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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.

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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.

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# Journal of International Agricultural and Extension Education

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Agriculture in Trinidad & Tobago

Dr. Reeza Mohammed
Honorable Minister of Agriculture, Land and Marine Resources
Trinidad & Tobago

Invited Presentation
15th Annual Meeting of the Association for International Agricultural and Extension Education,
Trinidad—Tobago, March 22-26, 1999

Mr. Chairman; Honorable Minister of Education, Dr. Adesh Nanan; President of the Association for International Agricultural and Extension Education (AIAEE), Dr. Jan Henderson; President- Elect AIAEE, Dr. Satish Verma; Dean of the Faculty of Agriculture and Natural Sciences of the University of the West Indies, Dr. Charles McDavid; Principal Agricultural Services Specialist of the World Bank, Dr. Willem Zijp; Representatives of Various Agricultural Organizations; Representatives of the University of the West Indies; Specially Invited Guests; Participants; Ladies and gentlemen.

The hosting of the 15th Annual International Conference of the Association for International Agricultural and Extension Education (AIAEE) is indeed an historic occasion for the Government and people of Trinidad and Tobago. This is the first full AIAEE Annual Conference to be held outside of the United States of America though there was once a version of this in Jamaica. Our involvement shows the level of confidence the AIAEE and its members place on this country’s ability to interface with international extension.

Incidentally, this year also marks the 10th anniversary of the Extension Service in Trinidad and Tobago. Our history of extension service started during the colonial era with the establishment of the Botanic Gardens with a support advisory service, which still exist today throughout the English-speaking Caribbean. I would like to take this opportunity to invite you to visit the Botanic Gardens while you are here.

Our early start in extension was influenced in part by the establishment of the Imperial College of Tropical Agriculture (ICTA). This world-famous institute was the first college of agriculture for the colonies, to provide training and research in tropical agriculture. The study of tropical agriculture was therefore born here in Trinidad and Tobago at the ICTA St. Augustine which we all know today as the University of the West Indies. It still remains the premiere institute for agricultural education in the tropics.

Agriculture in our islands developed out of a history of agrarian/plantation economies with the production of primary products exported to the European countries for further processing. The islands have benefitted tremendously from subsequent preferential and protected market arrangements. Domestic agriculture has generally remained at the subsistence level, though a significant commercial, market-oriented sub-sector (which extends to export of non-traditional export crops) is now emerging. Today with trade liberalization and globalization initiatives, our nations now face serious competition.

Continuous cultivation occurs on marginal lands and this causes great concern for protection and conservation of the environment. Our arable lands must remain sustainable. There is need for reduced use of pesticides, control of soil erosion and conservation of water for agriculture.

Available arable lands are dwindling because of competition from demands for housing, infrastructure, industries and tourism, to name a few. In addition, there is over-exploitation of arable lands by farmers. In the Caribbean, land is a very limited resource. A World Bank report
estimates that the world’s population doubles every 35 years. There are implications therefore, for Trinidad and Tobago to meet the growing needs of an expanded population.

Advancements in new technologies have resulted in increased yields. Caribbean farmers have however not been able to fully exploit these gains. In many cases, farmers do not have the resources to invest, while in others, the technology is not suited to the rugged, diverse terrain of the Caribbean. There have been new concerns with respect to a number of natural disasters, such as hurricanes, floods and volcanoes. There is also much fragmentation of these marginal lands by inheritance, landlessness, and ad hoc, unstable and insecure marketing arrangements. In addition, there is inadequate access to finance and poor infrastructure.

As stated before, Trinidad and Tobago celebrates the 100th anniversary of its Extension Service. During this time, extension has gone through many changes. After the Botanic Stations, a number of plant propagating stations were established, supported by an advisory service for cocoa production.

In the early days, technology transfer was the emphasis. Technologies were to be transferred to farmers, who were required to adopt these practices to be successful. Later, the State Lands Development Projects, which included crops and livestock production, became the major focus in extension. In addition, several incentive programmes based on input subsidies were implemented. At the same time, a conscious drive was made to encourage home gardening in which a considerable amount of resources were allocated.

Ladies and Gentlemen, over the past three years the Government has taken a number of initiatives to revitalize the agriculture, forestry and fisheries sub sectors towards greater efficiency and international competitiveness.

Several policy reform measures have been implemented under an Agricultural Sector Reform Programme and Agriculture Sector Investment Programme financed through a loan from the Inter American Development Bank. These measures target water management with emphasis on irrigation and drainage, land use administration, agribusiness development and modernization and regulatory quality services, which as you know are complex issues which must be addressed if the agricultural sector is to play its part in the social and economic development of our country.

In this regard, the Ministry of Agriculture, Land and Marine Resources has also taken several initiatives under the Government’s Public Sector Investment Programme aimed at upgrading and developing the infrastructure which is necessary for the sustainable development of the sector. Major emphasis has been given to the provision of water for agriculture, marketing infrastructure, agricultural land development and distribution, fisheries infrastructural development and resource management, forestry access roads development, forestry regeneration and an agricultural incentive programme to achieve increased productivity and growth in the sector.

Particular attention has been paid to strengthening and reinforcing the Ministry’s research and extension linkage with the farming community in order to ensure that modern state of the art technology is accessed, generated, adapted and transferred to the producers so that they may be better equipped to compete in this liberalized global environment.

However, the Government of the Republic of Trinidad and Tobago recognizes that enhancing the organizational capabilities of farmers groups to allow for better articulation of the clients’ viewpoint is imperative for the success of any extension programme and ultimately any government policy for agriculture. In Trinidad and Tobago, there are many long-established commodity based organizations such as the Trinidad Island wide Rice Growers Association (TIRGA); the Cooperative Citrus Growers Association (CCGA); and the Coconut Growers Association (CGA). The Trinidad and Tobago...
Agricultural Society, the oldest farmers’ organization in the country, is over 100 years old; and the County Agricultural Consultative Committee (CACC), an institutional federation of farmers’ groups, which was set up to contribute to policy development from the farmers’ viewpoint. The emphasis for agricultural development in 2000 and beyond would be one of increased participation by all relevant interest groups.

The Extension Division will continue its innovative efforts by extending the concept of Farmers’ Field School started in a small rural community in east Trinidad to other areas across the country. This is a training programme where learning facilitation is done on farmers’ holdings.

The Farmers Training Centre celebrates its 20 anniversary this year. This centre which is run by the Extension Division, conducts over 200 short courses annually in crops, livestock and other general areas of agriculture for approximately 3000 trainees, at three locations throughout the country - free of charge. There is the emergence of a shift from generalized training to one that will focus on the problem-solving approach to meet the most pressing educational needs. In addition, the Publications Unit provides a monthly newsletter, fact sheets, bulletins, posters and information boards on an on-going basis. The Audio-Visual Unit provides support with instructional cassettes and videos, slide-set series and radio programmes for the farming community and all these services, ladies and gentlemen are provided free of charge.

Farmers in Trinidad and Tobago are supported by over 100 front-line extension officers at the regional, county and district levels. The ratio of farmers to extension officers now stands at approximately 500:1. This is quite good compared to the ratio of one: over 800 in many developing countries. In addition to execution of educational and advisory programmes, these officers administer the Agricultural Incentive Package, flood relief and disaster assessment programmes, and monitor the economic pests and diseases as they arise.

Fisheries extension is provided by fisheries officers in the form of training in sustainable harvesting of near-coastal fishery resources; protection of breeding grounds; the use of appropriate equipment; and aquaculture production to reduce the pressure on the marine resources.

The Forestry Division provides extension services in agroforestry and private forestry to protect and conserve our slopes, watershed areas, wetlands, other fragile ecosystems; and wildlife farming to reduce the pressure on the game species.

The development of the human resource capacity to sustain agricultural education to farriers is done through the Faculty of Agriculture and Natural Sciences, at the University of the West Indies, the Eastern Caribbean Institute of Agriculture and Forestry (ECIAF), the Agriculture Teacher Education Centre (ATEC) and the Secondary Schools at the Caribbean Examination Council (CXC) level. No doubt the efficacy of these will be explored in your deliberations at this conference.

As we approach the 21st century we must employ innovative methods to improve production while sustaining our environment. It is in this context that this conference and its theme - REVISITING EXTENSION BEFORE THE 21 CENTURY - is timely and appropriate and I commend the Regional Chapter for its initiative in bringing this conference to this part of the world.

Mr. Chairman, Ladies and Gentlemen, I wish to thank you for the opportunity of delivering this address and may God guide you in your deliberations. May God bless us all.
It is indeed a great honor to come to this meeting. I am very impressed with the level of scholarship in this group. As you heard I started out as an ox trainer and Bert and I know that it still comes in handy.

The World Bank is changing and I think it is more than window dressing. I am quite positive about the changes that are going on now. We apply matrix management. We are not the first ones nor will we be the last ones. We have a matrix where we have one axis is knowledge and one is money. Clearly in the World Bank the money wins. We are trying to bring people together around knowledge and one of the things that we have been trying to do is bring people that focus on rural development together. Partly for some of the trends that were mentioned by the dean. International support has been dwindling and we are very concerned about that. My brief was an international perspective, a World Bank perspective, of international extension. But then focused on developing countries. I won’t be talking a lot about extension in developing countries.

I’d like to start with a bit of global context. I think the challenges that the Minister mentioned, that the Dean mentioned, of rural development are really formidable. Poverty in the developing world is largely rural. Three out of four poor people in the world live in rural areas. Food needs, as the Minister was saying, in 30-35 years, we will see a doubling of the food needs of the world. And probably also a shift in the quality. If you look at north Africa, there is a clear shift from grains, to white meat, to red meat. Thirdly, we are all very aware that the environment is under severe stress. At the same time, over the last decade, international support for agricultural rural development has halved.

And there is a lot of complacency about food security. Particularly because it is very often people in western countries who have never experienced food insecurity that make the decisions about these things. Secondly, there is certainly a feeling in the World Bank that agriculture, that is technical, they always claim they are a group apart. They talk about culture, agriculture. A sustenance of society itself. Everything is linked to everything else. So there is clearly in international organizations about agriculture. Is it going to give us a quick return?

The furthest challenge is perhaps more daunting. They have to be more productive to allow for these increased security needs. They have to be more profitable. It is the only way to really reduce poverty and they have to be sustainable in what they are doing. So the challenges are quite formidable. Knowledge in that challenge is the key. And I will use the word knowledge in a very wide sense. I’m talking also about attitudes and skills and better technology. In the developing world certainly we have reached the limits of natural water. Sustainable intensification is really needed to do the things we’ve set out to do. Now we have to balance profitability and sustainability. Because many countries, Brazil is a very good case, where they have actually successfully balanced a more sustainable approach to low tillage, or zero tillage, with a productive system and a profitable system. Knowledge is crucially important to balance all of these goals. At the same time, sometimes, I think it is a bit too much. Are we foolish? We are talking about farmers here. A billion people. People that, if we look at our figures, are all the rural people who are engaged in agricultural or primary production. That can include farmers, it can certainly include some people living in forests. There is about a billion.
They speak 5,000 languages. Many of them are not literate. They have very little formal education. There is an enormous cultural diversity there, including different ways of communicating and learning. Talk about a challenge for extension and education. And knowledge is only one factor. But I will come back that perhaps that all the issues that the Minister was mentioning for Trinidad have a real direct link to knowledge, to understanding, to extension, and to education. Capacity rebuilding is another nice fashionable word.

Now this one many of you are much more familiar with than I could ever be. And I will have another one later on that many of you will be much more familiar with. But sometimes it is important to realize we put the farmers in the center, and that is not automatic. In many countries where I work, yes in the United States, it is very logical, of course the farmers are in the center. But if you have a discussion in Morocco about the linkages between research and extension it is not at all clear that the farmers are playing a role. If you talk to the Ministry of Agriculture in Moscow now, it is not at all clear that they even consider small holders to be farmers. Small dacha farmer now produce over 90% of the potatoes in Russia. We these are not farmers. And if you talk about mingling of the universities in some of the oblasts in Russia with research farmers do not play a role. So this is not that bad of a model to come back and revisit extension. Actually it is not that bad one for many of my colleagues at the World Bank who have been focusing very much on surface delivery and not so much on the function and if you take extension or research as a function of what extension actually does rather than seeing it as an organization feather or a public service. It becomes much easier to discuss. Okay some of these services might be better done at the private sector, or by the farmers themselves. Or is it really a public sector role?

Another one that I’m sure the Minister was already alluding to. The function of extension. You probably wrote many of the books on this. But I think it is useful sometimes to come back in certain functions, what is it that extension does? It transfers technology. It mobilizes and helps farmers organize themselves, and it helps educate them. Now, of course every big organization goes through these questionable words. We have building social capital. We that is this one. This is really social capital. Organizing, mobilizing people to do the things that they want to do. And I think that that might well be a function of extension. The World Bank has in the last 20 years or so, focused on the easier one, on the technology transfer. Perhaps the one that is the easiest to privatize. No reason why the government would have to prepare a variety of demonstrations when the private sector can do that. This one might be better done by the farmers themselves. That one might be better done at the government level. Education perhaps is a real public sector responsibility.

What we have is really something big now. I will be quoting Burt a number of times I suppose. Global assets what we have is really something. We have almost 800,000 people. We are an enormous resource. Most of us are working in remote areas. As Satish was saying, I started out in a very small village in Burkina Faso and I have worked in slightly bigger village in Lesotho and worked on yet another small village in Mauritania. And many of our colleagues are there. And many of them are the only ones there. Education is very often not there. Health is not there. Let alone the private sector. They are really the avant guard of rural development. What we spend is about 6 billion dollars a year. And we have a long history. There is a 100 year of experience and understanding of extension in this country. Returns are high, usually. They are difficult quantify. Rates of return that we calculate are between 13% and 500%. That is hard to believe for me but this is what my economist colleagues tell me. But there is a problem of causality and quantification. How do you quantify a benefit? How do you quantify this change in attitude?
Social capital, or human capital. How do you really say that this because of extension? This change in the attitude. We were talking yesterday about Albania. Many of the problems in eastern Europe have a lot to do with the change in attitude of farming as a business than particular technologies. How do you measure that? How do you measure that you are actually going in the right direction? Maybe we shouldn’t. Maybe we should leave the measuring to the farmers themselves.

We have a problem selling results. I think part of the problems are ourselves. We do extension but we don’t extend ourselves too well. Certainly at the World Bank, what we are now doing is scrambling to inform Ministers of Finance that one it is a major financier of extension. Direct support in the last couple of decades was about 3 billion dollars. That is more than all the other donors combined. And it multiplies of course with other donors with the governments another 6 billion dollars for donor driven extension in the world about 9 billion dollars. To put that in context, the United States spends about 17 billion dollars on the war on drugs annually.

In the approach, T & V, training and visit, talk and vanish, has been a dominate. It is like Henry Ford I think, you can get any color car you want as long as it is black. You can get any type of extension in the World Bank you want as long as it is T&V. I think there is a change now but it was certainly true for many years. And their thinking commitment. For all the things that you can say about that and more, we actually helped put extension on the map. In much of our developing world, and we have been contributing to the building of capacity in many countries.

However, what we have done is a lot of focus on public extension. I think there is some real problems with public services. First, there is poor coverage. And I will be very hard nosed in any country I come into. And I go to see the farmers, and I ask them when was the last time you really saw an extension worker and what did you talk about? What did you ask him to do? And it is my estimate that in any country only 10% of the potential clients are in direct contact with extension. And that very often excludes groups that we all know about and with whom we should be doing better. Women, herders, older people, and people of course who are really far out beyond the 30 km that an extension work drives on a motor bike.

Questionable financial sustainability. Much criticism from my colleagues at the Bank, especially the economists, saying well this is not sustainable. I have a real problem with understanding what they are talking about. I think there is a number of different elements to that. Why is this not sustainable? You can do a lot of extension in many countries whose system is sustainable. It is a matter of priorities as well as sustainability. Now there is in many countries poor government commitment and I’m really interested in what the Minister had to say this morning. But also I know in many countries, and you know them, where if you do go to the government well maybe the Minister of Agriculture is supportive but the Minister of Finance is certainly not. There is an urban biased built in to much of the work we do. There are many countries were the government is trying to do everything and that is important, but they cannot do everything and therefore the services are not sustainable or of quality. People see that happen. Again, a very poor demonstration of success. Very innovative applied research going on in really poor areas. The farmers like it. But those who make the decision about it never knew about it. And then another one is that they do it for money. And they get very discouraged. I went and visited Yemen several years ago. We did a very thorough evaluation of what the Bank had been doing in Yemen. We had been lending over the last 20 years 120 million dollars to a really very poor country. And as you go and look at what it bought. There are a lot of buildings, there are a lot of vehicles and I hope there are a some extension workers who know more. But, if you talk to the farmers, they haven’t changed very much. One change that has happened, they had for some time they had a subsidy for natural gas, for bottled gas. You could see the trees.
grow because they weren’t being used for fuel. It was much easier and cheaper to use gas. But we have really not been doing a good job of supporting extension or farmers in Yemen.

We have a lack of accountability. In many countries in which we work, they are not being held accountable to farmers. And I think this comes from the county agents. In some of the counties I’ve visited, the decision of whether or not you get a new vehicle as a county agent depends on the report. And even in countries where there is now much more change. You go to Moldova, the very idea that the farmers would have a say over people, over programs, or offered money, is just inconceivable. Consulting farmers in terms of accountability is not the same as empowering them. What we have been doing in many of our programs and what you see around the world is asking farmers for their opinions about farming systems and research. And that has moved from a period when researchers were asking farmers their opinions essentially to satisfy the researcher’s curiosity. To a period where there was sort of give and take and more participation. And now we are getting into a type of commitment.

Lack of relevance. Many in Tunisia once, I had a discussion with a group farmer and I was asking what did you talk about last week and it was about biogas and silage making. And I went around and asked how many cows do you have and it was 2, 3, 1, 1. Where do you get biogas from that. It was not very relevant. How do you make silage from a quarter hectare for 2 cows.

And did you talk about getting together perhaps. No, no this was a top down idea. Someone up in the Ministry thought that biogas was a good idea. They went to some company and said let’s push this idea.

Many needs are going unmet. We had a big meeting in a coffee house with farmers all the males sitting around in a big circle and we were talking about what makes a difference here. And we had just have the extension agents talk about injecting fertilizer into the tree growing area of apple trees. The farmer said we don’t need more apples, we have a hard enough time selling the apples we have. What we need is storage, maybe cool storage, if we can swing the money. Or otherwise better transport and more control over the transport because now it is one transport firm that comes to us and really cheats them. We went back to the extension service and asked them what is your reply. And they said this is not extension. Marketing is not extension. They were not communicating lets put it that way.

Lack of targeting, lack of market segmentation. Very often, typical World Bank supported project, or typical other donor supported project talks about “the farmers.” And you lucky if they talk about “the farmer and their husbands.” A little bit of segmentation. But if you are talking about the small holder, people with goats, the people who want to get out of farming. I remember the shock that went through a meeting when I suggested that the best thing that the Bank could do in Poland in 1990 was to advise older farmers to get out of farming. How to do that, how to hold on to their assets. But at the same time leaving the land and some of their assets to younger farmers. But that is not extension.

Now extension is not only a government service. Other farmers provided by the private sector. The point is I’m not telling you this. You know this. The extraordinary richness of these proceedings I really think is the information. And I would like to compliment you on that. This already writes about it. The point is how do you make it work? How do you help all the different suppliers of this information to coordinate. Because coordination have a cost. And sometimes the cost if higher than the benefits of the coordination. Also it helps sometimes to avoid blind spots. In Southern Turkey the different programs. A colleague of mine went around and the people said we are the government agents, we are the extension service. We are the only ones. And when we went back we found that for every single extension agent there were 10 private extension agents mainly concerned with production of oranges. We had a hard time believing it, that there was a ratio.
of 1:10, public sector to private sector extension agents. We are talking about 110-120 public sector and 1,100 private sector. We are not in competition in with them. We have no way of competing. How do we play our respective roles best.

Now coming back to the World Bank. We have been very much of a church. You could not start a project until you had done objectives at the top. Now the debate about T&V certainly in the Bank, and outside the Bank, has become completely obstructive. There extension fatigue. If you talk about extension we have to learn to talk about the bigger picture rather than about the detail about delivery. In the World Bank certainly the leadership in extension is less than in research. We have a lot of really good experienced research managers, but we don’t have all that many people in the Bank that have experience in NGO extension, private sector extension, in other types of or in mass media. But, we are realizing more and more that the future is very pluralistic. Both in terms of funding of extension, not only the government, farmers will have to pay part of it. And the private sector. And secondly in the institution itself. So, we are looking for the ingredients of success rather than putting one particular brand name there. And I think we have found a number of promising approaches and I’m excited about a number of them.

I think there is five really interesting promising approaches, in our experience, globally, worldwide. The first one is decentralizing government services. Taking positions where that makes sense. Really bread and butter to many of you, but revelation in many of the countries where I work. If you look at Colombia, Venezuela, Bolivia, particularly in Latin America. The inclusion of extension really grew exponentially when the positions about extension were placed at a local level. Empowering farmers, again something that is very simple to you, but it is difficult in many countries. Democratization is giving a good start to this but we are not there yet. I think empowering means three things. If farmers can influence programs what will extension’s response be. Maybe even a mode of delivery. If it can deliver people. If the agents wellbeing somehow depends on the appreciation or otherwise of the farmers we have empowerment. And if they can make decisions about money. Otherwise it is all participation. I think it is much handier to talk about empowerment rather than just participation.

Increasingly you will see government deciding that there is a public rationale for not paying for extension. When they start contracting things out very interesting things happen. They use the Koran in Morocco to give messages about taking care of the land, sustainability issues. And they were very short messages on radio that turned out to be very popular. Soap operas and that sort of thing. Contract that out. You can do it as a public sector. Hire somebody else to do it. And also work together with the public sector. Delinking public funding from delivery. The government may want to pay for something but allow someone else to delivery it.

Interconnecting rural people. We are not really with it in that sense. If you look what, I think 70% of the local area networks in Britian, are in the London area, urban area. The other 30% are spread out in the country. There are very little in rural areas. What we see in our investment in looking at the worldwide trends is that most of the investment in information and communication technology is in urban areas. And it goes to sectors than agriculture, it goes to finance, it goes to defense, and it goes to management of industry. But it doesn’t go into education or extension in rural areas. Potential is in enormous. Anyone who has been working with radio programming, such as the radio program in Kenya, made for women, by women. It is a fascinating thing. People go to the village and have a discussion and they have some very clever editors who record what is actually being said and they use actual experiences from the village in their program. At the same time cover agricultural topics, pest scouting, agricultural information. Fascinating new things where radio is being used almost interactively.
To make use of these five ideas. We will probably come up with some other exciting new elements of success. We need to change our thinking. And I mean we at the Bank. I’m sure your ahead of us. But certainly in many of the countries that we are working in we have to change the way we think about extension. That is going to be harder. I think if you are involved in development work one of the hardest things to change is the university. It is much easier to change industry. In a country you try to change the tertiary education system it is a very difficult thing to change. And we are not a lot better than that in extension. First the whole T&V concept was based on a conveyor belt model. There was an abundance of universities that were really great at passing knowledge from the knowledgable to the greatful. That is quite a picture. Clearly it is not simple like that. It is an effort. People learn from each other. And that is a different concept. It means you cannot be an expert anymore. And that to many people in extension services. And in organizations such as the World Bank it comes as a bit of a shock. What do you mean? We know, and also we pay so. And that becomes a very difficult discussion sometimes when you say, well, maybe you are only providing a platform. And maybe you are actually a stakeholder and maybe you are learning something. The highest use of research findings of one university in Nigeria was actually a university in the United States, and they were talking to each other.

Researchers, educators, are the major users of information. They are not just generating the information, they are users as well. We have to go beyond the public/private label. One of the advantages of working in the World Bank is the exchange with my economist friends. They taught me a lot about the economics of extension. And I think we all need to learn about that. There are about 400 people in the Bank who work on rural development. Many of them are agricultural technical people, agronomists. We need to learn more about the economics of extension. For one thing I learned more about the information itself. In the past I thought well public information, something that is available to everyone, and if more people use it it won’t diminish its value. They have private information. That is economic characteristics of that information. Well it is only meant for me it is a plan for me and I will not share it with other people because then the information’s value diminishes. Well of course, there is more than that. We are learning now that if you have a common pool of information. Were skills are being shared by a number of people. How to maintain grazing areas in dry areas. That is neither public or private. We need to learn the distinction. Because we can they say, how to you want to arrange your extension service? Who is going to provide the public part of extension? Who is going to provide the private part of extension?

This was key in our discussions with Estonia. One of the most fascinating discussions I can remember is a discussion we had for 2-3 days with very high up people in the Ministry of Agriculture and they were only asking how are we going to approach this? They didn’t have an extension service to start with, which was an advantage. And they asked, what type of farmers should we be focusing on? We said well, in your country, you have essentially, three type of farmers. We have bigger farmers. The future winners. And they really need private type of extension. They need a business development plan, they need how to apply for a loan. On the other extreme they have people who want to get out of farming. They are part time farmers. They need alternatives to farming. Then in the middle maybe they are going to make it. They are very often new to farming. They need very simple skills, Accounting like very simple production advise. So the Estonians said, okay if that is the case we are going to have a three prong delivery system. We’ll have a fund that delivers extension on the basis of what the farmer pays. Because the bigger ones can and will pay for their own extension. We will work through the farmers organization to develop the middle concept and we will work through the Ministry of Interior for the farmers who want to get out of farming.

The understanding of economics of us, technical people, is important. We need to remedy blind spots. As I said many country will say we only
have a public service and they do not understand farmer-to-farmer exchanges. Very undervalued. And we have to rethink the Turkey example. Is marketing advise extension or not? Is it only technical? Or should it be focusing on income? The whole World Bank is moving towards welfare, wellbeing, and income, rather than just production advise. Are we convinced that this is the only way of doing it.

A possible agenda for action. I think there is no alternative for us to work with farmers to help themselves. The shear numbers, the sustainability, brings us there. Reach those who have not been reached before. I think this is crucially important. We have to focus on the 90% that we left behind. Women, but also future leaders, young farmers, the 4H comes to you so logically, so naturally, but it is not the case in many other countries where many of the rural youth never want to work in agriculture. I went to Macendonia, to a private television station. I asked would you consider discussing an agriculture program here and before I could finish my sentence they were rolling with laughter. Agriculture, us, here, we are a modern station here, we are really the new culture, this is for young viewers, we don’t your program, we don’t want agriculture, this is it. This was an eye opener to me.

Help governments work through transitions. Perhaps the most important issue of the next decade. How do you help a country move from where it is, remedy all sorts of blind spots, to where it wants to go. Increase the sustainability of public services. We have to look for better value for the money. Better monitoring. Involve the private sector in building partnerships with farmers organizations. Build capacity for knowledge management. Look at knowledge much more wholelistically. Teach agricultural knowledge systems in universities. Many of the universities in countries were we work do not teach any extension whatsoever. There is a movement in Africa, in Ethiopia, in Ghana, to start doing that, but they do it as a separate course. Rather everyone needs the minimum extension skills, communications.

Government funding. Many of you are government funded personnel. I believe the advise of the Bank would say continue funding extension. Where a public benefit exists. Environmental topics, or to produce targeted programs. Very poor farmers are not going to pay for extension, ever, they cannot pay. Choosing food for their children or advise, they will choose food.

Decrease funding in extension where the private sector can do it or where farmers can share costs. I have always maintained that farmers can share the cost in many different ways. Thirty years ago I was working in Burkina Faso, the farmers contributed to the cost of extension by providing housing. It gave them a seat at the table. They were not just waiting for something to be given to them. They could actually withhold that. They didn’t do it but they had that power.

Increased funding for farmer mobilization for rural inter-connectivity, and for new private advisory services and then perhaps for capacity building in extension. Yesterday was more pronounced than today. I’m very glad to see more of an age and gender mix but yesterday we were at a number of tables and we had a lot of white, gray, males around the tables. And it worries me. I’m worried that extension doesn’t excite enough young people in universities in countries where we work to ensure that they take over from us.

Now, how to get there? If we have this agenda. If we want to focus on farmer-to-farmer. If we want to have more empowerment. I think there is a number of things that I came up with in comparing countries that are different as countries as Uganda, Macendonia, and New Zealand. First assess the current situation. Very often you need a crisis to start something. Clearly in New Zealand there was a crisis. No one liked the current situation anymore. There was no more support for paying for extension service. Secondly, you need to develop a vision. If you set it long enough. If you say where do you want to be in 2010, people don’t feel so threatened. If you say, okay where is your
service going to be next year. You may have to lay off some workers and do some unpopular things. But if you say by 2010 we want at least half of our advise to be paid by farmers at some rate, okay, then you have at least some time to work on it.

Develop a task force and a transitional program. I would very much like to discuss further, how do we support such transitions. One of the things is a clearing house, I think this association has a very strong role to play in providing a clearing house. This extraordinary richness in your papers ought to be more accessible across the globe. We would like to support you.

What are the implications for donors, such as the World Bank, such as US AID, and many other organizations. We will have to focus on the demand side much more. We’ve been really focusing on the supply side. Better research, better extension, better transport, better construction. We really haven’t focused on demand. We’ve been working in the Bank on building capacity. A bunch of people decided maybe we should focus on this demand side a little more. We got money from the French and Dutch to help us on a program to help us mainstream all of our projects and partnership with some farmers organization. We started with an end. We asked where do we really want to be? We thought in the beginning we wanted to do a workshop. But that is just a tool. We want every agricultural project to include some partnership with farmers organization. So we sat down with IFAP, the International Federation of Agricultural Producers, and we are going to have that end result. We are in the first step right now, learning by doing. We are doing a lot of piloting. We are going into the second step to document our lesson. I think this is incredibly important. Extension provides the service but if you don’t have the emancipated clientele, then you are not going to deliver your product.

Approach knowledge wholistically, that will be a difficult thing. But I think there is light at the end of the tunnel. People have learned that it makes a lot more sense to go more widely. Our new President is pushing this comprehensively. It is essentially a matrix. What needs to be done in country X and who are the partners to do it. And one of the partners in some of the blocks is the World Bank but it can be the country itself. Wholistical approaches and local action is something we will see in the future. Support transitions.

How can the Bank help. I think in assessment. Avoiding blind spots. Assist in the integration of economical, social, technical and environmental concerns. Help develop a vision for the countries. The reason why Venezuela is doing so well in extension is that they first went to Chile where they have been privatizing extension then they went to Columbia where they have been decentralizing extension and then they went home and they have a decentralized and private extension. They learned from each other.

Where does that leave us? The people who care about extension. I think there is of course a fatalistic scenario in all this privatization. A very good friend of mine is Chief Executive Officer of the Dutch Extension Service. He went from a workforce of about 700 people down to just over 300 and that was a tough time. Now he is up to 925 because he is selling knowledge.

I think there is also a very realistic scenario. There is demand for new skills. What I see in many countries. They don’t want us to come, my colleagues and myself, to say this is the answer. But to provide options. What can we do. What are the options. How can we foster their ownership? That is a skill that we never did very well in. We still call it Bank projects.

There are increase opportunities if we want to teach students extension in the private sector. The private sector will see that transfer of technology is one thing but transfer of capacity, transfer of management will require massive training needs with the farmers organization. If indeed we succeed every project will have the farmers organizations as a major element. These people need training to not only have a seat at the table, but then have something to say. I think there is a formidable challenge in terms of poverty reduction, in terms of knowledge. Extension can play a role. However, I do think we have to be doing that better, we have to do it cheaper, and we have to do it as part of a much
wider, rural information system. The World Bank will support extension. Actually the latest figures I’ve seen have it going up. It is very encouraging. But the bottom line for the World Bank will always be poverty reduction, food security and the management natural resources.
Revisiting Agricultural Extension: Experiences in Less Industrialized Countries

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Introduction

This brief panel presentation by Mr. Paul Kibwika of Uganda and myself provides a brief overview on the experiences of less industrialized countries (LICs) with agricultural extension. I will limit my presentation to a brief descriptive, historical overview of the development of extension services in LICs. Mr. Paul Kibwika will then share his views of Uganda’s experience with agricultural extension. Since the focus of the afternoon panel is on issues in agricultural extension, I try to avoid what might be considered issues, at least the most current ones.

This presentation comprises four components: a historical overview, goals of extension services, approaches taken to delivering extension services, and major improvements being made to the programmatic and managerial aspects of extension organizations. On the history, goals and approaches to extension, I draw heavily from the FAO published manuals edited by AIAEE member and co-founder, Professor Burton Swanson. I suggest those interested turn to these manuals for further details (Swanson, 1984; 1990; Swanson et al, 1997).

Historical Overview

The precursors to what we now think of as agricultural extension are found in the 1800s when European powers produced agricultural products for export from their tropical colonies. Botanical gardens were started for purposes of demonstration and experimentation, first in Sri Lanka (Ceylon) in 1821 followed by gardens in the Caribbean Islands and in West Africa. Some attempts were also made to improve “native agriculture” (Jones and Garforth 1997). After the 1866 famine in Orissa state in India, the first department of agriculture was established in Orissa followed by departments in each of India’s states. In 1896 Zanzibar was the first British colony to appoint a director of agriculture. More important was the establishment in 1898 of the Imperial Department of Agriculture for the West Indies in Trinidad, the site of this year’s AIAEE conference just over one hundred years later. In the next 15 years similar departments of agriculture were established in several African, Southeast Asian territories and the Caribbean islands. Gradually during the colonial period, agricultural societies were formed to promote experimental work and instruction in modern agriculture. The Ceylon Agricultural Society included an agricultural extension service to reach native cultivators. Gradually, more research, education and extension institutions were established for the benefit primarily of colonial families and the ultimate financial profit of colonial governments.

National extension programs as we know them today are largely a post-World War II and post-independence phenomenon (Swanson and Claar, 1984). Extension programs in Latin America and the Caribbean were developed primarily in the 1950s, with some in Latin America in the late 1940s and others in the early 1960s. Most programs in Asia and Oceania were developed in the 1960s. Most programs in Africa were started in the 1960s and 1970s with some exceptions such as Guinea where an extension service that included smallholders was not established until 1984. Most programs in LICs
were established through external assistance, particularly that of the U.S. The development of extension programs in LICs contrasts with their development in the U.S. or Europe where extension systems evolved more slowly and through popular demand.

### Goals of Extension

Government policy is intended to provide the mission and focus of an extension organization within its overall development policy and strategy. Policy forms a legal basis for establishing government provided extension services and the mechanisms for its financial support. Policy also establishes the inter-institutional links among extension and other organizations, most notably with agricultural research. Unfortunately, not all extension programs are guided by clear and well-informed policies.

Extension can and does serve many missions and purposes. Within government programs these purposes and functions have frequently changed for any number of reasons, both internal and external to specific countries. Policy determines relative priorities between export or food crops, technological or human resource advancement, and types of clientele. The goals of extension programs fall somewhere on a continuum with technology transfer at one end of the spectrum and human resource development at the other (Nagel, 1997). This is not to say that technology transfer and human resource development are entirely separate functions of extension. When technology transfer is the major goal, extension programs center on the delivery of inputs, credit and other services. When developing rural human resources is the major goal, programs provide primarily non-formal education to improve knowledge and skills, including problem-solving skills, and deliver information rather than actual technologies to rural clientele.

Policy determines if an extension program focuses primarily on crops for export or for domestic consumption. Research, extension or education programs established during the colonial era focused on export crops. This focus has generally continued in the post-independence phase, with the addition of extension services on food crops. More competencies and interest, however, still exist for export commodities. This is in part because more research based information is available on export commodities.

Policy also determines the clientele of extension services. Such clientele can be large-scale farms or small-scale farms, those producing food crops or export crops, on women producers as well as men producers, on youth in addition to adults, on farmers in high-risk, heterogeneous agroecologies or low-risk, homogenous agroecologies.

The goals established by extension policy should also help extension administrators determine the organizational approach needed by extension to fulfill its goals. Success depends in part on how closely the approach taken fits the defined goals (Axinn, 1988). The next section discusses the more common organizational approaches taken by extension services in less-industrialized countries.

### Organizational Approaches

While most approaches are oriented toward general rural households, the first approach discussed is not.

#### Commodity-based Extension

The original goal that required this type of organizational approach was to generate revenue from and meet the colonial demands for a steady supply of tropical agricultural products, such as coffee, cocoa, tea, cotton, sugar and rubber. Many commodity-based services from input supply to export marketing were and are sometimes today vertically integrated by the government, parastatal or private firm. Extension services were usually responsible for handling input distribution, credit, marketing and collecting loan repayments. Today farmer cooperatives frequently handle inputs, credit
and marketing allowing extensionists to focus on information services. Commodity oriented extension services were often more effective and efficient. The extension organization was smaller in size and more focused in purpose. Its direct handling of or coordination with other related services within a foreign-held company or parastatal greatly enhanced productivity and profitability. One of the most notable examples of commodity-based extension was organized by the French for cotton in West Africa. Extension services for cotton among small-scale producers went through three stages of evolution from building awareness and interest in cotton production, to integrating extension with other services, to advising cotton farmer associations (Mahdavi, 1989). Commodity based extension, however, often neglected the needs of food crops and livestock, and overlooked the effects of cash crop labor demands on household members particularly women and children.

**Ministry-Based General Extension**

The most common organizational approach of extension services is that of general services based in ministries of agriculture. In establishing an extension program, the ministry of agriculture often appeared as the most logical way to reach rural communities. Both research and extension were often housed in the ministry of agriculture during colonial periods. Extension services could be administered along the same government administrative structure out to the village level. Field agents were generalists, which seemed to match the needs of non-commercial, small-scale producers. Specialists could be employed to cater to needs of special groups.

Fundamental problems arose, however, as ministries of agriculture tried to serve farmers and urban consumers; food crop and cash crop production; all rural households and the needs of specific groups; high-potential and resource poor farmers. In short, extension services had too many contradictory policy goals. Organizational structures and communication mechanisms were highly bureaucratized and centralized.

Services provided often went the path of least resistance: to innovative, educated male farmers producing cash crops for which there is more research-based information. Mechanisms were lacking to include the input of extension and common rural households into research agendas. Extensionists were not seen by the ministry of agriculture as primarily for educational purposes, but for non-educational activities such as data collection, input and credit supply, and electioneering. These problems are not uncommon in some LICs today.

**Integrated and Project Approaches**

Integrated projects of the 1970s addressed the diverse institutional services that must be coordinated in a timely manner to bring about agricultural or rural development. The integrated agricultural development projects, IADPs, did not just involve extension, but included agricultural research, input supply, credit, mechanization and often infrastructure components. The integrated rural development projects, IRDPs, were even broader in focus addressing other sectors involved in rural development such as education, health and infrastructure. The IRDPs trace their roots to the community development efforts, particularly those in South Asia, and the *animation rurale* approach of the French in West Africa. These projects emphasized the role of the rural poor in planning, implementing and evaluating projects and in strengthening their indigenous institutions (Swanson and Claar, 1984).

Both the IADPs and the IRDPs used a project approach. These projects were time constrained activities financed by donors that took place in specific locations. Most projects not only focused on a geographic unit, but often on a client type, a commodity or an innovation, or a combination of these, such as irrigation for rice development in a river basin. The best and the brightest staff were hired away from the public sector. They were paid well and enjoyed improved working conditions.
The advantages to the integrated and project approaches included their ability to achieve results faster. The projects were more wildly being confined to a smaller area, and in the case of the IADPs, often confined to improving a particular commodity or introducing an innovation or both. These projects often suffered from their complexity and lack of coordination. The intended project beneficiaries were only passively involved. They would have been the most concerned about timely coordination of agricultural inputs, for example, but were not trained to manage and coordinate project components. Project staff often found it difficult to later return to government positions where they faced jealous colleagues and inferior working conditions.

**Animation Rurale**

The *animation rurale* approach was established by the French in francophone Africa. The approach was based on a participatory, emancipatory philosophy with parallels to the philosophy of Paolo Friere in Brazil (Nagel, 1997). The approach helped to raise consciousness and group collective action to define, understand and address problems and to integrate rural areas into national systems and programs. A primary feature was the *animateur* or *animatrice*, an individual not already involved in village leadership, selected by the village to be trained, supervised and supported by the government’s rural development agency. The trained individual would reside in the village where he or she would share his or her knowledge and skills with other villagers, and serve as a communication link between the village and government agencies.

The approach did not last long, nor did it achieve some of its loftier goals to empower and include rural peoples in national affairs. The approach was not easy to operationalize. Farmers often wanted technical information more than consciousness raising. The philosophical approach of empowerment and consciousness raising, and the roles of *animateur* are in use today particularly among nongovernmental nonprofits.

**Training and Visit Extension**

The Training and Visit (T&V) extension is arguably more a set of management principles applied to weaknesses common in general extension services than a distinct organizational approach. It is perhaps the most widely adopted and debated of the approaches discussed herein. The problems T&V addresses are critical ones: poor institutional structure, inadequate management and supervision of staff; little direct contact with farmers, particularly subsistence farmers; poorly trained staff; and little interaction with research. In response to these problems, more staff were hired to improve staff to farmer ratios. More vehicles were purchased to increase staff mobility.

Uniforms were provided to make extension staff easily identifiable. Regular visits by agents to designated “contact farmers” were established as well as the fortnightly training of agents. Agents were taught by subject matter specialists who had been instructed by researchers. Well managed extension, however, could not make up for a lack of relevant research-based information to communicate to smallholders. Information messages were centrally determined rather than responsive to local needs. The organizational structure and communication mechanisms fostered little if any farmer feedback; nor did they recognize and incorporate local knowledge. Resources were not provided for demonstrations or experimentation. The overall costs proved unsustainable.

While the principles of staff supervision and management, research-based training and regular contact with farmers are still valid and used today, many other aspects associated with T&V have evolved. Rather than working with only individual male contact farmers, agents work with groups of farmers, including groups for female farmers. Agents are being trained in participatory diagnostics. Small funds are, in cases, provided for demonstrations and on-farm experiments with farmers.
Participatory Approaches

Participatory approaches have long enjoyed success primarily with nongovernmental nonprofit services that largely operate in smaller localities. Rather than being centrally organized, managed or programmed, services are provided in collaboration and consultation with local communities. Local knowledge and resources are tapped to both diagnose problems and experiment with solutions. Working with villagers in this manner requires not only technical knowledge but educational and group process skills and an open attitude.

T&V-based extension services in sub-Saharan Africa are evolving from a technology transfer focus to participatory approaches such as the Village Level Participatory Approach. This approach is similar to *animation rurale* in that villagers become more aware of the root causes rather than symptoms of their problems. Agricultural extension and rural development agents are trained in participatory diagnostics primarily using rapid rural appraisal tools. Villagers are taught to organize themselves in order to mobilize both locally based resources and the external resources needed to rectify problems. This approach is similar to the IRDPs in that more than just extension services are brought to bear on village-level problems.

Unified Approach

The term “unified approach” of the 1990s may be limited in use primarily to the World Bank and other major donors to extension services in Sub-Saharan Africa. The unified approach is in essence going back to the general ministry-based extension service. The costs incurred by governments to offer more than one extension service have lead to this approach. Rather than separate extension services delivering services for livestock, fisheries, or different crop types, one extension service covers all livestock, fisheries, and crops. Agents are to be generalists backstopped by specialists.

Programmatic Improvements

Some of the major improvements being made in extension programs are in the areas of clients served, education, natural resource management, and monitoring and evaluation. Each of these are briefly discussed.

Clients Served

While it is easier to reach the larger-scale, more progressive and better educated farmers, extension services are making greater efforts to serve those in need of agricultural information who are often overlooked. One of the first emphases was to reach smaller-scale producers, including subsistence farmers in more risk prone and diverse agroecologies. Subsequently as the role of women in agriculture was better understood and appreciated, women are gradually receiving more extension services. Farmers are increasingly becoming organized, sometimes with the help of extension. Extension agents are learning the mutual benefits to farmers and the extension service of working with farmer organizations. Agents are now learning how to help form and work with farmer organizations, including organizations for women and for youth. In places such as the Ivory Coast, the extension service is hiring or contracting firms with farmer organization specialists.

Youth are most recently and only too slowly being recognized by ministries of agriculture and extension organizations as valid clients of agricultural services. In sub-Saharan Africa at least half the population is 15 or younger. Urban employment opportunities are in increasingly short supply relative to the increasing number of educated young people. Young adults could be encouraged and assisted to return to rural areas through educational programs and other services needed to help them establish agricultural related businesses.

Staff at all levels need the appropriate knowledge, skills and attitudes to enable them to better reach these different clients groups. A host of different donor-funded projects have in cases been helpful to targeting these traditionally under-served clients.
Nonformal Education

Rather than extension agents being assigned non-educational duties, such as data collection, input and credit delivery, extension services have focused increasingly on their role in educating rural households. These previous duties subtracted considerably from their time to provide information services to farming families. Their role in delivering and pursuing credit repayment often impaired their relationships with villagers.

Natural Resource Management

Extension services are not just helping farmers improve their production practices but to conserve the natural resource base on which both present and future agricultural productivity depends. This requires new learning on the part of agents, specialists and supervisors on integrated aspects of agriculture, such as nutrient cycling, integrated pest management and agroforestry. They have to learn practical techniques and help villagers develop local solutions to conserve soil and water, improve soil quality, and conserve biodiversity.

Monitoring and Evaluation

Monitoring and evaluation (M&E) units were started in some extension organizations as late as the 1990s. M&E is vital to organizational capacity to assess the impact of programs and program changes in order to continually improve services. For example, if program changes are made to reach more women, M&E units need to assess if more women are better served, which women are better served and toward what end result. The importance and purposes of M&E, however, are often poorly understood, even feared, and thus neglected. Yet its importance is raised by the increasing need to justify investments in extension services. As governments and donors look to cut costs, extension needs to show its economic returns to investments. It is not easy, however, to determine the economic or social benefits attributable to extension services apart from other agricultural services, or from political or economic changes.

Organizational and Management Improvements

Other improvements are being made in the aspects of organizing and managing extension services. These include but are not limited to decentralizing extension, improving staff competencies and improving human resource management.

Decentralization

Centrally organized and managed services have proven themselves unnecessarily bureaucratized and consumptive of resources, slow to respond to local needs and to move sufficient and timely human and financial resources to rural areas. Decisions that could be better made locally were made at the center. To address these weaknesses, efforts are underway to restructure extension such that resources and decision making are decentralized. District level offices, for example, are responsible to manage resources based on priorities within the district. In some cases, decision making and management are further devolved to lower levels of community organization.

Staff Qualifications

More is asked of extension personnel today than ever before. They need to work not just with individuals but with groups; with not just men, but women and youth; not just crop production but natural resource management, integrated systems, agroforestry, and fisheries; not just provide answers but help villagers diagnose their problems. These requirements place new demands on both in-service training and pre-service education to help extensionists develop the knowledge, skills and attitudes necessary to meet an increasing set of diverse demands.

To improve staff competencies, the entry level requirements of new employees are being raised. While degree requirements are increasing, the quality of education behind these degrees are
deteriorating. While there are isolated cases of improving pre-service education in LICs, a pipeline problem is emerging, particularly in sub-Saharan Africa (Birmingham, 1998). The agricultural education institutions are not turning out graduates with the knowledge, attitudes and skills needed in extension services today. Within government ministries agricultural education is like a step child. In many countries, institutions of agricultural education are managed within ministries of agriculture where funds are tight and the vision and expertise to manage well-run, relevant educational institutions are lacking. However, moving agricultural education institutions under the jurisdiction of ministries of education places a greater burden on ministries, which are trying to improve if not merely provide basic primary and secondary education for an ever growing student population. Furthermore, ministries of education lack the expertise and often the interest to shape and manage high-quality agricultural education.

To cope with the new demands placed on existing agents, some extension services in Africa are supplying remedial (recyclage) training to amend deficiencies, particularly when agents must be generalists (Birmingham 1998). But agents cannot learn livestock production, for example, in a three day or even a three week short-course like they could at a three year educational institution with practical learning facilities. This training, currently financed by donors, is expensive. Overall costs escalate when one considers that governments have already paid for three or four years of agricultural education at government financed institutions, only to get a poor return on their educational investment when staff lack needed competencies. Governments spend again for remedial training to try to amend the poor returns on their first two investments.

Human Resource Management

Even if staff are well trained, they must be well utilized and motivated through effective human resource management policies and programs.

Many extension administrators have had training in managing and motivating human resources, often at great expense. Some changes are being seen, but the changes needed are not commonplace. Needed are career opportunities within extension and merit based salary increases within staff levels. Criteria for promotions need to be clear and beyond mere changes in academic credentials. Award and reward opportunities are needed to recognize and value high performing staff. Continued learning is important, particularly for well motivated staff.

Summary

The experience of less industrialized countries with extension services varies greatly over the decades and scores of countries on different continents. I attempt to provide a brief historical overview of the different approaches taken to providing government funded extension services in lesser industrialized countries, and some of the problems being addressed as country administrators and donors have sought to improve those services. We will now turn to my colleague from Uganda who will discuss in more specific terms his experience with extension services.

References


This topic needs some elucidation: In commenting about some trends in extension, I do not regard myself as the authority, but rather as someone standing on the touch line — not competent enough to be a referee and by profession not directly or practically engaged enough to quality as a player, but with a passion for extension and involved enough to have an opinion. The touch line perspective also has a geographical connotation (of which it is also partially a product), in that it relates to the peripheral location and the marginal importance of my country at the southern tip of Africa, the Third World continent.

Any perspective or point of view is — although it appears to be complete and true to the observer — is necessarily subjective and only a point of view. The totality or total perspective (truth), although we are destined to pursue it, is bound to stay beyond our reach and capacity. In this sense the perspective that I am presenting is also only one point of view, but it might just be worth sharing. The philosophical nature refers to what we probably all share, namely the love (sophia) for truth (phi/os), especially in matters where anomalies, contradictions or confusions are apparent.

A frustrating and contradicting issue about extension — at least in many parts of the world — is that extension, which is by nature one of the most challenging and demanding professions, still has to rely on extension workers with little or no professional training. This applies particularly to the critically important field of human behavior. This is the focus of numerous other disciplines like Sociology, Psychology, Anthropology, Economics, Adult education, etc. They have one common goal, namely the understanding or better understanding of human behavior. Extension is no different, except that in Extension we cannot afford the luxury of only studying behavior, but are in the business of behavior intervention or change facilitation. Therefore, in order to be effective, it is imperative that we rely heavily on the supporting disciplines, and gather and make maximum use of the of all useful insights and knowledge researched and developed by them. But somehow we fail to properly integrate this knowledge. We keep our sectional or disciplinary perspectives. For the same reason the theories and models identified or developed for extension are discipline specific and there is little progress towards interdisciplinary models. Or could it be that these disciplines, or our knowledge of them, are still so immature or rudimentary, that interdisciplinary approaches could weaken disciplinary roots and ultimately compromise depth and quality of thought and research? Could this also be the ultimate outcome of the modern tendency to amalgamate disciplines into bigger multi-disciplinary units?

There is currently a new interest in knowledge and information systems, which are enthusiastically propagated as models for extension. The systems nature is appealing, but is it such a useful model for analyzing knowledge processes in agriculture and for diagnosing the problems of knowledge dissemination/transformation in situations of agricultural change and development? This may be the case at macro-level, but is an actor-oriented approach not more appropriate at micro or inter-personal level? If the so-called real world does not exist apart from the sets of
subjective perceptions and evaluations of particular social actors, then clearly we are dealing with multiple realities and the ones prevailing within a particular situation (the decision making unit) are critical for analysis and intervention purposes.

This brings me to the situation specificity of behavior, which is so often overlooked and has led to generalizations that have not stood the test of time. It started with generalizations regarding extension or teaching methods. Today they are common in areas of extension approaches. An example is the propaganda or campaign-like promotion of the T & V approach in most countries of the Third World by the World Bank, and this in spite of its apparent deficiencies. The situation specificity implies that any approach or method is likely to be appropriate and suitable for certain specific situations, but not for all.

In recent years we have seen a dramatic paradigm shift in extension, namely a drastic move away from the technology-transfer model towards more facilitative and participatory approaches. In many cases this change appears to have taken on such extreme dimensions, that it can be referred to as a paradigm “slide” rather than a shift. What are these extremes?

The extremes are manifested in such phenomena as, for example, the status or importance attributed to PRA. It is conveniently ignored that extension with its underlying philosophy of “help toward self-help” has always been, at least intentionally, participatory in nature. Instead PRA, although it refers to only a specific method is seen by many to epitomize everything that extension is all about. Needless to say, it is unreservedly accepted to be the most appropriate method under all circumstances. Associated with this is the claim that only qualitative or “soft” approaches in need assessments are reliable and valid.

Extreme stances are also apparent in regard to the value attached to community needs. Here the controversial issue is whether the community needs (accepting that they have been determined in a reliable and representative manner) have absolute value not only in the sense of Chambers’ (1963) “farmer first” notion, but even to the extent of “farmer only”. This complete subordination to the needs of the community is probably rooted in the humanistic ethical principle or viewpoint, that the development agent has no right to impose his/her values on the community he/she serves, and consequently his/her function is to assist and help them in achieving their needs. No wonder that even the concept of Extension is coming under fire.

Is this realistic under all circumstances to only assist in the realization of felt needs, irrespective of what these needs are? Does it also apply to expressed needs that the development agent cannot condone or identify himself with (for example, certain political issues, etc.)? Does it mean that aspects of common good or needs related to resource conservation or long-term sustainability cannot be addressed, if they are not expressed or do not feature prominently in the community’s need or problem hierarchy?

A justified question is whether it is possible or realistic for an extension agent to become actively involved and facilitate change without imposing his/her values onto the community. Even protagonists of the so-called “farmer only” notion do not hesitate to promote participation or other values like equity, gender equality, sustainability, etc., even if these were not been expressed needs or are reconcilable with the values or needs of the respective culture or community. Perhaps we need to accept that any intervention or involvement by outside agents, is not possible without an indirect imposing of values. If this is the case, then the main difference between approaches lies in the finesse with which values are imposed.

It is fascinating to observe how most countries have similar extension policies and priorities and promote similar issues (e.g. decentralization, sustainability, equity, gender equality of quotas, etc.), and this in spite of widely varying circumstances. Is it because they are the ultimate solutions (truth), unquestioned like laws of nature, or is it because they are zealously propagated? The production model was a high priority in the first world for many years before sustainability and ecological aspects became the priority and focus of extension. With Africa “having to conform,” will it mean that Africa is
expected to short-circuit this production phase. In whose interest and with what consequences?

Accepting that intervention by an extension organization or agent is hardly possible without the introduction and promotion of foreign values, does the community then need any protection? Should there be an ethical code or is commitment and belief in the development program or its content sufficient justification? The latter certainly places tremendous responsibility on Extension.
AIAEE Business Report

Significant business of the Association for International Agricultural and Extension Education was transacted at the conference. The business included reading of the minutes of the 1997 AIAEE Conference, officer reports, committee reports and election of new officers.

New Officer Election

New officers were elected to serve AIAEE for the 1999-2000 year. The new officers are:

- President: Satish Verma
- President-Elect: Wade Miller
- Secretary: Deirdre Birmingham
- Treasurer: Steve Jones
- Member-At-Large: John Richardson
- Student Representative: Katherine Raphael

Constitution and Bylaws Changes

There were no request for changes or amendments to the Constitution or Bylaws this year. The committee does not see a need at this time for any changes to the Constitution or Bylaws. Everything seems to be working well.

Resolutions

Resolutions approved by the membership of the Association.

Resolution 1: Recognized Janet Henderson, AIAEE President, Satish Verma, AIAEE President-Elect and Conference Chairperson, and Rama Radhakrishna, Editor AIAEE Newsletter, Satish Verma, Editor-Journal of International Agricultural and Extension Education, and Reta Yanik, AIAEE Webmaster, for dedicated leadership and service in the planning and coordinating the AIAEE Conference.

Resolution 2: Recognized the University of West Indies Local Organizing Committee, Dr. David Dolly, Dr. Dunstan A.C. Campbell, Mr. Steve Maximay, Mr. Rowl Arthur, Mr. Levi Browne for dedicated leadership and service in planning the AIAEE Conference.

Resolution 3: Recognized Dr. John Richardson, and his secretary Mary Ann Lofgren for their dedicated service in coordinating the AIAEE Research Sessions at the conference and preparing the Proceedings of the Research Meeting.

Resolution 4: Recognized Satish Verma for serving as Editor of the *Journal of International Agricultural and Extension Education* for Volumes 3, 4, and 5 and Sandra Sanders for coordinating the review and publication process for the *Journal*.

Resolution 5: Recognized the CTA (Technical Center for Agricultural and Rural Cooperation ~ ACP-EU) for providing scholarship assistance that made it possible for agriculture teachers from the Caribbean region to attend the AIAEE Conference.

Resolution 6: Recognized Jim Diamond for coordinating the wine tasting party for the AIAEE Conference participants.
Scholarly Activities

Eighty-seven (87) paper proposals were received for the conference. A total of 64 were accepted for presentations. Five (5) alternates were also accepted and presented at the conference. Seventeen (17) posters were presented at the AIAEE Conference. Dr. John Crunkilton was recognized for his service in coordinating the poster session.

A plan of action for the future was developed by the Scholarly Activities committee. Dr. John Richardson will Chair the committee for one more year and coordinate the paper sessions. The Poster Chair for the next two years will be John Vreyens from the University of Minnesota. The Outstanding Paper Judging for the next two years will be handled by Dr. Gary Leske from the University of Minnesota. Dr. Jim Connors will handle the publication of the *Journal of International Agricultural and Extension Education*. In 2001, Dr. Gary Wingenbach, Mississippi State University, will chair the paper session. Dr. Matt Baker will chair the paper sessions in 2002. In 2000 an overall chair of the Scholarly Activities to oversee all of these activities will need to be named by the AIAEE Board.

A subcommittee was formed to explore placing the proceedings on the AIAEE web page and developing a registered link for AIAEE. The subcommittee will also investigate potentially moving to electronic proceedings in the future. Dr. Gary Wingenbach will chair the subcommittee. Dr. Matt Baker, Dr. Jack Elliot, Ann Toness and Dr. John Vreyens also serve on the committee.

Membership Committee

According to the membership roster, 321 individuals are members of the AIAEE. Thirty-eight different countries are represented. Seventy-seven percent of the membership comes from three countries, the United States, Kenya and Trinidad–Tobago.

AIAEE Shingles have been distributed to all AIAEE Life Members. Twenty-four membership shingles have been sold in the past year with an income of $160. In 1994 there were 253 members. Membership has increased 12% since that time indicating the AIAEE is growing steadily. The committee is asking all AIAEE members to recruit two new members in the next year.

University Students

The university students will be updating the student list-serv and creating a link to the AIAEE website and further fund raising activities. Anna Toness, graduate student from Texas A&M University, was selected as a student representative-elect and will take over as student representative next year. There will be a silent auction at the 2000 Conference in Washington DC with all the proceeds going to student scholarships.

Legislation

It was recommended that the Legislation Committee be placed on inactive status and the duties of the committee be transferred to the Conference Planning Committee for the 2000 AIAEE Conference in Washington DC.
Future Conferences

The 2000 AIAEE Conference will be on March 30-April 1, 2000 at the Quality Inn in Alexandria VA. The theme of the 2000 conference is *Partnerships with the Private Sector*. Any suggestions for Keynote Speakers can be forwarded to W. Wade Miller at Iowa State University.

The 2001 AIAEE Conference will be held at Louisiana State University in Baton Rouge, LA. on April 4-6, 2001. The tentative location for the conference hotel is the Hilton Hotel in Baton Rouge.

Proposals are being accepted for the location of the 2002 AIAEE Conference. Several international locations are being considered. A final decision for the site of the 2002 Conference will be made by the 2000 Conference.

Publications

Dr. Jim Knight from the University of Arizona has been selected as the new Editor of the *Informer* (AIAEE Newsletter). The AIAEE homepage and association brochures continue to be developed and produced for members use.

Awards

Nominations for the Outstanding Leadership, Outstanding Service and Outstanding Young Professional are requested each fall in the *Informer*. More nominations are needed each year. Dr. David Acker, Iowa State University, will be serving as Chair of the Awards Committee for the next year.

Regional Chapters of AIAEE

AIAEE members in Trinidad & Tobago have been working on establishing a regional chapter of AIAEE. A meeting of over 40 agricultural extension educators meet this spring in Trinidad to discuss the idea. Wayne Ganpat, University of West Indies, is working with educators on the formation of this regional chapter.

Conference Registration

The 1999 AIAEE Conference was a record breaking conference. A total of 140 participants attended the conference in Trinidad. That is the largest participation ever for an AIAEE Conference. There were 40 participants from the Caribbean region. Ninety-one (91) registrations were received in the United States. Approximately 20 additional participants took part in the Tobago sessions of the AIAEE Conference.
Call for Papers
For the 16th Annual Conference
Association for International Agricultural and Extension Education

AIAEE will accept paper proposal summaries related to international agricultural and extension education issues. Topics related to the 2000 conference theme of “Partnerships with the Private Sector” 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, you must be an AIAEE member. Contact Dr. Steve Jones, AIAEE Treasurer, University of Minnesota, 240 Vo Tech Bldg, 1954 Buford Avenue, St. Paul, MN 55108-6078 USA, concerning membership information, (Tel: 612-625-1287/Fax: 612-625-7031), e-mail: sjones@mes.umn.edu. New members are invited. Please contact your professional in-country and international colleagues about the opportunity to submit a proposal. Each proposal requires the following information:

1. Separate title page with names (full contact information, including mailing address, fax number, telephone number, and e-mail address of the author responsible for receiving communications from AIAEE. E-mail address is especially important.

2. Please follow the prescribed format when submitting proposals.

   Introduction
   Purpose of paper
   Methods and data sources; or, theoretical/philosophical themes
   (the problem or issues, with attention to the arguments used)
   Results and/or conclusions
   Educational importance

3. Four (4) copies of the paper proposal must be included. More than one proposal may be included. Deadline for submission of paper proposals is September 15, 1999.

Send paper proposals to:
Dr. John Richardson
Department of Agricultural and Extension Education
PO Box 7607,
North Carolina State University
Raleigh, NC 27695-7607.
Tel: 919-515-2380 Fax: 919-515-1965.
E-mail: john_richardson@ncsu.edu.
(E-mail attachments are a suitable means for submission of proposals)

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.
Call for Posters
For the 16th Annual Conference
Association for International Agricultural and Extension Education

AIAEE will accept poster proposals related to international agricultural and extension education issues. Topics related to the 2000 conference theme “Partnerships with the Private Sector” are encouraged, but all submissions will be given full consideration. To submit a poster proposal, you must be an AIAEE member.

Each poster proposal requires the following information:

1. Separate title page with author(s). Include addresses, telephone and fax numbers, and e-mail addresses.

2. Two-page abstract, which includes:
   
   Introduction
   Purpose of poster
   Presentation planned
   If part of research project, methods, data, and results and conclusions; major points or information to be shared, and educational importance.

Deadline for submission of poster proposals is September 15, 1999.

Send three (3) copies of the proposal to:

    Dr. John Vreyens
    University of Minnesota
    International Agricultural Programs
    1420 Eckles Ave.
    190 Coffey Hall
    St. Paul, MN 55108 USA.
    Tel: 612-624-6780    Fax: 612-625-311.
    E-mail: vreyens@tc.umn.edu.
AIAEE Awards Ceremony

Outstanding Young Professional Award

Dr. Rama Radhakrishna, past edited the AIAEE Newsletter Informer, was presented with the Outstanding Young Professional Award from AIAEE for 1999. Dr. Rama possess a combination of ability, experiences and accomplishments that merits recognition by the Association of International Agricultural and Extension Education. In the short span of 10 years that he has resided in the United States, he has obtained a PhD in agricultural and extension education from Pennsylvania State University, and has made remarkable contributions both at Penn State and now at Clemson University. He is currently working in extension education at Clemson University.

Outstanding Leadership Award

Dr. Jack Elliot was presented with the 1999 AIAEE Outstanding Leadership Award. Jack Elliot is the kind of person in whom leadership is transparent and readily observed. I have had the opportunity to work closely with Jack for the past 10 years and I am please to nominate him for the Outstanding Leadership Award for AIAEE. I sincerely believe as Jack Elliot is richly deserving of this award because he has unique leadership traits and has applied these traits in his life and work to influence others and as a result accomplish a great deal. Mutually he and those he has worked with have made a difference. It is my pleasure to give Jack this award in recognition of all he has done for the Association of International Agricultural and Extension Education. Nominated by Dr. Satish Verma.

Outstanding Service Award

The 1999 Outstanding Service Award was given to Dr. John Richardson of North Carolina State University. John has had a career of over 30 years in extension education. He has worked for 10 years in Robinson County North Carolina as an extension agent. Then he worked in program and staff development as a specialist from North Carolina State University. Nominated by Dr. Rama Radhakrishna.

Appreciation Award

An Appreciation Award was given to Dr. David Dolly for his efforts in organizing an outstanding conference in Trinidad & Tobago. On behalf of the Association of International Agricultural and Extension Education we would like to recognize Dr. David Dolly and the entire organizing committee at the University of West Indies for all the work they did in planning and organizing the 1999 AIAEE Conference in Trinidad & Tobago.
Scarlet Ibis Award

A one-time only special Scarlet Ibis Award was given to Dr. Satish Verma. The award recipient was presented with a Scarlet Ibis key chain so that he will always be able to answer the rhetorical question, what color is the scarlet ibis?

Association Award

The Association Award was presented to retiring President Dr. Jan Henderson for her outstanding service as President of the Association for International Agricultural and Extension Education for 1998-99.

Association for International Agricultural and Extension Education
15th Annual Conference

Trinidad ~ Tobago
March 21-26, 1999

Outstanding Poster

Broad Based Partnerships for Research and Extension:
An Experience of the CFTU Network in the Phillipines
   Terry Tucker, Cornell University

1st Runner-Up Outstanding Poster

Agricultural and Rural Development in Ireland: A Study Abroad Program
   Julie Tritz, Iowa State University

2nd Runner-Up Outstanding Poster

Reaching Out: Appreciating Hispanic Culture and the Learning in the Language
   Ruben Nieto & Jan Henderson, Ohio State University
Facilitating Change in Senegalese Rice Production: Learning Serer Women Farmers’ Decision Making  
*John R. Vreyens, University of Minnesota*

**1st Runner-Up Outstanding Paper**

Improving the Quality of Higher Education in Agriculture Globally in the 21st Century: Constraints and Opportunities  
*David G. Acker*  
*Director, International Agriculture Programs*  
*College of Agriculture ~ Iowa State University*

**2nd Runner-Up Outstanding Paper**

Managing Public Sector Extension Organizations: Some Critical Issues  
*Dunstan A. C. Campbell*  
*University of the West Indies*

**3rd Runner-Up Outstanding Paper**

Extension Professionals Perspectives on Global Programming  
*Barbara G. Ludwig*  
*Ohio State University*

**Outstanding Graduate Student Paper**

Study Abroad Program as an Experiential Capstone Course: A Proposed Model  
*Randall J. Andreasen*  
*Assistant Professor*  
*Southwest Missouri State University*  

*Chia-Hsing Wu*  
*Research Assistant*  
*Iowa State University*
Facilitating Change in Senegalese Rice Production: Learning Serer Women Farmers’ Decision Making

John R. Vreyens, Ph.D.
Training Coordinator
International Agricultural Programs
University of Minnesota

Outstanding research paper from the 15th Annual Meeting of the Association for International Agricultural and Extension Education, Trinidad–Tobago, March 22-26, 1999

Abstract

Extension education has evolved from being a process of dissemination of information, to a process of actively advocating for change, to facilitating the change process. To be a facilitator of the change process requires deeper knowledge of the internal dynamics of a community and the factors impacting people’s decision making. The purpose of this case study is to describe an extension education program in which the extension educator’s role was as a facilitator in the change process. Using Rogers’ innovation-decision process as the conceptual framework, ethnographic research techniques were used over three growing seasons to collect data revealing the factors impacting this process in women farmers. The rice production system is described as well as the major findings on factors impacting the five steps of the innovation decision process. The process of facilitating change in this case study is described leading to conclusions of what is required to be an effective facilitator of change for sustainable development. The paper advocates developing new competencies and teaching new skills to the next generation of extension educators so that they can be effective advisors to farmers strengthening the feedback loops in the research process.

Introduction

One of the challenges we in the field of extension education face moving into the 21st century is the search to make development sustainable. There are too many examples of development efforts which collapsed when funding ceased or international consultants returned home. The key to sustainability lies within the people and communities being acted upon. (See Cernea, 1985; Pretty, 1998; Swanson, 1984).

Extension education has evolved from being a process of dissemination of information, to a process of actively advocating for change, to facilitating the change process. (See Boone, 1989; McDermott, 1987; Rasmussen, 1989; Rogers, 1983; Shaner, Philipp, and Schmehl, 1981). The skills required to accomplish these different roles are not the same. The extent to which one has intimate knowledge of the people and communities within which one works also will vary. To be a facilitator of the change process requires a deeper knowledge of the internal dynamics of a community and the factors impacting people’s decision making. The role of facilitator or advisor implies active participation on the part of the extension educator to learn from the farmer. The challenges in the day-to-day decision making by the farmer must be known so that changes or ideas can be presented to the farmer which address their situation. A standardized recommendation may be irrelevant but in facilitating change a standard recommendation can be adapted in collaboration with farmers to increase the probability of sustainable change.

Purpose

The purpose of this case study is to describe an extension education program in which the extension educator’s role was as a facilitator in the change process. The specific objective uses Rogers’ innovation-decision process as the
conceptual framework to describe the process revealing the factors which guide, direct, or influence a farmer’s innovation-decision process in relation to a rice extension program. There are four parts to this paper. To begin, this paper presents the interaction during the implementation of a rice extension education program in Senegal. Secondly, the factors unveiled which impact the farmers innovation-decision process are described. This is followed by a description of the role of the facilitator in the process. Finally, a reflection on the educational importance of this case study is presented.

Method

This study used an interpretive research paradigm. The researcher was participant observer during three growing seasons serving as the extension educator in two communities. Since the subject matter studied included human interaction and experience, as well as process variables, ethnographic research techniques were used to conduct the study.

Throughout the growing season, weekly visits were made to the rice fields. The author, as a Peace Corps Volunteer, lived in the villages year-round allowing the process for gathering information to be iterative. Specific research methods used by the author were personal interviews with farmers, network analysis, time allocation studies, group interviews for pre- and post-season planning and evaluation, and observation.

Rice Extension Program

The rice extension program was a joint effort between Peace Corps/Senegal and Winrock International Institute for Agricultural Development funded by the United States Agency for International Development. The goal of this project was to provide poor farmers with improved crop varieties, better agronomic practices, and simple methods of production, storage, and distribution of seeds (Bragantini & Schillinger, 1992). Winrock provided technical assistance and the initial supply of improved rice seed. For its part, Peace Corps/Senegal provided trained individuals who served as the extension educator at the village level. The objectives of the program were: 1) to use improved seed varieties and improved seed production and handling techniques in crop production systems; and 2) to increase production of secondary crops (rice, manioc, sweet potatoes, and others) in appropriate crop rotation or inter-cropping schemes. The end to meeting these objectives was to demonstrate through on-farm comparison plots, the new rice variety and rice cultivation practices with small groups of farmers in the villages where Peace Corps Volunteers were living and/or working.

The Peace Corps Volunteers followed an established set of activities as part of the extension program. In year one, the volunteer conducted a baseline data survey with five pre-selected farmers. The baseline data survey served two purposes: to become familiar with the cultivation of rice in that community and to collect data on the varieties of rice grown in the communities participating in the survey. This information allowed the technical consultant and volunteer to learn the characteristics of rice grown and the ecology in that locale so as to select a rice variety to introduce and to have a basis of comparison between the new rice variety’s performance and the local varieties. During the first year, data were collected only on the traditional variety. With this information, a decision was made on which of four new rice varieties to introduce into the cropping system for that locale.

The communities in this study direct-seeded their rice. The choice of a new rice variety for this upland, rain-fed production system was DJ12-519 which was developed in Senegal. For direct-seeded rice, the emphasis of the extension program was seeding on-line with an animal-drawn planter. For women who could not plant with an animal-drawn seeder, a metal rake was designed as an alternate method to assist with planting the rice on-line. The rake could be dragged across the field marking furrows into which the rice seed was sown. In addition, a weeding schedule was promoted. If a farmer weeded her field twice, the weeding should be done 15- and 40-days post-emergence. If the
farmer weeded only once, then it should be 25-
days post-emergence.

In year two, the on-farm comparison plots were
established. The rice farmers who participated
in the baseline data survey were given seed of
the rice variety DJ12-519. The volunteer
assisted the farmer to establish side-by-side plots
of the new rice and a traditional variety using
one kilogram of seed. Throughout the growing
season, the volunteer was responsible for
collecting data on both plots using the baseline
data survey form used the previous year. During
the second year, a larger number farmers were
recruited to participate in the baseline data
survey with the expectation that each of them
would receive a kilogram of the new rice variety
the following year.

Results

Using Rogers’ 5-step innovation-decision
process as the framework for monitoring the
change as it occurred within the communities,
this study began to reveal the factors impacting
the women’s choices in the village rice
production system. This framework permitted
the extension educator to learn more about these
factors and begin facilitating the decisions made
across three growing seasons with respect to the
rice production activities in the communities.

Both communities in this study were
predominantly Serer. The Serer are
agriculturalists combining livestock with crops
and permanent fields with bush fallow rotations
in a carefully balanced, highly productive
system (United States Department of the Army,
1974). The communities grew peanuts, millet,
sorghum, corn, and rice. Families shared
responsibility for the production of peanuts,
millet, sorghum, and corn. Rice was a crop
which the women worked. The rice fields
averaged 806 m² in size but contained two or
three varieties of rice. Women made the
decision as to the variety of rice placement
based on the soil characteristics (i.e., too hard to
work before the first rain) or water level (i.e.,
standing water during the growing season). The
rice plots were transformed into well-water
irrigated, market gardens of tomatoes,
peppers, onions, eggplant, and okra after the rice
was harvested.

The exchange of knowledge was facilitated by
the organizational structure of the village. Each
of the communities had a women’s group with
elected officers. The volunteer’s entree into the
village was made through the women’s group
selecting five individuals to be the first
participants in the program. The officers were
generally direct relatives or related by marriage
to the village chiefs of the communities.

Women in the communities shared rice seed and
each variety carried the name of the woman who
passed the seed onto others. The exception to
this was the variety introduced during a Chinese
project 20 years earlier which was referred to
just as Chinois. When a farmer was interested in
a different variety of rice with a particular
characteristic--such as a very short-cycle-- the
women shared the knowledge. Most of the
knowledge in the current extension education
program was not new. The Chinese had
demonstrated seeding on-line and introduced a
dwarf, short-cycle, high yielding rice variety
previously. SODEVA, a program of the
Government of Senegal, re-itered the use of
animal-drawn planters for rice ten years earlier.
This program reinforced these ideas as factors in
the persuasion step to follow. Working as an
extension educator in the communities, the
volunteer became a new source of information
for the new rice variety called Djibilor or DJ12-
519 and was also expected to answer broader
questions on other varieties of rice.

At the end of the first growing season, armed
with the information from the baseline data
survey and several months of observations, the
first group meeting was held with the women.
Previously we worked individually in the rice
fields as measurements and observations were
taken. But a group meeting was held to discuss
the introduction of the new rice variety and their
concerns with the program. The first concern
raised by the women was the change in the
climate of the area. The rainfall pattern was
changing. They recognized the decrease in the
amount of rainfall as well as the timing of the
rains. The ten year average of rainfall was 674
mm from 1982 to 1992 falling on an average
of 44 days during the rainy season. The need was raised to have a rice variety better adapted to this change in rainfall.

The farmers who agreed to participate in the program had similar issues affecting their decision making during the persuasion step. With less rainfall, they wanted access to a rice variety that better matched the change in rainfall pattern. A variety which added to their already multi-variety fields was seen as advantageous. A major concern for the women was the vegetative growth pattern of the rice. The women had work responsibilities with the peanuts and millet. Collectively, the farmers voiced two concerns about whether or not to try the new rice variety. An early variety may flower before they had time to weed the fields resulting in them damaging the grain as it formed when they did move to weed the fields. The second, again an issue of timing, dealt with the need to keep birds away from the rice. The women in one community had their rice fields in a distant location. If they were still busy with the work in the peanuts and millet, the children could not walk that far to spend the day in the fields. In this case, the community selected fields closer to the village for the trial so that the children could go to the fields and keep the birds away.

The persuasion step showed the contrast between the two communities. The women in the village where the volunteer lived were already sowing their rice fields with oxen-drawn planters. This system had been working for the past five years at least. The arrangement was that all fields were prepared in April. The men sowed the millet in May prior to the rains. The women would then plant the rice, also prior to the rains. This left the animals and planters available for the men to plant peanuts when the first rains began. The second community had yet to establish this pattern. The men waited longer before sowing the millet. The women needed to establish the window of opportunity to use the animals and planters for sowing the rice prior to the start of the rains.

The decision step was difficult to document in this case. Although the factors that affected the persuasion step were discussed with the women, the artificial structure of only allowing five farmers per year to establish comparison plots severely limited participation in the program. It was during the second year that it became apparent, using network analysis, that one of three clans in the community did not have a single participating farmer. The fact that the volunteer was placed within the compound of the village chief and that all the farmers in the program were blood relatives or in-laws reinforced the power structure of the community.

The implementation step was straightforward once the decision to participate in the program was made. The 10 women involved in both communities for the first year of the program made the decision when to plant the rice. Each farmer also chose the traditional rice variety she wanted used in the comparison plot. A unique aspect of these communities was the fact that Serers are matriarchal. Whereas an assumption was made that the husband would participate in planting the rice, it was actually a son or grandson that eventually escorted his mother or grandmother to the field to sow the rice. Some sons also had a role in the harvest. In the few cases where the field was harvested on the same day using a scythe, the son or grandson harvested the rice. The other way of harvesting rice was done by the women themselves; in this case, a farmer moved across the field harvesting the rice one panicle at a time requiring several days to complete the task.

The confirmation step of the innovation-decision process was impacted by five factors. The side-by-side comparison plots permitted the women to make their own observations of the differences between the DJ12-519 and their traditional variety. The weekly visits to the field by the volunteer allowed for discussions and observations to be made with the women throughout the growing season. For example, observations of a fungal infestation in a traditional variety which did not affect the DJ12-519 is a case in point. Another time the discussion centered on the lodging of the rice in one half of the field but not in the other half sown with DJ12-519. It provided an opportunity for the women to pose questions during the season instead of after the fact during a post-
harvest meeting. The acceptance of the new variety is demonstrated by the average increase of 234% in surface area planted in DJ12-519 during the third year of the study; individual farmers enlarged their DJ12-519 areas by 180 to 306%.

The harvests in the first year of the trials had the biggest impact on the confirmation step of the farmers. In the first year of the trials, yields ranged from 25 to 144 kilograms of rice harvested for one kilogram of seed planted. The change in variety and cultivation practices resulted in increased levels of production in both communities as shown in the table below.

<table>
<thead>
<tr>
<th>Standardized Average Yield of Rice (kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional rice variety</td>
</tr>
<tr>
<td>broadcast seeded</td>
</tr>
<tr>
<td>Traditional rice variety</td>
</tr>
<tr>
<td>seeded on-line</td>
</tr>
<tr>
<td>DJ12-519 variety</td>
</tr>
<tr>
<td>seeded on-line</td>
</tr>
</tbody>
</table>

Seeding on-line using a traditional rice variety resulted in a 44% increase in average yield. Using the DJ12-519 variety, seeded on-line, resulted in an 88% increase in yield over traditional varieties, broadcast seeded; and a 30% increase in yield over traditional varieties seeded on-line. The yield was a major factor on the decision-making but not the only factor contributing to confirmation of DJ12-519 rice production.

A devaluation of the currency in 1994 and a change in monetary policy impacted the household cash resources and therefore a need for higher rice production. Rice has become a staple in the diets of the Serer communities. The ability to have rice at the midday meal to replace millet is indicative of wealth. In 1992, a 50-kilogram sack of rice, smuggled across the border from The Gambia to the south cost 5,500 francs CFA. After the changes in 1994, that same 50-kilogram sack of rice could only be purchased from a city to the north and was priced at 9,250 francs CFA. The impact that this had on households with limited cash sources made it imperative for the women to increase rice production as a way of decreasing the purchases of imported rice and using up scarce cash required for other household needs.

The farmers after the first season gained first hand knowledge of DJ12-519. They saw it as a plausible alternative for their rice fields given that it had a shorter growth cycle and could provide rice for a household earlier in the season. The introduction of DJ12-519 did not become a replacement for the traditional rice. The most flavorful rices mentioned by the women were the late maturing varieties that required more water. Although DJ12-519 had the advantage of producing more, the desire to maintain production of at least a small area of the better flavored varieties of rice continued the practice of having a field of a mixture of rice varieties.

### Facilitating change

This extension education program was designed to assist the women farmers with their rice production. The tendency was to think all farmers needed to switch to DJ12-519 rice given its yield potential. The program advocated reallocation of labor from weeding to planting on-line and for the men to take a larger role in rice production. As the extension educator, a personal bias was to keep the decision-making with the women. The role to assume then would be to feed farmers information to allow them to make the best decisions. In addition, the volunteer was a feedback loop to individuals working with rice on a national level to access other information for the women.

Over three growing seasons, I gradually began to appreciate the manner through which the women could be helped. The new rice variety could produce more and sooner in the season. It would relieve a family’s need to dispense scarce cash for purchased rice. DJ12-519 would never replace the traditional rice varieties which were better tasting and harvested later—and therefore stretched out the period of time before a family needed to purchase rice. The DJ12-519, being more drought tolerant, provided a greater cushion during times of sporadic rainfall. It added flexibility to the complex planting patterns women practiced in their rice plots.

The economic changes the communities...
experienced had a major impact on the innovation decision process. As Schnieder (1986) suggests Africans are economizers. The changes in monetary policies increased the need for local rice production due to a doubling in the price of rice but with no increase in cash income for the farmers to purchase rice. Therefore, the people’s preference for rice over millet impels them to modify their current production practices to increase yields. Given the scarce resources available to the women, the development strategy needed to keep the cost to the farmer as low as possible. The advance of one kilogram of seed was practical for the women with the only expectation being they should return one kilogram of seed after their first harvest which was passed on to other women in the community.

The rice extension education program had been planned for the national level, but a key to sustainable change was found within the communities as women voiced their concerns regarding the recommended changes revealing the innovation-decision process of the women. Their concern began with the growing cycle of the rice. A short-cycled variety interfered with their work in millet and peanut fields; a long-cycled rice delayed harvest and the transition of their rice fields into vegetable gardens. The availability of the children to sit in the rice field to scare away birds was also a factor in the decision to plant the new rice variety.

The value of seeding rice on-line was recognized by the women. Expending more labor at planting time would reduce the labor required later to weed a broadcast-seeded field. In both communities, men controlled the use of the oxen and planters. The villages differed in that men in only one village provided the necessary window of opportunity for the women to use the oxen and planter in the rice fields prior to the rains. Serers are matriarchal so in the community that did seed on-line, it was not the husbands who helped their wives with planting rice, the women turned to a son or grandson to accomplish the task.

The new rice variety played a role in management of household resources. DJ12-519 was a 100-day rice variety and a high producer. It complemented the other rice varieties used in the communities selected for length of growing season, productivity, and flavor. In addition, with a devaluation of the currency, it became imperative at the household-level to produce more rice to decrease purchases of imported rice which used scarce cash required for other needs.

Conclusions

To be effective facilitators of change, extension educators need to acquire a new set of tools. Learning the factors that impact the innovation decision process of the Serer farmers could not be accomplished through passive observations. The process of facilitating change begins with the entry of an extension educator into a community. A level of interaction with the community must be reached beyond the meetings where an educational program is conducted. To do this, a new set of tools permitting extension educators to obtain an in-depth understanding about how people in different cultures and environments make decisions is required. Using the tools available through the social sciences such as network analysis, time allocation studies, in-depth interviews and not just survey questionnaires will assist the extension educators in learning about the communities they serve. Intimate interaction with farmers, such as occurred in this case study, discloses how change impacts the work of farmers and internal dynamics of community systems. Monitoring this change and participating in the discussions to address the concerns within the community is one avenue to ensure the sustainability through facilitating the farmers’ innovation decision process.

Educational Importance

The importance of this case study is two-fold. First it points to the need to develop within the next generation of extension educators new competencies necessary to be facilitators of change. The skills required of this cohort are methods to enter the field, interact with farmers, and learn the factors impacting the innovation-decision process. This holds true for expatriates in the field as well as for university-educated nationals born and raised in the capital city but
now working at the village level. It is imperative that extension educators understand the thought process of the farmers in order to facilitate change. Teaching the skills necessary to follow the process, in addition to the methods of introducing change, should be an integral part of the education programs for extension educators. Secondly, this case study reflects that to facilitate change, understanding the thought process is the first step to a) facilitating the thinking process of a farmer on her/his terms and b) assuming the role of advisor to the farmer, who is the key to sustainable development. An advisor cannot be of service when the factors impacting a farmer’s decisions are unknown. How to address the concerns facing the farmer remains problematic if the extension educator does not know what knowledge needs to be brought into the decision making process. The knowledge gained by being an advisor, with an intimate knowledge of the innovation decision process of farmers, will only strengthen the role extension educators serve as feedback loops into the research process on behalf of and by the farmers.

References


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Improving the Quality of Higher Education in Agriculture Globally in the 21st Century: Constraints and Opportunities

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Abstract

Agricultural knowledge systems play a central role in developing and disseminating knowledge, information and technologies relevant to improving global food security and environmental sustainability. Formal agricultural education is one component of agricultural knowledge systems. This article argues that current agricultural education systems are in need of fundamental reform to support improvements in global food security and environmental sustainability. Constraints and opportunities are presented relative to improving the quality of higher education in agriculture globally. Challenges discussed are the lack of global cooperation, the limited frame of reference associated with educational nationalism, underutilized sources of knowledge, the need for globalization of educational content, gender imbalances among students and faculty members, narrow disciplinary approaches used in organizing learning, and the narrow definition of scholarship and its impact on recognition systems at institutions engaged in higher education in agriculture. Advances in communication technology coupled with a rebirth of global cooperation make it possible to achieve significant advances in higher education in agriculture.

Introduction

At the World Food Summit of 1996, representatives agreed to a target of reducing the number of malnourished people worldwide by 50% before the year 2015. Alex McCalla (1998) of the World Bank makes the case that knowledge will be an increasingly important driver in expanding food production. This article begins with the premise that agricultural knowledge systems play a central role in developing and disseminating knowledge, information and technologies relevant to food security and environmental sustainability. This article focuses on one component of the agricultural knowledge system: institutions providing higher education in agriculture. It attempts to present a global perspective, including issues pertinent to both developed and developing countries. It examines the comprehensive field of higher education about agriculture and the multitude of disciplines of which it is comprised. It also presents a case for global cooperation in solving problems of mutual and widespread interest. The article argues that current systems of higher education in agriculture are in need of fundamental reform to support improvements in global food security and environmental sustainability.

In 1997, the Agricultural Education Group of the Food and Agriculture Organization (FAO) of the United Nations published a study entitled Issues and Opportunities for Agricultural Education and Training in the 1990s and Beyond. It pointed to the failure of agricultural education and training in many developing countries to adapt to a changing world and presented a thoughtful analysis of the underlying issues (FAO, 1997). The study examined agricultural education and training at all levels. Issues such as relevance of education offerings to the needs of farmers, the commercialization of agriculture, the
degradation of the environment and the role of women were all examined through the FAO expert consultation process that preceded the publication of this study. Van Crowder (et al., 1998) presents an excellent summary of constraints facing agricultural education and training in developing countries. Building on the FAO expert consultation, their paper focuses on the challenges internal to national systems of agricultural education, including aspects of curriculum content and educational processes. They argue that inter-university alliances “offer a means to capitalize on individual university strengths and to reduce costs reflected in the duplication of efforts.” Developing countries, however, have no monopoly on problems associated with agricultural education and training.

This philosophical article is based on recent literature, the outcomes of several conferences, and the author’s observation of agricultural education in roughly 20 countries. While the obstacles are significant at a global level it is certainly true that not all pertain to every country nor are the solutions the same in every instance. It is dangerous to generalize about higher education in agriculture on a global basis because of the tremendous variety of institutions and settings. However, it may be useful to adopt a global perspective in analyzing several general constraints as a basis for developing alternative solutions appropriate to different settings.

Constraints and Opportunities

Lack of Global Cooperation

The current landscape of cooperation among entities engaged in higher education in agriculture is a “patchwork” rather than a network. The patterns of this cooperation are easily legible. First, national and regional cooperation is fairly well defined. Examples include AMEAS (Asociacion Mexicana de Educacion Agricola Superior) in Mexico, the Board on Agriculture of the National Association of State Universities and Land Grant Colleges in the United States, and the Inter-university Conference for Agricultural and Related Sciences in Europe. These voluntary associations are composed of institutions engaged in higher education in agriculture. They share information and collectively offer advice on national and regional policy matters. Such cooperation exists in Africa on a sub-regional basis in organizations such as the Southern Africa Development Conference.

Second, many professional and disciplinary organizations are open to members worldwide. However, true global cooperation is limited by distances and costs associated with attendance at meetings. For example, the International Association of Agricultural Economics attracts professionals from around the world. However, participants from Western Europe and North America account for the majority of attendees at its conferences. Representation of developing countries is limited, an example of the unintended exclusion of some systems from global cooperation. In a rather ominous, cautionary note, Alex McCalla (1998) states that those who are not part of the global system will be left behind.

Third, there are a number of international or multilateral agencies engaged in serving higher education in agriculture, either directly or tangentially. However, specialized mandates and missions can constrain true global cooperation. For example, the U.N. Educational, Scientific, and Cultural Organization focuses on education in developing nations but does not concentrate on agricultural education. FAO focuses on agriculture - including agricultural education - but primarily in developing nations. The Organization for Economic Cooperation and Development has an interest in higher education but works principally with its members in industrialized nations.

This patchwork of organizations and jurisdictions is inadequate in supporting cooperation on a global, multi-regional basis inclusive of both developing and developed countries. Such benefits as inter-university student and faculty mobility, curriculum
sharing, and cross-fertilization of thought improve with the scale of interactions offered by global university cooperation. With the development of communication technology, a truly global association may now be feasible.

Educational Nationalism

Provincial or nationalistic views are a significant constraint to the improvement of systems of higher education in agriculture. Too frequently, there is a tendency to believe that “our approach is best.” While pride of ownership can be a powerful, positive force, it has often led to isolation and insularity of national education systems. The fallout from such inward looking systems may include poor programmatic articulation between national systems, constrained international mobility of students among systems, duplication of curriculum development efforts, and the professional inbreeding that occurs when generation after generation of faculty are trained in the same system. Such agricultural education systems earn themselves a name used by Professor Vernon Ruttan: “island empires” - institutions unable or unwilling to build bridges to learn from each other.

One simple example relevant to agricultural education and extension professionals illustrates how professional organizations could lead the process of uniting “island empires.” The example relates to the exchange of scholarship between the US-based Association for International Agricultural and Extension Education (AIAEE) and European agricultural and extension education professionals. At present there are surprisingly few AIAEE members who attend European professional meetings such as the high quality European Seminar on Extension Education and only a few Europeans who attend AIAEE. Fortunately, there is growing cooperation between the US-based AIAEE Journal of International Agricultural and Extension Education and the European-based Journal of Agricultural Education and Extension (formerly the European Journal of Agricultural Education and Extension). Professor Jet Proost at Wageningen University and Research Centre is the editor of the latter journal. She and the journal’s editorial board have made a special effort to solicit papers from international scholars and have changed the name of the journal to reflect this global orientation. More recently, the AIAEE journal published abstracts from the European counterpart journal. Ideas such as a joint annual issue, advertising of US, European and other relevant conferences in both journals, and possibly a joint meeting of the two groups, are relatively easy to organize and will help to reduce the isolation of these two professional groups. In an age of constantly improving global communication, further cooperation should be possible.

Sources of Knowledge

Every scholar dreams of international recognition for his or her major research breakthrough. Unfortunately, too many of us get carried away hoping for, but not insuring, uniqueness. Agricultural educators need to teach their students (and to show by example) that good scholarship means working to uncover prior accomplishments by other researchers and “doing our homework” in searching the literature. But the dream to pioneer a new concept, approach or understanding can be achieved. We need to counsel our students in their research efforts to measure what counts, not just to count what can easily be measured. The shelves are full of studies that counted something easily accessible but virtually without scholarly significance. We need to strive for greater significance and to publish in internationally accessible journals so others can build on our work.

Another dimension of the question regarding sources of knowledge pertains to an under-recognized source within society. Typically, we rely on research-based information generated by scientists to fill our lectures, textbooks and extension bulletins. But let us consider a different paradigm related to sources of knowledge. Understanding indigenous knowledge systems is crucial to informing agricultural education professionals about the
accumulated wisdom of individuals and families involved directly in cultivating the soil and in animal husbandry. Indeed, the combination of these two types of information can form a much more global and holistic view of the subject matter of agricultural disciplines (Warren, 1991; Scott, 1998).

Globalization of Educational Content

Agribusinesses operate in a global market and require a workforce prepared accordingly. Globalization of the substance of the student learning experience is a key pathway to preparing a global workforce. Educators in the field of agriculture need to operate with an expanded frame of reference to ensure a balance of domestic and international educational content. In a recent commentary Acker and Scanes (1998) argue that all learning for agriculture students should include global dimensions to prepare for global careers, to enhance appreciation for diversity, and as a key element in a quality education. The initiative called Globalizing Agricultural Science and Education Programs for America (GASEPA, 1997) reinforces a similar viewpoint. GASEPA is a national effort involving land grant universities and the US Department of Agriculture in promoting a philosophy in which research, extension and teaching include an increasingly strong global dimension. Further support for this notion is found in a report of the American Council on Education (1998) which states that “the United States needs many more people who understand how other peoples think.” The report goes on to say that university education “has a leadership role to play in developing a globally literate citizenry and workforce.” Simply stated, global skills, global perspectives, and global citizenship are now a fundamental prerequisite for success in agribusiness careers.

Gender Imbalances

Although there are some notable exceptions, women are generally underrepresented among students in agriculture programs, particularly at higher education levels. This is especially true in certain African countries (Acker, McBreen & Taylor, 1998). The same problem, not surprisingly, is also true among faculty ranks in agriculture disciplines.

Agriculture fields are unattractive to women students and professionals. These fields can be made more attractive through inducements such as scholarships to study in non-traditional areas, career planning and guidance from supportive mentors, and specially designed support structures at colleges of agriculture. Budget priorities among international donors and university administrators need to address these issues.

Greater levels of participation by women in higher education in agriculture can yield a variety of benefits to society. Among these are the establishment of a greater pool of highly trained women in agriculture to lead policy reform, research, education, and development planning efforts that reflect the specific needs of women and families. Ultimately, food security and population control, especially as evidenced in sub-Saharan Africa, benefit from better-educated women.

Narrow Disciplinary Approach

Agricultural education systems are largely organized around disciplines and many of those disciplines have long histories and traditions. Yet, as we know, problems in the real world do not normally present themselves in neat disciplinary boxes. Education should be aimed at developing broad thinkers to be problem solvers, not just technicians who have mastered a specific body of knowledge. Van Crowder (et al., 1998) share this concern.

A narrow definition of agriculture can lead to a narrow interpretation of what is appropriate in an agricultural education program. In some institutions agriculture is defined largely in terms of plant and animal production while at others the social dimensions inherent to agriculture are more widely recognized. In this process of learning, students need to examine agriculture from a systems perspective.
including social, biological and physical systems.

We need to address the question of balance in agriculture students’ learning experiences. There is growing consensus that agriculture students study too little in the areas of foreign languages, policy, ethics, communication, social sciences, and the environment. However, required classes in a student’s discipline often fill a significant portion of their undergraduate programs. A B.S. program may require five or six years to complete. Thus, without the elimination of some disciplinary requirements the students’ programs will have little room for emerging areas of study.

We need to prepare students for the world of work of tomorrow when graduates will have multiple careers. Strong cases have been made for moving more aggressively away from memorization of facts and a reductionist approach. These approaches are being replaced by an increase in real life experiences, experiences that teach students how to learn throughout their lives and careers and to present a more systems oriented, holistic view of agriculture. It is significant that the W.K. Kellogg Foundation’s thrust to reform agricultural education uses the phrase “food systems professions” suggesting a very broad view of the soil-to-table continuum.

Narrow Definition of Scholarship

In university systems there is a tendency to equate scholarship with the processes and products of research endeavors. In the United States, “research universities” are roughly patterned on a Germanic model in which research productivity has traditionally been a key indicator of professorial performance. In other countries, the relative worth of research contributions in recognition schemes depends on the traditions or model of education emulated by the institution, on its perceived role in society, and on whether graduate education is offered and research emphasized.

An emerging notion promotes the view that scholarship can take many forms. Professor Ernest Boyer, in his book Scholarship Reconsidered: Priorities of the Professoriate worked from the premise that “to sustain the vitality of higher education in our time, a new vision of scholarship is required, one dedicated not only to the renewal of the academy but, ultimately, to the renewal of society itself” (Boyer, 1992). Boyer suggested that we recognize the scholarship of teaching, discovery, integration and application. In his typology, the scholarship of discovery is that form of scholarship we often call basic research and equate with scholarly productivity. But Boyer presents a convincing case for recognizing the scholarship of achievement in teaching, in endeavors related to the integration of knowledge from disparate sources to provide new understandings, and in the creative application of knowledge such as in extension work. Reform efforts need to come to grips with this question if institutions are to balance the reward structure among those involved in research, extension, and teaching activities. Healthier, more balanced institutions should evolve from this process.

Conclusions

The author concludes that professional agricultural educators need to think strategically about what needs to be accomplished to prepare human resources required for feeding the world’s population and protecting its environment in the 21st century, and, where necessary, be prepared to shed traditions that constrain the professions. Making major improvements in the quality of higher agricultural education worldwide will depend on a variety of interrelated changes. Some changes will require efforts at the individual institution level while others will require global cooperation heretofore unknown in the field.

Higher education in agriculture suffers from myopic views of its role in the societies it serves and its role in the global change processes in which it could exercise considerably greater leadership. But this shortcoming is curable.
There is a continuing need to re-invent and reform to remain current, relevant and effective. We need to be both global and local in all that we do in agricultural education. There is a case for global cooperation as a driver in this process of improving higher education in agriculture. Such cooperation can help speed the pace of reforms and to enrich the process as new ideas are borrowed from other systems.

Mutual improvement of the education system should be the aim of global cooperation; the aim should not be to develop some form of centralized global control. The history of distant or central control of educational content and processes is filled with many examples of failures. In the recent book by Professor James Scott “Seeing Like a State” the point is made that centrally planned economies attempt to homogenize societies to make them easier to administer. Efforts to globalize agricultural education curricula could easily fall victim to the same homogenization and standardization. A different approach has been taken in the European Union. Their efforts to align and harmonize curricula and credit transfer (e.g. the European Credit Transfer System) have worked to avoid homogenization and standardization.

There is currently a window of opportunity for global cooperation in solving problems outlined in this paper. Major conferences were held in 1998 in Argentina, France, Russia, and Ukraine to examine the topic of reform in higher education. A new Global Consortium of Higher Education and Research for Agriculture, headed by Martin Jischke, President of Iowa State University, was formed in 1998 to forge links among agricultural universities and related agencies worldwide for the purpose of mutual improvement of institutions engaged in human resources development and research in support of global food security and environmental sustainability. Further information may be found on the Consortium’s web site: http://www.iastate.edu/~gcau/

There are significant implications for the target set at the World Food Summit of 1996. Higher education in agriculture will play a key role in either achieving or failing to achieve the goals agreed to by the world community. The choice is in our hands.

References


Managing Public Sector Extension Organizations: Some Critical Issues

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Abstract

In developing countries public sector extension is at crossroads. The changing world environment which focuses on production and productivity is demanding that public sector extension matches up to those criteria. The paper examines public sector extension management using Buford, Bedeian and Linder’s five functions of management; namely, planning, organizing, staffing, leading and influencing and controlling. Critical issues regarding each of the functions are discussed using examples from the Caribbean Agricultural Extension Systems. The paper concludes with some suggestions for addressing the some of the issues raised.

Introduction

In most developing countries agricultural extension is managed by the public sector or the State. The exception exists where there are commodities geared for the export market. In such instances, privately managed extension organizations are engaged. In the last decade, the world economy made a major shift towards free trade. Production, productivity and competitiveness became key words which drove the emerging free market economies. Many extension organizations began questioning their age long mission of improving the quality and standard of living of rural people. With this broad scope and limited resources, extension organizations found themselves not delivering to the many expectations. Governments and funding agencies were also asking questions about level of spending and impact of public sector organizations. This situation was even more acute in countries which had both systems of extension organization, public and private. In most of those cases private sector extension was delivering greater benefits to improve both quality and standard of living. Why then are private sector extension organizations being able to meet their clientele expectations while public sector extension is failing to meet their goal? This paper will first take a look at extension management and then address some critical issues facing public sector extension organizations in the English speaking Caribbean; and then finally, conclusions will be presented.

Extension Organizations

Extension organizations like most organizations possess both formal and informal structures designed to carry out tasks in fulfillment of goals. The creation of a structure which ensures that individuals can interact at both formal and informal is a precursor for the achievement of extension’s goals. In the formal situation, task oriented management styles are generally utilized; and in the informal setting, relationship oriented styles are preferred. Management styles should therefore reflect the reality of the management situation. Structure and management styles are key factors in the successful achievement of extension’s goals.

Extension management (Buford, Bedeian and Lindner, 1995) comprises five functions: (1) planning, (2) organizing, (3) staffing and human resource management, (4) leading and influencing, and (5) controlling. In public sector extension organizations in the Caribbean the performance of these functions are done mainly...
at two managerial levels; top management and middle management. In the execution of these management functions managers of extension organizations perform several tasks. Van Den Ban and Hawkins (1988) described three tasks for the effective operation of extension services. These are:

1. Making decisions regarding goals
2. Management of resources and manpower
3. Overseeing the execution of programmes

**Management of Public Sector Extension**

To highlight the critical issues of public sector extension management, the five functions of management, as presented above, will be addressed.

**Planning**

Planning as a management function positions an organization to make the most effective use of its resources and the environment in which it operates. Extension planning in public sector extension organizations, because of its attachment to a wider organization, should therefore take place within the framework of this wider organization. Extension organizational objectives must therefore relate to the overall Ministry’s plan. In the Caribbean the planning process encounters several problems. Two such outstanding areas are the managerial personnel involved in the planning process and the lack of a clear mission statement.

Managers are generally appointed because of their skills in interpersonal relationship and their ability to conceptualize situations which will put the organization on a path to success. In the Caribbean public sector extension managers are appointed because of their technical ability or their academic qualifications. In an FAO/UWI survey conducted in three selected territories (Jamaica, Trinidad and Tobago and Grenada) only 5.2 percent of the extension managers reported to have received training in management (Campbell & Rajack, 1988). Little attention is given to conceptual skills. In some cases the managers’ training and job experience on the one hand and their academic qualification on the other, are both unrelated to extension. Not only is this a problem in terms of such persons being able to come to grips with extension principles to adequately conceptualize the extension function but also in terms of motivation of staff. This paper is not purporting that someone who is not trained in extension would not be able to carry out the extension planning function but it is erring on the side of caution and actual experiences in the Caribbean which is pointing to this deficiency. In the cases referred to, the general sentiment expressed by front line extension officers is that of a belittlement of their profession. Extension officers air the view that this can only occur in extension, for no where within a Ministry’s structure would one find an extension professional heading a department which is not extension related.

In the 70’s and 80’s it was almost impossible to find extension organizations with mission statements. The Caribbean Agricultural Extension Project addressed this situation in the Organizations of Eastern Caribbean States (OECS). Even where mission statements exist, planning does not reflect the statements. The problem here is the lack of autonomy of extension programmes. In the Caribbean, public sector extension planning is an output of the Ministry’s overall planning and not an integral part of the overall planning of the Ministry. For instance, a Ministry, without consultation with extension, will decide to grow onions and request of extension to plan for its production. Onion now becomes part of the overall planned activities of extension. If however extension was given the autonomy to consider onion production in its programme a different result may be obtained because of factors which extension will normally consider in its planning process; for instance, willingness of farmers to grow onions, availability of land.

Public sector extension plans reflect a lack of understanding of the extension environment. The lack of clientele involvement in the planning process is evident. There is generally a sentiment among other units within the Ministry’s structure that the needs of farmers are
well known and that there is no need to consult with farmers in the development of programmes. This sentiment has now infiltrated the ranks of extension. For instance, at a recently conducted Participatory Rural Assessment in St. Lucia (Campbell, 1998) extension officers were reluctant to participate because they felt that the exercise was a waste of time.

The planning function is key to all the other management functions. It carries a certain kind of primacy (Buford, Bedeian and Linder, 1995). In the Caribbean, public sector extension planning is generally done by persons lacking the conceptual skills to position the organization to make the most effective use of its resources and its environment; as such, the other functions of management are usually adversely affected.

Organizing

Public sector extension organizations in the Caribbean usually have flat structures, consisting of a top level manager, the head of extension; middle level managers, the regional or district heads, and the front line officers. The structure is generally a reflection of the small size of the countries. Such structures allow for easy communication between the different levels; however, in public sector extension organizations in the Caribbean the distance is amplified by the physical isolation of the offices and the officers in their respective work area. In recent times, efforts are being made to remove this isolation through the upgrading of the offices and office facilities; for instance, the installation of telephone lines and computers.

In the Caribbean also, there is generally a lack of appreciation of the authority which goes with extension managers. This generally comes because of two factors: the lack of recognition of extension as a profession and the general inexperience of the managers themselves. What flows out of this situation is an extension manager with little power or no capacity to influence. This weakening of the capacity to influence impacts negatively on the authority of managers resulting in a weak overall extension structure. In an extension organization, the authority of the managers hold the structure together; and since this authority is lacking in Caribbean public sector extension organizations, most structures are weak.

In fact, the overall performance of public sector extension organizations can be tied to the question of extension authority. Managers in a situation where authority is undermined or weakened generally tend to renege on their responsibility and accountability. In the Caribbean, there is a general lack of responsibility and accountability among extension managers.

Extension by its very nature depends on a source or sources of information. Extension structures should be so designed to allow for coordination or easy access to resources both within the broader framework of the Ministry and beyond. Structures should allow for interaction, because the organization is not just a formal structure, it consists of people, a social system. (Albrecht et al, 1989). Public sector extension organizations in the Caribbean tend to operate as islands. Poor structural linkages with other units is the norm and there are few mechanisms in place to access the other resources that are outside its structure. There is also need for extension organizations to maximize the human resource potential within its own structure.

Staffing

Once a structure is in place and the organizational objectives are known, then management should put in place a mechanism for the hiring of staff. In public sector organizations, extension managers have little to do with the process of hiring or even firing. In the Caribbean, hiring falls under the purview of the Public Service Commission, an organization which constitutionally falls outside the control of government, but in practice is greatly influenced by it. The Commission hires based on a job description handed to it. In general, extension managers do not have a say in the writing of job descriptions to fit the type of personnel most needed for staff within the extension structure.

Then again, persons enter extension through the ‘back door’. Such persons are hired as
temporary staff without the necessary qualifications to enter the system; work for a few years, and then get hired. Although a mechanism of probation is in place, most public sector extension organizations do not use the mechanism. There is generally no assessment of the extension trainee to ascertain his or her suitability for the system. In response to this limitation an orientation programme was developed (Campbell & Saska 1994). The programme although attempted by some Ministries in the Eastern Caribbean was never institutionalized. Over the years such persons were not able to benefit from training because of their lack of qualification, and their ability to move through the system was severely limited. Where such situation occurs, conflict between the extension managers and such persons is very common. This creates a demotivating effect which is sometimes filtered through to other persons within the extension system, which finally leads to poor staff performance.

There is also the ability of public sector extension organizations to prepare itself for the future. The fact that extension planning is usually done by persons with limited knowledge of extension, the development of futuristic plans or strategic plans do not always occur. Structures, with the necessary staff are not put in place to position extension to take advantage of the changing environment. For instance, globalization and its effect were talked about in several fora, the need to have farmers adopt a business approach to farming was also well discussed; however, most extension organizations did not see the need to employ persons with farm business orientation to strengthen their staff or to put in place structures to have staff gain experiences in farm business management.

Leading and Influencing

Public sector extension managers because of their training and orientation are not adequately prepared to be good leaders. However, some have managed to learn on the job and have used their experience and seniority to establish the necessary authority to gain respect. In the OECS older heads of extension commanded greater respect and were able to hold the extension staff together. Their departure left a vacuum. The younger managers although more qualified were unable command the same respect. Generally, they did not devote enough time to the social needs of their staff.

Extension managers are also limited in the types of support they can give to their staff to satisfy their needs. Campbell (1992) in working with extension staff of the Ministry of Agriculture in Belize found that the number one need was training. Public sector extension managers do not have full control over who receives training and what type of training their staff receive. In fact, this is one area in which the authority of extension managers is undermined. For instance, it is not uncommon for the extension managers to learn through indirect sources of their staff being awarded scholarships to go on training courses.

Controlling

In extension management, controlling refers to the monitoring and measuring of accomplishment. In public sector extension organizations this is a major area of concern. Extension managers and staff are not generally accountable for the results of their efforts. Their positions are protected by their tenure in the government service.

In the 1980’s the Caribbean Agricultural Extension Project attempted to introduce performance development conferencing among extension organizations in the GECS. Its introduction was met with partial success. Some extension managers resisted the effort. The process brought out several areas of weaknesses in extension managers and some managers were not prepared to make the adjustment.

Conclusion

Public sector extension is now at crossroads. It has to deliver to stay alive. Governments are now questioning and reviewing the operations and management of extension services. They are exploring options. Some are actively pursuing the privatization model. There is therefore urgent need for extension to show impact. In the development of its objectives and programmes
public sector extension needs to take on board new strategies to actively involve its clientele. In keeping with this new thought extension organizations must be more transparent and as such more accountable.

The need to reach out and be more collaborative is also apparent. Extension organizations cannot exist by themselves but in association with others. Their structures and functions must reflect this reality. At the same time restructuring and retooling within public sector extension should not be unique to extension. Other units within Ministries should also undergo changes.

Extension managers must now truly take on the role of managers and cease to challenge their subordinates in terms of their technical skill. They ought to pay much more attention to their functions as managers.

Reference


Abstract

A study of 823 Extension professionals in a mid-western state investigated activities and attitudes related to global programming efforts. The study also sought to identify barriers which limit professionals’ ability to incorporate global perspectives into local programming. Results indicate over 60% of Extension professionals are interested in incorporating global perspectives and activities into programming. A lack of time, uncertainty that globalizing is a programming priority and lack of expertise or information were the primary barriers identified to adding a global perspective to domestic programming.

Introduction & Purpose of the Paper

Extension programs across the world are being challenged to consider their impact, relevance and effectiveness in our rapidly changing society. In the coming century, global components will become more central to our mission for Extension. They tie to the goals of economic well being and quality of life for citizens and remind us that we are part of a larger global community. As the AIAEE conference participants revisit Extension before the 21st century, pausing to examine the attitudes of Extension professionals toward incorporating global perspectives into programming for clientele and examining barriers which exist makes good sense.

In the summer of 1997, a study of all Extension Professionals in a mid-western U.S. state was undertaken. The goal was to determine the current level of activity and interest of Extension professionals relative to globalization. The study also sought to identify barriers which may impede professionals’ ability to incorporate global perspectives into local programming or participate in an international project. A review of literature revealed few studies conducted related to internationalizing the Extension component of the land-grant university system. A 1998 report by the International Agriculture Section of the National Association of State Universities and Land-Grant Colleges presents an Agenda for U.S. land-grant universities and indicates, “we urgently need to find ways to increase the level of engagement of our resident teaching faculty, research scientists, and extension agents in addressing global dimensions...” (GASEPA, 1998, p. 1). The Agenda supports the findings of the current study. Those interested in globalizing Extension or higher education within their own state or country may find the instrument developed and process used of interest.

Purpose and Objectives

The purpose of the study was to identify Extension professionals’ activities and attitudes toward six global dimensions.

1. To ascertain current involvement of Extension program professionals in global programming activities.

2. To ascertain the level of interest of Extension program professionals in incorporating global dimensions into future Extension programming for Ohio clientele.
3. To ascertain professionals’ interest in an out-of-country assignment.

4. To ascertain professionals’ perceived barriers to incorporating global dimensions into future Extension programming for Ohio clientele.

5. To ascertain professionals’ perceived barriers to participation in an out-of-country assignment.

6. To ascertain self-assessed competencies which will enhance global programming activities.

**Methodology**

**Population.** The target population consisted of 823 Extension professionals employed by Ohio State University in May of 1997. The population included all faculty and nonfaculty program professionals and administrators with an Ohio State University Extension assignment. Names were secured from the OSU Extension Personnel Office in May, 1997 to assure an up-to-date listing.

**Instrumentation.** A mail survey instrument was developed based on an instrument developed by Ludwig (1991) in a study of Extension personnel in Ohio. Content validity was established by a panel of experts from the College of Food, Agricultural and Environmental Sciences. To help control measurement error, the instrument was pilot tested and field tested using 26 Extension professionals. Test-retest reliability (1 month) was assessed. Reliability coefficients for domains of interest criteria (Nunally, 1967) established for reliability.

A five point Likert-type scale was used to measure the level of interest in incorporating a global dimension into future Extension efforts. Respondents were asked to identify whether they had: (1) slight interest, (2) low interest, (3) moderate interest, (4) considerable interest, or (5) high interest. Fifteen barriers were identified through a review of literature and interviews with Extension faculty and professionals. Respondents were asked to identify the three major barriers they personally perceived.

**Data Collection and Analysis.** The questionnaire and a personalized cover letter were mailed by campus mail to all program professionals in May, 1997. Questionnaires were coded to identify early and late respondents. Non-response error using late respondents as a surrogate for non-respondents (Miller & Smith, 1983). Using a t-test at the .05 alpha level, no significant differences were found between early (N=562) and late respondents (N = 92) on the domains of interest.

**Results and Conclusions**

Six hundred fifty-four of the survey instruments returned were usable. An additional 65 survey instruments were insufficiently completed to be used in the study or were returned with a notation that the individual no longer was an Extension employee. This represents a total return rate of 87%. Responses were coded for computer analysis using SPSS. Descriptive statistics were used. An overview of the results is reported.

**Current involvement of Extension program professionals in global programming activities:** Extension professionals are involved in a variety of international activities, with 63% identifying one or multiple activities within the past eight years. One hundred sixty one (25 %) professionals report they are currently incorporating a global dimension into Ohio Extension programming efforts. Most activities involved contact with individuals from another country. Only limited evidence of teaching activities or curriculum development by Ohio Extension professionals was evident. Table 1 reports the types of international activities and frequency of participation.
Table 1
Respondent’s Involvement in International Activities During 1989-1997

<table>
<thead>
<tr>
<th>Activity</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hosted an international visitor</td>
<td>231</td>
<td>35</td>
</tr>
<tr>
<td>Communicated by e-mail with an international colleague in another country</td>
<td>165</td>
<td>25</td>
</tr>
<tr>
<td>Served as a communication link between people from different countries</td>
<td>138</td>
<td>21</td>
</tr>
<tr>
<td>Involved clientele in an international activity</td>
<td>121</td>
<td>19</td>
</tr>
<tr>
<td>Advised an international student</td>
<td>108</td>
<td>17</td>
</tr>
<tr>
<td>Other involvement</td>
<td>101</td>
<td>15</td>
</tr>
<tr>
<td>Participated in an international study tour</td>
<td>91</td>
<td>14</td>
</tr>
<tr>
<td>Subscribed International Publication</td>
<td>77</td>
<td>12</td>
</tr>
<tr>
<td>Joined an international organization in your field</td>
<td>76</td>
<td>12</td>
</tr>
<tr>
<td>Developed curriculum materials incorporating international issues</td>
<td>73</td>
<td>11</td>
</tr>
<tr>
<td>Created an Extension program based on an international issue</td>
<td>68</td>
<td>10</td>
</tr>
<tr>
<td>Participated in an international development project</td>
<td>62</td>
<td>10</td>
</tr>
<tr>
<td>Conducted an international research project</td>
<td>47</td>
<td>7</td>
</tr>
<tr>
<td>Taught at an overseas institution</td>
<td>39</td>
<td>6</td>
</tr>
<tr>
<td>Involved in a “sister city program”</td>
<td>30</td>
<td>5</td>
</tr>
</tbody>
</table>

N = 654 - Percentage exceeds 100% due to multiple responses.

Hosting of an international visitor was reported by 35% of those surveyed, 25% have communicated by e-mail with an international colleague in another country, 21% have served as a communication link between people from different countries, 19% had involved clientele in an international activity.

Level of interest in incorporating global dimensions into future Extension programming for Ohio clientele: Four hundred and twenty five professionals (65%) indicated an interest in incorporating an international dimension into future Extension efforts. Most indicated a moderately strong interest in incorporating global dimensions into future programs. A Likert-type scale was used to assess level of interest. Scores ranged from 1-5, with 1 indicating slight interest and 5 indicating high interest. The distribution of ratings had a mode of 3 and a mean of 3.1 (SD 1.16). Thirty two percent indicated high or considerable interest.

Interest in an out-of-country assignment. Short term assignments or study tours were of greatest interest to Ohio Extension professionals. Forty-four percent of the professionals indicated an interest in an out-of-country assignment either at the present time or at some point in the
future. An additional 11% responded “maybe”. Thirty five percent had no interest in an international assignment and 10% had never considered the possibility. Those responding “yes” or “maybe” were asked to indicate the length of assignment they would consider. Short term assignments of less than three months were the preference of 48% of the respondents. Intermediate length assignments of 3-12 months were requested by 17% and 7% expressed an interest in a long term assignment of over 12 months.

**Perceived barriers to incorporating global dimensions into future Extension programming for Ohio clientele.** Fifteen potential barriers were listed on the instrument and respondents were asked to identify the three which were most likely to prevent them from incorporating a global dimension into future Extension efforts. The most frequently identified barriers related to lack of time (40%), uncertainty that incorporating global perspectives was a program priority (35%) and lack of experience (28%). Language skills to work with diverse Ohio clientele and family commitments were also identified as frequent barriers. Fear of negative career impacts (3%), lack of reward in annual performance appraisal (4%), not recognized in promotion criteria (4%) and cultural barriers (4%) did not appear to be major barriers. Table 2 reports the results.

**Perceived barriers to participation in an out-of-country assignment** The primary barrier to an out-of-country assignment related to family commitments (43%). Thirty nine percent perceived lack of time as a barrier. Other frequently identified barriers included: not a programming priority (25%), lack of financial support (25%) and language skills (24%). Lack of rewards in annual performance appraisals, lack of recognition in promotion criteria and lack of materials did not appear to be major barriers. Table 3 reports the results.

<table>
<thead>
<tr>
<th>Barrier</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of Time</td>
<td>264</td>
<td>40</td>
</tr>
<tr>
<td>Not a Programming Priority</td>
<td>228</td>
<td>35</td>
</tr>
<tr>
<td>Lack of Expertise</td>
<td>181</td>
<td>28</td>
</tr>
<tr>
<td>Language Skills</td>
<td>151</td>
<td>23</td>
</tr>
<tr>
<td>Family Commitments</td>
<td>139</td>
<td>21</td>
</tr>
<tr>
<td>Lack of Financial Support</td>
<td>108</td>
<td>17</td>
</tr>
<tr>
<td>Lack of Support from Local Clientele</td>
<td>97</td>
<td>15</td>
</tr>
<tr>
<td>Lack of In-Service Training</td>
<td>57</td>
<td>9</td>
</tr>
<tr>
<td>Lack of Materials</td>
<td>46</td>
<td>7</td>
</tr>
<tr>
<td>Other</td>
<td>36</td>
<td>6</td>
</tr>
<tr>
<td>Lack of Support from Administration</td>
<td>35</td>
<td>6</td>
</tr>
<tr>
<td>Cultural Barriers</td>
<td>29</td>
<td>4</td>
</tr>
<tr>
<td>Not Rewarded in Annual Performance Appraisals</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Not Recognized in Promotion Criteria</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>Lack of Support from Colleagues</td>
<td>23</td>
<td>4</td>
</tr>
<tr>
<td>Fear of Negative Career Impacts</td>
<td>18</td>
<td>3</td>
</tr>
</tbody>
</table>

Percentage exceeds 100% because of multiple responses.
Table 3

<table>
<thead>
<tr>
<th>Barrier</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Commitments</td>
<td>279</td>
<td>43</td>
</tr>
<tr>
<td>Lack of Time</td>
<td>258</td>
<td>39</td>
</tr>
<tr>
<td>Lack of Financial Support</td>
<td>166</td>
<td>25</td>
</tr>
<tr>
<td>Not a Programming Priority</td>
<td>163</td>
<td>25</td>
</tr>
<tr>
<td>Language Skills</td>
<td>156</td>
<td>24</td>
</tr>
<tr>
<td>Lack of Expertise</td>
<td>120</td>
<td>18</td>
</tr>
<tr>
<td>Lack of Support from Local Clientele</td>
<td>70</td>
<td>11</td>
</tr>
<tr>
<td>Lack of Support from Administration</td>
<td>43</td>
<td>7</td>
</tr>
<tr>
<td>Lack of In-Service Training</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>Fear of Negative Career Impacts</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>Cultural Barriers</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>Lack of Support from Colleagues</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Not Rewarded in Annual Performance Appraisals</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Not Recognized in Promotion Criteria</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Lack of Materials</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>29</td>
<td>4</td>
</tr>
</tbody>
</table>

Percentage exceeds 100% because of multiple responses.

Background demographics and competencies. Educational levels were high among respondents with 87% holding a college degree and 60% having advanced degrees. Of the total respondents, 42% were male and 58% were female. Extension professionals working at county or district locations represented 70% of the respondents while state-based professionals represented 30%. Program assignments closely approximated the proportions of the population. There is a group of professionals (23%) who have lived and worked outside the United States. Vacation travel was not included in the results reported. The time spent out of the country ranged from one month to 468 months.

Assessment of language skills other than English in spoken conversation, reading, writing and comprehension showed 23% reporting a fair or higher level of competency. Professionals were asked to identify language skills other than English and self assess their level of spoken, reading, written and comprehension skills. A four point Likert-type scale of Poor (1), Fair (2), Good (3) and Excellent (4) was used.

Implications

Although the study cannot be generalized to other states, it provides a broad overview of the current situation in one state. Further study of Extension professionals by program area of responsibility and in other states is suggested. A similar study of Extension professionals in 1989 (Ludwig, 1991) provided base-line data for comparison. Positive growth and change was noted in reducing barriers and increased interest in global programming for Ohio clientele was evident.

Leadership. The current study pointed to the need for Extension program leaders to communicate the importance for incorporation of global perspectives into on-going Extension programs. A major barrier was lack of understanding that incorporating global perspectives was a programming priority. Communication of an administrator’s support will be evident not only by what is said, but more importantly through the policies and procedures implemented in support of globalization. A clear sense of direction, strong leadership in globalization and enthusiasm will ensure concerted and sustained action. Development of incentives and an organizational culture that recognizes and rewards...
incorporation of global concepts into domestic Extension programming is necessary.

Extension leaders who provide a clear and enthusiastic sense of direction for globalization will help to ensure concerted and sustained action. Appointing a person to support and coordinate internationalization of the Extension program and activities is a necessary implementation strategy as is incorporation of fiscal support into the ongoing Extension budget. Policy mechanisms that support travel abroad, professional leaves, international assignments or time/resources to develop curriculum should be considered. Incorporation of global expectations into position guidelines, reward of middle managers for fostering positive change toward globalization and hiring candidates with international experience will enhance the human resource base of Extension. Extension leaders need to work with promotion and tenure committees to define international expectations.

**Professional Development.** If Extension educators have responsibility to help clientele develop a better understanding of the complexity of global issues, professional growth and development opportunities must be initiated for Extension staff. A barrier identified by the current study was a lack of experience and knowledge of how to add global dimensions to programming and curriculum. Extension educators need excellent technical skills, strong communication and people skills as they work with an audience who becomes more diverse each year. Global experience and attitudes increase in importance as universities target helping stakeholders to become globally competent. Extension educators must develop global knowledge and skills that can be transmitted to clientele through programming efforts. For some individuals, motivation and expertise development will come because of out-of-county opportunities. Most Extension faculty will not travel beyond U.S. borders so other methods must be identified. Staff development offerings could include: workshops, mentoring, developing of a resource library, hosting of international guests, or participation in self-directed learning. Creating linkages with corporate America to strengthen partnerships and with international universities should be investigated.

GASEPA (1998) identified five goals for incorporating a global dimension into teaching, research and extension programs. These include: (1) enhancing global competitiveness of U.S. Agriculture through human resource development; (2) development and dissemination of information about markets, trade and business opportunities; establishment of mutually beneficial collaborative global partnerships; (4) promotion of trade through global economic development; (5) promotion of global environmental quality and stewardship of natural resources management. As Extension expands to embrace the world, Extension must do so with local constituents, not for them. Development and dissemination of information about markets, trade and business opportunities should be encouraged. Promotion of trade through global economic development, establishing mutually beneficial global partnerships and creating a greater awareness and understanding of global environmental concerns are also suggested by the GASEPA task force. Commodity groups could be targeted for public policy education on global decision making.

Based on recommendations of the GASEPA task force, professional development opportunities might focus on enhancing global competitiveness of U.S. Agriculture through human resource development and initiating the concept of leadership development in a global context. Key leaders will benefit from interdisciplinary international experiences aimed at establishing mutually beneficial global partnerships and creating a greater awareness and understanding of global environmental concerns. Overseas travel for Extension professionals and leaders may be one approach, but creating cross-cultural competency, awareness and understanding for all age groups though local cross-cultural activities is required. The new millennium will offer many challenges to Extension. Recognition of the global
community we inhabit and share with partners around the world and expansion of linkages between domestic clientele and the international community will become an increasing priority.

References


Study Abroad Program as an Experiential, Capstone Course: a Proposed Model

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Introduction/Theoretical Framework

Educational reform in the United States is a constant, on-going process. New ideas and models are constantly espoused which are intended to dramatically improve education. One of these “new” ideas involves experiential learning. The ability to involve one’s self in specific experiences, to reflect and conceptualize these experiences, and then to take an active role in experimenting and building upon them, is the foundation of experiential learning (Joplin, 1981; Kolb, 1984).

Experiential learning, as well as problem-solving and decision-making abilities, has continually been touted as an essential element in the education process (SCANS Report for America 2000, 1991). The basic theme among all experiential learning models is that learning through applicable experiences, with requisite reflection and synthesis, provides for the best education (Kolb, 1984; Joplin, 1981). And, it is this experiential learning model which provides the backbone for a capstone course. The course provides a culminating experience, which needs to be carefully monitored so students achieve their stated objectives (Knowles & Hoefler, 1995; Aupperle & Sarhan, 1995).

Experiential learning, which has been shown to be an integral part of capstone programs (Andreasen, 1998), is equally integral to study abroad programs. Empire State College, for example, had incorporated the experiential and capstone concepts into their Principles of International Business Course. Students, who were provided the opportunity to participate in a study abroad program, could learn crucial international business concepts, skills, and other related learning which were being unmet in the students’ other courses (Herdendorf, 1991).

Purpose and Objectives

The purpose of this study was to develop a model for incorporating experiential learning into capstone courses and a rationale for the inclusion of study abroad programs into this course description. Specific objectives were:

1. Identify and define components of a capstone course.

2. Define study abroad programs as capstone.

3. Develop a model for incorporating experiential learning into capstone courses.

Methods/Procedures

This study employed a historical research methodology. This method is a systematic collection and evaluation of data to describe, explain, and thereby understand actions/events that occurred in the past (Fraenkel & Wallen, 1993).
Findings

Objective 1: Identify and define components of a capstone course.

In 1985, the Association of American Colleges (AAC) published its report entitled *Integrity in the College Curriculum: A Report to the Academic Community*. This report addressed concerns about the decay in the quality of the Nation’s Colleges and Universities. The findings support a minimum required curriculum which should include the following items: inquiry, literacy, understanding numerical data, historical consciousness, science, values, art, international and multi cultural experiences, and, study in depth. The study in depth area noted the following: a central core of theory and method, a range of topics, a sequence with advancing sophistication, and a means by which final mastery of a discipline’s complexity can be shown and assessed (Wagenaar, 1993). This description forms the basis of what is a capstone course.

In a recent study of capstone courses by Crunkilton, Cepica, and Fluker (1997), the authors offer the following definition of a capstone course: “A planned learning experience requiring students to synthesize previously learned subject matter content and to integrate new information into their knowledge base for solving simulated or real world problems.” Crunkilton et al. (1997) go on to state that a capstone course should “...ease the transition of students between their academic experiences and entry into a career or further study.” The course provides a culminating experience that needs to be carefully monitored so that students achieve their stated objectives (Knowles & Hoefler, 1995; Aupperle & Sarhan, 1995).

Six educational outcomes and five required learning activities were identified by Crunkilton et al. (1997). The expected educational outcomes of a capstone course include: problem solving; decision making; critical thinking; collaborative/professional relationships; oral communications; and written communications. Required learning activities include: projects, case studies, or written analyses, small group work, oral communication, intensive writing, and industry involvement. These outcomes and activities have been reiterated throughout the literature involving capstone courses (Zimmerman, 1991; Wagenaar, 1993; Aupperle & Sarhan, 1995; Crunkilton et al., 1997; Zimmerman, 1997).

Objective 2: Define study abroad programs as capstone.

In order for a study abroad program to be considered a capstone course or program it must be held up to the “light” of the characteristics of such programs or courses. Wagenaar (1993) makes the following comments with regards to the competencies required in a capstone course:

The capstone course revisits these basics; it asks students to interconnect them, to assess which aspects really are the most basic, to compare the basic questions...with the basic questions from other disciplines, to determine how their exposure...contributed to their liberal education and to their critical thinking capacities, to state how their exposure...has affected their values and their views of life, to explicitly link knowledge gained from one course with that gained in another, and to participate competently in a discussion of the basic arguments in the field. (p.211)

In a 1990 study published by the European Cultural Foundation, several academic effects of study abroad programs are listed. Among these were: tackling abstract problems, working with theories, articulating thoughts/views, cooperating with others, motivating other people, planning and following through, developing comparative perspectives (Opper, Teichler, and Carlson, 1990).

Experiential learning, which has been shown to be an integral part of capstone programs (Andreasen, 1998), is equally integral to study abroad programs. Mortensen (1978) states that
Experiential learning is conceptually linked to a great variety of activities that take place outside of the traditional classroom chiefly, internships, independent study projects and study-abroad programs. Empire State College incorporated the experiential and capstone concepts into their Principles of International Business Course. Students were provided the opportunity to participate in a study abroad program so that their students could learn crucial international business concepts, skills, and other related learning which were being unmet in the students other courses (Herdendorf, 1991). These related learning activities involved intense student-professor contact, student-student interactions, written and oral communications, and stimulating educational experiences.

Objective 3: Develop a model for incorporating experiential learning into capstone courses.

Based on the review of literature and researcher observations, a model for integrating experiential learning processes into capstone courses was developed (Andreasen, 1998). This model (MIELCC) (figure 6) draws upon the research and observations of educators in diverse fields of expertise but is oriented toward capstone courses in Colleges of Agriculture, although the benefits and applications of experiential learning and capstone course are universal.

Crunkilton et al. (1997) stated that one of the principal values of capstone course is to unify the fragmented disciplinary knowledge associated with the educative process. This model begins with this principle in mind. Crunkilton et al. further suggested five essential learning activities based upon their nation-wide analysis of capstone courses in Colleges of Agriculture. These activities are: problem solving, team work, decision-making, critical thinking, and oral and written communication.

The learning activities and instructional techniques included in the model’s required capstone components, (MIELCC) (figure 6), are also the activities and techniques rated by students as being of exceptional quality and the most beneficial to them professionally (Andreasen, 1998). These learning activities and instructional techniques facilitate the experiential process within the capstone course.

David Kolb (1984), in his book Experiential Learning: Experience as the Source of Learning and Development, summarizes seven themes which provide the theoretical framework for experiential learning. Kolb draws upon the works of Kurt Lewin, John Dewey, and Jean Piaget in forming guiding principles of experiential learning theory (Figure 1). Lewin’s work with T-groups and action research articulate with John Dewey’s work concerning the democratic values guiding experiential learning as well as the view of experiential learning as a life-long process. These views work in concert with Piaget’s contributions of the learning process as dialectic between assimilating experience into concepts and accommodating concepts to experience. Dewey’s unique works with pragmatism as well as Piaget’s epistemology round out the themes for the principles of experiential theory.

Currently there are many models of experiential learning. Most of these models are very similar. However, they all can be directly related to the traditional theories of Lewin, Dewey, and Piaget. The Lewinian model, a four-stage cycle, flows from a concrete experience through observation and reflections to the formation of abstract concepts and generalizations which can then be synthesized into new individualized theories and tested for applicability and then formulated into new concrete experiences and the cycle repeated. The Piaget model builds onto the concepts presented by Kurt Lewin. Lewin believed that the learning process was a cyclical interaction between the individual learner and his/her environment. Lewin proposed that the key to learning lies in the interaction between accommodating and assimilating experiences into higher levels of cognitive functioning.
The model proposed by David Kolb (1984) builds upon the works of Lewin, Dewey, and Piaget (Figure 2). This model depicts learning as a series of transitions among four adaptive modes: concrete experience, reflective observation, abstract conceptualization, and active experimentation. The four quadrants of Kolb’s model deal with the processes whereby knowledge is transformed through experience. Kolb explains that knowledge results from “the combination of grasping experience and transforming it” (p. 41). The knowledge, then, is transformed either through intention or extension and grasped either by comprehension or apprehension. In concrete experience, new content is introduced through new experiences.

In reflective observation, the content is presented through a variety of methodologies. The learner then contemplates and reflects upon them before moving to the abstract conceptualization mode. In this mode the learner creates concepts and forms them into generalizations. These concepts and generalizations are then used to make decisions, solve problems, and applications in the active experimentation mode.
Figure 2. The Kolb model of experiential learning (Kolb, 1984)

Laura Joplin (1981) developed a five-stage model (Figure 3) which directs the experiential learning cycle. The Joplin model is also a cyclical one with definite starting and ending points. The cycle begins with a focus stage where the educational objective is explained, but not too specifically. Next the learner is placed in a stressful situation where the problem must be addressed. This is the challenging action stage. Support and feedback stages occur for the duration of the process, which provide security and information to the student about what they have been doing. And a debriefing stage, the last stage, follows which allows for the sorting and ordering of information that may, in turn, lead to the next five-stage cycle.

Yet another popular model of experiential learning is found in the U.S. Department of Agriculture’s Cooperative State, Research, Education and Extension Service 4-H Program (Figure 5). This model is an adaptation of the Pfeiffer and Jones (1977) model (Figure 4) which is also cyclical in nature and begins with the experiencing of a concrete activity and cycles through the subsequent steps of the model. The learner becomes involved in an activity with this initial experience forming the basis for the entire process. The next phase is publishing. This refers to the learner sharing or “publishing” the observations with others that have experienced the same activity. This phase is followed by processing. After the observations are shared and integrated, then they are processed or reflected upon. Next, the generalizing phase is utilized to define, clarify, and elaborate on the learner’s experiences. The final step is applying the results of the experience in a novel setting or to a situation. The application of this new experience in itself begins the cycle anew.
Figure 3. The Joplin model of experiential learning (Joplin, 1981)

Figure 4. Pfeiffer and Jones model of experiential learning (1977)
The Cooperative State, Research, Education and Extension Service 4-H Program combines many of the aspects of the Pfeiffer and Jones (1977) model which built upon the works of Tannenbaum and Schmidt (1973). The central triangle in this model is a truncated version of Kurt Lewin’s model, while the outer circle contains basically the same elements as the Pfeiffer and Jones model, except that publishing is renamed sharing. This model, as well as Kolb’s model, provides the theoretical framework for many of the CSREES publications (Horton & Huthinson, 1997; CSREES, 1992).

The model then flows into a synthesis of several experiential learning models (Kolb, 1984, Joplin, 1981, Pfeiffer & Jones, 1977) presented in the review of literature. The interpretation these models and their incorporation into the capstone course concept are the product of this study and the synthesis of literature. The five “R’s” of the model (receive, relate, reflect, refine, and reconstruct) are a mnemonic device to represent the major areas of the experiential learning model (Figure 6). They are designed to spiral and funnel the required capstone components into an integration of the subject matter content so that they may become applicable and synthesized by the learner.

**Receive**: An activity or experienced is received by the learner. This activity or experience may be contrived by the facilitator or may occur spontaneously during the capstone course or may have occurred during previous courses. This step corresponds with previously cited models, many of them using the term “concrete experience” (Lewin, Piaget, Kolb, & CSREES).

**Relate**: Relating learned experiences to previously gained knowledge ties experiential learning into the capstone course philosophy. Taking fragmented disciplinary knowledge and unifying it is the intent of this step. This step may be referred to as “focus,” “internalized
Integration of Experiential Learning into Capstone Courses

Figure 6. Model for the Integration of Experiential Learning into Capstone Courses (MIELCC)

reflection,” reflective observation,” “share,” or “processing” in other models and is associated with reflect.

Reflect: Laura Joplin stated, “True experiential education is characterized by systematic interventions of the learning facilitator with the learner along an experiential path” (Joplin, 1981, p. 156). It is the reflecting upon the experiences received and relating them that distinguishes experiential learning from learning through experiences.

Refine: Once knowledge has been related to and reflected on it must be refined. This refinement process causes further contemplation concerning the applicability of this knowledge and its association to and with other knowledge. This may be associated with “abstract conceptualization” and “generalize” from other experiential leaning models.

Reconstruct: As the vortex of the spiral is reached, experiential learning reconstructs or allows for the synthesis of the subject matter content and its integration into our knowledge base. The Lewinian model calls this step “testing the implications of concepts in new situations” and the CSREES models refers to reconstruct as “apply what was learned to a similar or different situation or practice.” Once synthesis and integration have resulted, the spiral of the five R’s can be reused and additional knowledge processed and feedback provided and evaluations made to improve and develop the initial process.

Conclusions/Recommendations/Implications

There is a very real need to relate the concepts of capstone courses and experiential learning. Without this relationship the possibility exists of lessening the educational advantage students have by participating in capstone courses. Without an understanding of the experiential learning process, the surface of knowledge and learning are only scratched. The results of this study show that when learning activities and instructional techniques based upon the principles of experiential learning are applied in the capstone setting, the quality and benefits within these courses are improved.
Utilization of the Model for Integration of Experiential Learning into Capstone Courses (MIELCC) provides an actualization of the relationship between and among these educational principles. The Model provides one method of viewing these principles and incorporating them into a more holistic approach to education. Following the experiential learning process depicted in the five R’s allows for improvements in education by improving the application and conceptualization of knowledge.


References


