South African Journal of Agricultural Extension". AIAEE and SASAE exchange journals, feature one another's activities, and network for information and mutual interests.

The Conference

The conference was held in East London, a port city on the Eastern Cape, fronting the Indian Ocean. Overlooking the ocean, the sight and sound of the tide at all times created a pleasant venue for the conference.

Over 120 persons attended. Most participants were extension practitioners working in the provincial or central ministry extension services at the mid or field levels. A few participants were extension teaching faculty at universities and colleges or engaged in agricultural research. The majority were from South Africa and neighboring countries. Four other AIAEE members participated -- Drs. John Richardson, Richard Liles and David Mustian, North Carolina Cooperative Extension Service, and Abdillai Alawy, Ohio State University.

The conference theme, "Accountability in Extension and Rural Development", was debated in a plenary session format through paper presentations, discussant reactions, and audience questions. The SASAE's April newsletter highlighted the theme's importance, universality, and timeliness "... Extension currently suffers from a 'reputation deficit' ... is perceived to be better at carrying out programmes than at communicating that fact to 'our customers and also decision makers' ... must pay attention to communicating ... impact." It also picked up on a telling comment in one presentation, "The old paradigm that good work will suffice is giving way to the notion that good results must be communicated to political leaders and key decision makers." These comments could have been made about extension in any country.

Mr. Cas Human, a provincial elected official with agricultural development responsibilities, set the tone for the conference in opening remarks. He impressed upon participants that accountability to people is the mandate of the government's "People First" policy. Government-operated extension services have therefore to demonstrate and justify program value to stakeholders, especially the people. Taking issue with Mr. Human, Dr. Gustav Duvel, Director, South African Institute for Agricultural Extension, University of Pretoria, who is an AIAEE member, was critical of the government's lack of focus in implementing this policy. To support his position, he made the point that the goal posts were being constantly shifted so that it

was not clear who are or should be extension's clients. He argued that extension could not be all things to all people given the resources it had. Accountability was important, but in the final analysis, the question of affordability may become more crucial and real.

Paper presentations focused on various aspects of the accountability question. I highlight significant points from selected papers. The published conference proceedings contain full papers and are available at U.S. \$12 from the Editor, SASAE Publications, South African Society of Agricultural Extension, University of Pretoria, 0002 Pretoria, South Africa. This amount covers overseas mailing cost.

Donovan's paper on the role, cost and value of extension in South Africa was a most interesting presentation. It is a good beginning for discussing other selections. The author posited two incompatible roles for extension, (a) public extension: improving quality of life which is a social function and therefore a responsibility of the State, and (b) commodity extension: increasing the profitability of production, a commercial or industrial function on which the government should not spend taxpayers' money. Expenditure on commodity extension was indicated to be five times greater than that on public extension for value of products served, or 20 times more in terms of per farmer expenditure. Admitting the difficulties of determining returns to expenditures in a confounded agricultural research-extension-education-industry environment such as causal connections between extension inputs-outputs-outcomes, and multi-collinearity among research, extension and education, the author indicated that commodity extension gives a much higher return on expenditure than public extension.

A description of how the North Carolina Cooperative Extension Service responded to the accountability mandate was provided in papers by Richardson, Liles and Mustian. Strategic planning using a systems approach set the groundwork for designing an inclusive and comprehensive web-based, interactive reporting system which is now providing measures of progress toward objectives and impacts of programs in terms of social, economic and environmental consequences. This has caused a mindshift from the traditional extension activities- and outputs-based paradigm to a performance-based, results-oriented paradigm focusing on outcomes and impacts. As a result, better quality reports are being provided by extension agents and stakeholder questions can be credibly and confidently answered in a timely manner. Faculty training on the new system was both extensive and intensive, and the system itself is dynamic and can be continuously adapted as required. The development of instrumentation and measurement procedures to gather credible data is still an obstacle.

Several papers raised methodological issues in evaluating for accountability.

Duvel posited that human needs, perceptions, and knowledge cause changes in behavior (such as adoption of practices) leading to economic and physical efficiencies. He recommended that these variables be monitored not only for summative purposes to determine impact, but for improving programs, and that they be incorporated into working objectives in the program plans of extension professionals as guidance and management tools. He presented helpful examples of how this might be accomplished.

Ewang and Mtshali commended Participatory Monitoring and Evaluation (PME) as a tool for managing sustainable development in rural South Africa. The authors criticized capital-centered development initiatives of donors and the lip-service given to people's participation without the commitment and direction needed to realize people-centered/participatory development. They described the process and benefits of PME in development projects, and affirmed its value as a bottom-up, people-controlled process and not a technocratic, top-down intervention.

In the same vein, an example of active stakeholder (farmers, agricultural scientists, extension workers and others) involvement in an agricultural development committee to plan, implement and evaluate

recommendations for farming systems in a South African Province was provided by de Beer. The author emphasized how such involvement legitimizes and helps meet accountability demands of programs.

My paper posed the perennial attribution-of-outcomes question confronting extension. Admitting that there is no easy answer to this question, I suggested three types of attribution on a continuum from causative to associative to inferential. Two scenarios in an agricultural research verification and extension program were described to suggest what type of attribution would be appropriate, and methodological and evaluation issues discussed.

Alawy compared results of qualitative data from open-ended focus group interviews and quantitative data from closed-end personal interviews and found no differences in the problems and needs expressed by women's groups in a district in Kenya. Previous studies cited by the author had yielded similar results. Therefore, he concluded that either method could be used for gathering data to document program results, the specific choice of method depending on the given situation.

A comparative study of the Sasakawa-2000 and Training and Visit Extension approaches in a region of Tanzania by Mollel and Orio revealed strengths and weaknesses in both approaches, and the site-specific problem of duplicative efforts and conflicting messages. The authors recommended that the resources and work of both approaches be combined to optimize program efficiencies and effectiveness, including greater involvement of farmers in program decisions.

Accountability of training of extension workers was the subject of a paper by Marincowitz. He reviewed the agricultural training situation in 12 Southern African Developing Countries, including manpower needs, the relevance and scope of ongoing instructional programs, academic standards and quality control mechanisms in place, and institutional organization and governance. The role of training institutions in South Africa in supporting regional training needs was also discussed. The author concluded that accountability of agricultural training should be taken more seriously. Steps should be taken to target and make training relevant to specific country needs, establish an accreditation system, and improve system governance.

A Tribute

The technical portion of the conference was excellent: well-organized, papers of high quality published in a set of proceedings, and animated and provocative discussion during and after paper sessions. Opportunities for fellowship, and for exploring issues and ideas with colleagues in another part of the world face-to-face are the best part of a conference such as this. I found much goodwill and professionalism among conference delegates. One realizes on such occasions that people have different versions of the same problems but can turn these into challenges and find unique solutions.

South Africa is currently in an era of socio-political and economic change, and is faced with important policy and developmental questions and issues. Even in a brief stay, one could sense undercurrents and subtleties, and encounter overt expressions of cultural differences. Like all countries, there are concerns and hopes for the future. Visits like this reinforce my conviction that people the world over have faith in people, dream of a better life, and want to work to realize that hope.

My thanks to fellow extension workers in South Africa for their gracious welcome and hospitality. Give us the chance to do the same for you one day.