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Proceedings  
of  
The ISEC/BIFAD Working Seminar  
on International Education and Training:  
A Focus on Relevancy and Support Services

April 23-24, 1986  
Washington, D.C.

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on International Education and Training:  
A Focus on Relevancy and Support Services

April 23 - 24, 1986

Sponsored by

Training Committee  
International Science and Education Council

and

Human Capital Development Panel  
Joint Committee on Agricultural Research and Development  
Board for International Food and Agricultural Development

in cooperation with

National Association of State Universities  
and Land Grant Colleges  
Washington, D.C.

## Preface

Planning a seminar on "International Training" can be risky. The problems, frustrations and challenges of International Training seem to always be recurring. How do we plan a seminar without just rehashing the "same old things"? The ISEC Training Committee, with helpful comments and suggestions by many other interested individuals, identified three key ingredients necessary for a successful Working Seminar on International Education and Training:

1. Top level people to present challenging ideas.
2. Outstanding participants who would be willing to wrestle with these ideas.
3. Enough time in the program for the first two ingredients to react and stimulate some innovative thought and dialogue.

The Training Committee believes that the right mix occurred and thanks each of the presenters and participants for their part in helping make this working seminar a success. We trust that the ideas generated will be put to use in many different ways and places, benefiting the international students with whom we have contact, and ultimately helping to make our world just a little better.

These Proceedings of the seminar are offered to you as encouragement to keep the process moving.

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ISEC Training Committee and  
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## Increasing Education and Training Relevancy

This seminar has resulted in a number of carefully considered and comprehensively presented proposals which have addressed many of the over-arching issues. These complex issues are part of the gap between the United States and foreign students as measured by academic preparation and practical or professional background and are in the process of becoming more complicated. Two examples come to mind. First, former Jamaican Prime Minister, Michael Manley, in an April 14, 1986, address at California State Polytechnic University, Pomona, said the technical assistance mode frequently used today is a form of neo-colonialism. <sup>1/</sup> The concept of human capital development, especially as it related to Jamaica's needs, was an idea Mr. Manley enthusiastically endorsed. Fascinatingly, the two subject matter areas that intrigued him most were Agriculture and Hotel, Restaurant and Travel Management, disciplines where human capital resources are especially short in Jamaica. Second, as development specialists we should recognize that the technology gap which presently exists between U.S. agricultural scientists and Less Developed Country technology practitioners will probably continue to widen. Some in AID believe the comparative advantage in education

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<sup>1/</sup> Manley, Michael. Unpublished address. California State Polytechnic University, Pomona. April 14, 1986.

and training enjoyed by U.S. universities may well decline as U.S. agricultural technological advancement continues to outstrip scientific progress in the Third World. This situation is further complicated by current economic pressures in the U.S. agricultural industry which will tend to change both the method and content of agricultural instruction. Consequently, it would seem that U.S. agricultural curricula will move in the direction of either agribusiness/business management instruction or high-technology graduate research degrees.

We need to consider not only the professional maturity and capacity of the participant but also the fact that a spouse and family have been left behind. We need to learn the differences between adult education and standard university undergraduate education. Adult education/training methodologies are much more complicated than general university instruction acknowledges in practice. In short, those who teach foreign students need an increased awareness as to training methodology and cultural differences. A major need of foreign participants is for practical, applied or hands-on instruction. Such instruction will increase participant confidence and help change the attitude that educated people do not work with their hands, an attitude which is counter-productive to any developmental effort.

Our university programs feature technical specialization. This is especially true at the graduate level. Yet we need to recognize that our technically trained people are moved rather quickly into management roles. AID believes that almost every participant should have some exposure to project administration and management training. This perception seems quite correct. Further, management training needs to be expanded to include the concepts of leadership development if newly degreed professionals are to be more effective instruments of change. Management technology will, like agricultural technology, require adaptation to developing country conditions. Teacher development is an important feature that is frequently overlooked in this process. Yet if we are genuinely successful in our efforts to create successful Third World institutions we cannot assume technical graduate programs yield good teachers as a consistent, happy accident.

Finally, if we are to retain the support of the United States agricultural industry we need to be able to demonstrate with hard data the value of international agricultural education. We will need to remove the barriers for technology flow, which in reality is an exchange rather than simply a transfer of technology. This requires a change in our language of development. We should learn

more completely how to create change, and to recognize where and when change is warranted. Perhaps the greatest challenge faced today is to make education and training more relevant simultaneously for both foreign participants and domestic students. Much remains to be done. Yet some innovative things are being done as the following papers will indicate.

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## Introduction

The ISEC/BIFAD Working Seminar on International Education and Training: A Focus on Relevancy and Support Services was held on April 23 and 24, 1986 at NASUIGC headquarters in Washington, D.C. This seminar was jointly planned by the ISEC Training committee and the BIFAD/JCARD Human Capital Development Panel (HCDF).

The goal of the seminar was to make an expanding constituency of cooperating universities, organizations and agencies aware of the need for and ways of increasing the relevance and applicability of education and training programs for foreign students and expanding the related support services available to them on U.S. campuses.

This seminar was one step in a continuing series of programs and activities aimed at further improving our joint efforts to reach this goal. At the 1985 ISEC Training Conference, improving program relevance and related support services was identified as a continuing need. The BIFAD Strategy on International Education and Training identifies relevance and applicability as priority issues. The National Seminar on Participant Training held July 30, 1985 at NASUIGC developed recommendations in the areas of program relevance and support services. This seminar continues the focus on these concerns and is an initial step in the development of a more syste-

matic and coordinated process of national outreach and information dissemination on these key topics of international education and training.

The more specific objectives of the seminar were:

1. To reaffirm the need for and the possibilities of increasing the relevancy of academic degree programs and expanding the related support services made available to students from developing countries.
2. To identify and share a general strategy for and specific ways for increasing relevancy and related support services.
3. To prepare ACTION PLANS for further collaboration in the discovery and dissemination of strategies and ideas for increasing relevancy and related support services throughout the community of cooperating institutions and organizations.

The seminar was limited to forty invited participants from the universities, AID and USDA. The university representatives were selected by the various university consortia. They represented a range of agricultural disciplines and positions, including administrators, department heads and faculty advisors, as well as the

different regions of the country. Each participant brought an interest in and involvement with the design and implementation of international education and training programs for foreign agricultural students and, more specifically, improving these programs. Each has an interest in and will be involved with future outreach activities in cooperation with the regional consortia.

The program for the seminar moved from the general to the specific; from a reaffirmation of the need to general response strategies to specific examples of things that are being done on various campuses. There was a combination of brief presentations, full group discussions, small group discussions, synthesis and action planning for further outreach efforts. This workshop approach made the seminar informal, highly interactive and provocative.

The seminar began with two overview papers on the Need for and Possibilities of Increasing Program Relevance and Related Support Services presented by John Woods, Director of INTERPAKS, University of Illinois, and Manuel Pina, Head of Training and Communications at the International Potato Center. Don Dwyer, Executive Director of the Consortium for International Development, followed with a presentation on a General Strategy for Increasing Program Relevance and Related Support Services. A brief general discussion followed each

presentation. These papers and the discussion highlights are a part of this Proceedings.

Four specific examples of ongoing or recent efforts to bring increased relevance to foreign participant education and training were then presented. These examples of successful efforts were used to catalyze some innovative, creative thinking in small groups to identify new ideas and approaches, both tried and untried, to improve the relevance of international education and training programs. These four papers and ideas generated from the small group discussions are included in this Proceedings.

Meeting the goals of an "expanding constituency" requires a systematic effort at outreach and information sharing. Ways are being explored by which similar seminars and workshops might be presented on a regional basis in cooperation with some of the consortia. It is anticipated that the participants in this seminar will assist with any subsequent regional presentations. In addition, special sessions on this and related topics might be arranged in conjunction with the annual Title XII seminars and meetings of AUSUDIAP, ISEC, NASULGC, etc. Also the periodic newsletters of these and other organizations might be used more effectively to "spread the word." A series of "occasional papers" is yet another possibility. In order to explore these and other options for

assuring follow-up outreach, the final afternoon of the seminar was devoted to developing action plans for future activities.

The participants met together by consortia to identify and reach agreement on ways each of them could best disseminate the ideas coming from this national level seminar more widely throughout their respective institutions and organizations and help make the exchange of such information and ideas a more continuous and systematic process. Each consortium group would then take their proposed action plans back home to officials for further discussions and implementation. These Proceedings include the proposed action plans for each consortium group.

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Need for and General Strategy  
for Increasing Program Relevancy and  
Related Support Services

Papers and Discussion Highlights

NEED FOR AND POSSIBILITIES OF INCREASING PROGRAM RELEVANCE  
AND RELATED SUPPORT SERVICES

by

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A discussion paper focusing on the needs of international students in academic programs at American universities. This paper is presented from the overseas perspective as part of the ISEC/BIFAD Working Seminar on "International Education and Training: A Focus on Relevancy and Support Services," April 23-24, 1986, in Washington, D.C. The opinions expressed in this paper are those of the author and do not necessarily reflect the policies of his current employer, the University of Illinois at Urbana-Champaign, or previous employer, the United Nations Development Program.

NEED FOR AND POSSIBILITIES OF INCREASING PROGRAM RELEVANCE  
AND RELATED SUPPORT SERVICES

by

JOHN L. WOODS<sup>1</sup>

I. INTRODUCTION

This ISEC/BIFAD Working Seminar is focusing on a crucial issue facing American universities regarding students from overseas. The issue is, "How can American universities maintain academic excellence and at the same time make their degree programs more relevant for students from LDC's?" Some feel that excellence from the university's perspective and relevance from the overseas participant's viewpoint are not compatible. I feel that they can be compatible. However, there will have to be some adjustments made on the part of universities and the international students. Very basic to my belief is the fact that agriculture is now a global enterprise and, therefore, American universities must broaden their horizons beyond their campuses, states and the United States International programs in agriculture must be an integral element of the overall missions for our universities. As part of this, international students provide an excellent opportunity for American universities to become more global in their thinking and understanding.

My role in this seminar is to look at academic programs for international students from the overseas perspective, specifically as seen by the donors, governments, and the participants themselves. The reason for my being asked to do this is that during the past twenty years I have spent more than 15 years overseas involved in programs of USAID,

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foundations and the United Nations Development System. I have arranged for many participants to enter degree programs in the United States and other countries. I have also served on committees for students doing field research and helped negotiate internships for students to be involved in overseas projects. During the past twenty years, I have alternated between being on the staff at the University of Illinois and overseas, rejoining as Director of INTERPAKS in July 1985. I will, therefore, try to be sympathetic also to the university perspective in my comments.

To give a framework for my comments, I will concentrate on students from overseas who are in degree programs studying agriculture and are at the graduate level. In the case of University of Illinois, we have 193 international students enrolled in agriculture and veterinary medicine programs at the graduate level and 11 undergraduates.

## II. CHARACTERISTICS OF INTERNATIONAL STUDENTS

For the most part, degree programs at our universities are designed for American students. While definitely not a homogeneous group, the following lists in general terms some characteristics of international students that tend to be different than those of their American counterparts:

1. Age - international students tend to be older and have had previous professional work experience in agriculture.

2. Background - even though many of the international students have had professional work experience, a significant portion of them are from the urban areas and have not had during their youth exposure to farming. Their work experience has often been limited to Ministry of Agriculture or university organizations in the capital city with little on-farm contacts. Therefore, they may have difficulty relating to farmers (especially small farmers) needs, attitudes, and practices.
  
3. Previous Academic Training - more international students are receiving bachelors degrees from universities in their home countries. Many overseas universities follow the education system from Europe, their former colonial leaders. Therefore, the undergraduate work of our international students often has had a much different focus than that of an American agricultural undergraduate degree program. Many of the overseas universities do not include at the undergraduate level the "hands-on" practical training which is included in programs at American universities. They often do not specialize to the extent of our undergraduate programs. The style of teaching in LDCs tend to be the professor lecturing (or reading from the textbook) with little or no discussion, field work, laboratory exercises, or problem solving tasks. In many cases the "pop quiz" and other common practices in the American classroom will be new to them. Therefore, the international student may go through an adjustment period both in terms of the content focus and the pedagogical approach.

4. Sponsor's Requirements - many of the international students are sponsored by donor projects, international bank loans or their governments. In many cases, the sponsors have specified what the participant is expected to gain during their academic program in the United States. In most cases, the participant is also obligated to a period of time on a specific job following his or her studies in the U.S. International students often fail to inform their advisors about the requirements of their sponsors or home governments.
  
5. Career Goals - unlike their American counterparts, many international students know what jobs they will have upon completing their degrees. Their career evolution is generally farther advanced than their American counterparts because of their age and the lack of other human resources with similar academic training in their home country. Therefore, after returning home, they will tend move fairly quickly into senior management/administrative, teaching or research positions, for which they will have received little or no training from the American universities.
  
6. Home Agriculture Systems - many of the international students return to government agricultural development programs or universities which are different than what exists in the United States. First of all, in many countries much of the research focus is on Farming Systems Research (FSR). Most teachers in American universities are not familiar with FSR methodology. Many countries are also focusing on multi-cropping and integration of livestock programs which is

different than the specialized vertical focus of many of our academic programs. The organizational structure, bureaucratic procedures, resources available and support services of the home institutions for international students are generally much different than what exists in the United States. For example, agriculture extension in most countries is separated from research and organizationally much different than our Land-Grant University system. There is, however, some very innovative work being introduced in many countries in extension systems such as the Training and Visit (T&V), communication technology transfer, social marketing, and other approaches which have not been introduced in the United States. How many agricultural instructors on our campuses have known about FSR, T&V, or social marketing?

7. Development Perspective - since many of the international students have been involved in donor projects and administrative positions, their perspective of agriculture development tends to be much broader than their American student counterparts and, in many cases, their instructors. Many international students have been involved with meetings or training at the international agriculture research centers, donor agency conferences, agriculture planning conferences and other activities that look at the whole agricultural development system and where their specific field fits. This perspective is seldom included in courses designed for American students.

8. Communication - many of the international students use English as a second language. Even those who are from countries where English is a predominant language (such as India, Malaysia, Kenya) they have difficulties with the American version of the language, especially with the slang. This goes beyond the understanding of individual words. For example, international students from former French colonies have a significantly different perspective of agriculture development, role of universities, and other very basic conceptual issues which could easily lead to misunderstandings between the international student and his or her professors.

9. Expectations - international students who had not previously studied or traveled in the U.S. have many adjustments to make during the first 6-12 months of their studies. Some of the adjustments, such as to teaching style, are listed above. They also often have expectations of American farmers and agri-businesses being the utopia. Unfortunately, too often international students end up on a large American university campus spending much of their time associating with fellow students from their own country and almost never spend time with farmers or agri-businesses. Upon return home, their colleagues are most interested in learning more about American agriculture and not so much about what they did in the classroom.

The above are generalizations to point out that students from overseas are different from their American counterparts. Advisors and instructors should be aware of these differences and try to probe further in each specific case to find out as much as possible about the international

student, his/her background and desires. These differences should not be viewed as a problem, but instead be an opportunity to strengthen our academic programs for all students - American and international.

### III. NEEDS AND OPPORTUNITIES

Given the above characteristics of international students, this section focuses on describing some of the unique needs and opportunities for making academic programs and related support services more relevant:

1. Selection of University - while most people involved in this seminar have little say in determining which American university international students should attend, it can be the heart of the problem. Some agricultural subjects are very dependent upon climatic and geographic factors. For example, Minnesota would be a fairly poor place to send a participant who wanted to focus entirely on plant breeding of irrigated rice.
2. Selection of Advisors - the advisor is probably the most important element in the success or failure of international students. If at all possible, international students should be assigned to advisors who have had international exposure and experience in working with students from overseas. Without this understanding of the overseas context (not necessarily the student's home country) the advisor is in a difficult position for helping the international student.

3. Greater Participation in Designing the Degree Program - because of several factors described above related to age, previous professional experience, sponsorship requirements, and knowing the specific jobs to which they are returning, it is essential that international students have a greater involvement in the decision making process of what courses they should include in their degree programs. This may require a considerable amount of time initially on the part of the advisor and others to make sure the international student understands the possibilities available in the American academic system for designing a relevant degree program. International students are often reluctant to raise questions with their advisors and, therefore, miscommunications can easily occur. Because of their age and seniority at home, international students normally expect greater involvement in the decision making process and almost always welcome this opportunity.

4. Selection of Courses - many international students feel they are not given an opportunity to select courses that are most relevant to their needs. Since they are often returning to fairly senior level positions of management, teaching or research, they need a broad range of courses that will help them prepare not only in the technical areas but also as managers of research or extension programs, teachers, etc. Their technical training should also include opportunities for studying multi-cropping systems. Even in the social science areas, American degree programs tend to be fragmented such as restricting a student in agriculture education from taking courses in information

science (library school), agricultural communications, and management of public institutions. Advisors can perform a valuable role in helping international students select courses and adding flexibility to the traditional course packages for a degree.

5. Selection of Instructors - in the case where several instructors are involved in the same course, efforts should be made by the advisor to help the international student select one which has had an overseas exposure. Instructors should allow international students to adapt term papers, special projects and other course activities to fit the situation and needs of their home countries. International students have many tales about instructors who have said "your term paper must be on a subject I select which is relevant to this state because I do not know anything about your country!" This is devastating to an international student and is contrary to the concept of higher education.

6. Initial Counseling, Testing and Orientation - the Economic Institute located in Boulder, Colorado offers a service for international students in agricultural economics and a few other fields. Testing involves the English language, economic principles and analytical tools (i.e. statistics). The institute also provides counseling and training to participants in areas needed to bring them up to a proper standard for entering a degree program at an American university. I am not aware of similar programs in other agriculture disciplines. This is a crucial area that should be investigated by

groups such as ISEC or BIFAD. Each of us know of cases where international students failed because of undetected weaknesses in language or analytical skills, or the orientation was not done satisfactorily.

7. Practical work - a common complaint of many international students relates to the lack of practical or "hands-on" work as part of their degree programs. This becomes especially crucial where their undergraduate programs at home did not previously provide this practical exposure. In some cases, such as lab or greenhouse work, they complain that the practical experience is with the wrong crop or in areas not relevant to their home situation. Another difficulty related to this is hands-on experience with equipment similar to what they have at home. Our equipment may be too sophisticated for their home situation. The consequences of these factors can be very serious as they must introduce the practical aspects of their training into research or teaching programs at home. Therefore, ways must be found to either create special problems courses (maybe for noncredit) for them to participate in undergraduate courses, or summer internships, or other mechanisms to give them relevant hands-on experience.

8. Technical level - it is especially important for an international student to be exposed to a wide range of research methodology. For example, much of the research in LDCs is at the adaptive level. The methodology related to establishing farmer trials and other FSR research techniques is extremely important for them and is often not included in a Masters or Ph.D. program.
  
9. Information Seeking - a major problem in many countries is the lack of effective linkages with agricultural research going on outside the country, such as at the international agriculture research centers and American universities. International organizations have made major strides in the development of technical data bases such as the AGRIS system. International students (and probably Americans also) need to have some type of orientation or briefing on various types of information systems they can use in their home countries. They need also to be briefed on how to access international technical data bases, become familiar with appropriate technical journals, and learn how they can establish their own information storage and retrieval systems at home. This is a key activity which successful agricultural researchers in the United States have become skilled but often overlook passing on to their students. This should also include a short course on technical writing so that they can become effective communicators and better prepared to publish in their own country and abroad.

10. Thesis Research - donor agencies and participants have become increasingly concerned about the need for international students to do their thesis research at home or on a subject directly related to their home situation. In many cases, donor agencies are willing to pay for international students to spend time in their home country doing the research. Some are also willing to provide money for their primary advisor to spend time with the student. This could provide opportunities for the advisor and the international student to jointly publish some of the findings. Where ever possible, their thesis research should also be linked to the appropriate International Agricultural Research Centers (IARCs).

11. Off campus activities - many international students do not have an opportunity (or don't take the opportunity) to interact with the agricultural community that exists off of the university campus. This includes spending time with farmers, extension field agents, research laboratories such as JSDA, agri-business companies, etc. There are also opportunities for interaction with farming communities and service groups such as the Rotarians. These groups are very interested in learning more about agriculture and life in other countries. This activity is especially important now as many of our American universities are under pressure to decrease international activities including overseas technical assistance contracts, participant training, etc. International students could help in describing overseas agriculture systems and explain why it is important for American universities to link with overseas

institutions. This interaction would also help the international students to become more aware of the concerns that exist with the American agricultural community. This communication between international students and the U.S. agricultural community would almost certainly lead to a better understanding between countries that agriculture is a global enterprise.

12. Internships and Summer Experiences - as part of giving an international student broader exposure off campus and hands-on experience, more work needs to be done in finding internships or other experience opportunities between semesters and during the summer term. This could be spending time with a county extension agent, farmer, agri-business company, etc. The out-of-classroom experience for the international student is extremely important and something that often is overlooked because of the bias of the degree program for American students.

13. Institutional Review - how many of our universities have a mechanism to constantly review the relevance of academic programs for international students? It appears that academic programs have been left to the Associate Dean for Resident Instruction offices with little or no involvement by people in international agriculture programs. Last year, our INTERPAKS Associates decided to establish an Academic Committee represented by each collaborating department. This INTERPAKS Academic Committee meets periodically to: (a) review courses where there should be added an international dimension (to the

benefit of international and American students); (b) explore how there can be more flexibility for international students to take courses from other disciplines; (c) recommend new courses and/or degree programs especially relevant to international students (such as management of agricultural institutions); and (d) to explore the feasibility of an interdisciplinary Ph.D. program in agricultural knowledge systems.

This committee reports to the INTERPAKS Associates group, department heads, the associate deans for resident instruction and international agricultural programs. This type of mechanism is essential for raising the issue on our campuses which this seminar is addressing.

The above list is not intended to be complete nor do the items apply to every international student. These are drawn from observations and conversations with many international students and particularly discussions following their return home. It also reflects the concerns of organizations such as FAO, World Bank, LDC universities, etc.

#### IV. A CONCLUDING THOUGHT

Thanks largely to the excellent work done by American universities, most developing countries now have a considerable cadre of well trained personnel. American universities, donor agencies and international organizations must recognize that the situation today in many of these countries is much different than twenty years or so ago. There is a growing disenchantment in LDC's about projects that have large teams of expatriates spending long periods of time in-country. Technical assistance is being called by some a new form of colonialism. Many agriculturalists

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in LDC's have Ph.D.'s from American universities or other countries and resent expatriates coming in and talking down to them. Therefore, it is a time to change significantly the overall relationship between American universities and institutions in LDCs.

It is time to begin establishing "partnerships in technical cooperation." Agriculture is a global enterprise and there is growing interdependency between institutions throughout the world in areas of agricultural research, extension and utilization of technology. The United States no longer has a monopoly on agriculture technology. In fact, in some areas such as pesticide chemicals the majority of the technological breakthroughs have come from overseas. Other areas such as development of new seed varieties and disease research work there is an urgent need for the United States to draw upon the work being done overseas.

Unfortunately, this occurs at a time when there is a major movement in the U.S. towards establishing barriers in trade and technology flow. This could be disastrous for American agriculture and particularly for the American universities.

International students provide one opportunity for American universities to move forward with establishing partnerships in technical cooperation. An effort should be made to establish with international students the framework for long term institutional linkages with their home organizations. This is such an important issue that it may require special work by donors, universities and international governments. The UN Development System has developed a program called Technical Cooperation among Developing Countries (TCDC). The concept is to facilitate the interaction of expertise and information among developing countries. This

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is commonly referred to as the South-South dialogue. The TCDC program presents a real challenge to the United States and other industrialized countries who may be excluded from these networks. Therefore, we must find ways to encourage overseas alumni to continue interacting with our universities just as we do for our American students. If we are successful, there will be major contributions made to agriculture technology in general and to American farmers as well as those overseas.

International students provide both a challenge and an opportunity to American universities. They can bring to our programs an international dimension that is urgently needed. At the same time, we must be flexible and encourage more participation on their part in designing their academic programs. The ultimate payoff is going to reside in the quality of graduates, American and international, that our universities produce and the continued relationships that can be developed with them. I believe this type of seminar is important for moving forward in areas of making academic programs and the associated support services more relevant to international students. At the same time, there will be a significant payoff to our own university programs and to American agriculture.

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<sup>1</sup> The author is drawing upon the experience both in his current position as Director of the University of Illinois International Program for Agricultural Knowledge Systems (INTERPAKS) and his previous job in which he served for eleven years as Director, UNDP Asia and Pacific Program for Development Training and Communication Planning (DTCP) based in Bangkok, Thailand. The author also wants to give credit to two INTERPAKS associated graduate students who participated in several discussions in the formation of this paper. They are Mr. Asmatullah Khan, from Pakistan, and Mr. Mohamed Samy, from Egypt.

An Approach for  
Improving Relevancy of Training in Agriculture  
of Students from Developing Countries  
in U.S. Universities

Manuel Piña, Jr.\*

ISEC/BIFAD Seminar on  
Relevancy of Education and Training Programs for  
Foreign Students Studying Agriculture in  
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The IARCs and Degree-Related Training

Early on in the history of the international agriculture research centers (IARCs) of the Consultative Group on International Agricultural Research (CGIAR) it was recognized that a major pathway for responding to the needs of resource-poor farmers of the developing world was through collaborative research.

Collaborative research has been variously described by Sawyer (4), Swaminathan (5), and others as an effort that enhances the capability of national scientists to undertake research which is of particular concern to their farmers. At the same time it contributes to the stock of knowledge available to a wider scientific audience in diverse parts of the world.

In collaborative research, needs are assessed and research is conducted collaboratively between a national research group that deals with a particular commodity and the respective IARC. Various types of support, ranging from intellectual input to funds for research on a contract basis are provided by collaborating IARCs. It is considered an excellent mechanism for enabling national agricultural research systems (NARS) to not only perform basic research on priority problems but also, through applied research, play important roles in transferring improved technology.

However, at the same time, the IARCs have recognized that the success of collaborative research depends on the abilities of national scientists to perform research. IARCs believe that one way this capability can be developed is through experience gained in completing masters or doctoral thesis requirements;

during two or three years at universities in developed or developing countries. In visits to 18 developing countries, a study of training in the CGIAR conducted by the CGIAR's Technical Advisory Committee (TAC) points out that since the International Rice Research Institute began its training program in 1962, the IARCs have trained more than 18,000 persons. Of these, 2,483 (13.7%) were in the broad category of "higher/degree-related and postdoctoral" training, mostly from developing countries (1). As a part of this study, case studies of Bangladesh, Ecuador, Kenya, Senegal, Sri Lanka, and Tunisia showed that 184 (9.7%) of 1,898 persons had undergone degree-related training with support from the IARCS (6).

Despite this contribution, in the 24 countries visited, the most common concern encountered in interviews with over 1,500 national leaders and former IARC training program participants related to higher degree training. Demands for more higher degree training were widespread and substantial, with fear that IARCs were decreasing their support for this type of training (1).

The study points out that this fear is not unfounded. Currently, most Centers cannot afford to send significant numbers of national researchers to developed countries for higher degree training. The role the IARCs can play now, the study suggests, is to provide well-equipped opportunities for thesis research in developing country environments.

The study urges the IARCs to "do all they can, without prejudice to their research, to assist in the training of graduate students from developing countries for higher degrees" and to solicit funds for higher degree training and, where appropriate, appoint IARC scientists to supervise and guide the research (1).

### U.S. University Training

A major concern raised by leaders of NARS and scientists of IARCs, and evinced by the TAC study, is that students in U.S. universities undertake research projects that are of questionable relevance to the priority needs of the students' home countries. In some cases, where the subject matter has been relevant, the findings have not been necessarily transferrable because the conditions under which the research was conducted were so vastly different from the students' home countries.

Another concern is related to the delay or inability for recently graduated national scientists to embark upon research in their home countries. Many reasons are given for this; the following are those most often mentioned:

- time required for readaptation to the home country;
- funding for research is limited or not available;
- changes have occurred in government, national priorities, and directors;
- broader administrative, managerial and supervisory, responsibilities are thrust upon them; and
- experienced senior scientists are not available to assist with adapting newly acquired skills to bear on problems of an applied research nature.

These are not new concerns; they are mentioned repeatedly in studies of scientists from developing countries who received advanced degrees abroad. Inability to perform research is seldom given as a reason!

A frequently advanced solution to the problem is for students from developing countries to conduct all or a portion of their thesis research in their home countries. While this is happening in some cases, it appears to be more in collaboration with non U.S. universities, and often by

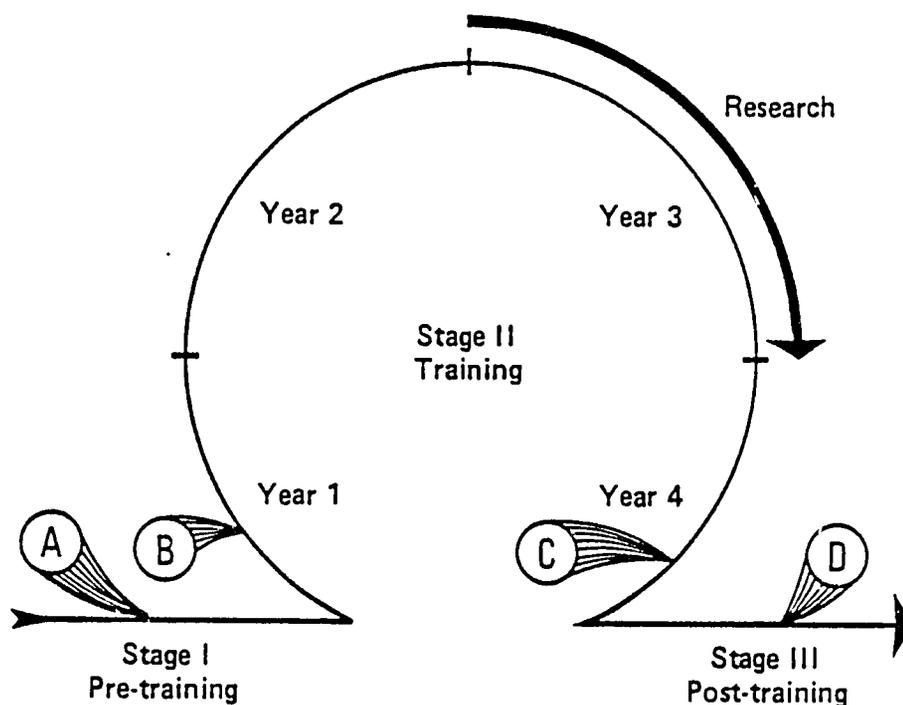
happenstance. A clearly articulated and comprehensive approach that effectively and systematically addresses the issues and problems stated above, and that can be applied at various locations in the developing world, is needed.

### Suggested Approach

An approach, that absorbs the major problems mentioned already -- Collaborative Research and Training Scheme -- is the suggested approach, depicted in Figure 1. This idea was developed in principle during a series of meetings held at the Centro Internacional de Agricultura Tropical, International Potato Center, and the International Agricultural and Food Program Office of Cook College, Rutgers University in 1984. Various members of these institutions contributed to its development (3). It is presented here with modifications incorporated by the author. The approach is built on the premise that there are three stages in the career development of most developing country scientists: 1) pre-training, time in the home country prior to the degree-training, 2) training, up to four years that are oftentimes required for completion of advanced degree studies, and 3) post-training, time following their returns to their home countries.

There should be joint efforts between the NARS, IARCs, and the U.S. universities during the three stages. Unfortunately, this occurs too infrequently. As a result, there is limited opportunity for each to learn about the needs, interests, and capabilities of the others. The Collaborative Research and Training Scheme proposed here is designed to provide these interactions in an orderly sequential fashion. It is comprised of four key interventions, each linked with a particular stage of career development.

Figure 1  
COLLABORATIVE RESEARCH AND TRAINING SCHEME



### INTERVENTIONS

- A During pre-training stage candidates for degree-related training are screened, selected, and prepared for placement in an appropriate graduate program in a U.S. university.
- B During training stage major advisor is assigned to plan course of study *and* select thesis research project.
- C During training stage and prior to graduation, students attend workshop with NARS and IARC scientists, U.S. university faculties, and donors to design research projects to be pursued by graduates upon return to home countries.
- D During post-training stage research project findings are evaluated on site by graduates, NARS and IARC scientists, U.S. university faculties, and donors.

Intervention A encompasses the pre-training stage which can take up to two years. At this time candidates are screened, selected, and prepared for placement in an appropriate graduate program in a U.S. university. Ideally, manpower development is a part of a larger national developmental strategy which includes research, technology transfer, and institution building. Although the ultimate selection of the candidates rests with the NARS, input from IARC scientists knowledgeable of the countries' needs, U.S. university faculties, and representatives of scholarship donors, may contribute significantly to strengthening national knowledge systems.

Intervention B is that point in the training stage where major academic advisors are assigned to plan courses of study and select thesis topics with the students. Unlike domestic students who may complete most of their course work before identifying thesis topics, students from developing countries must make their selections in the first semester in order to complete all requirements within a given time frame, determined by the length of the scholarship. Ideally, students will be guided by informed faculty who will counsel them to acquire knowledge and skills that can be applied to home country conditions.

The Collaborative Research and Training Scheme calls for the research to be conducted at an IARC, in the students' home countries, or in a third country where conditions are similar to the home country, and, in all cases, under the supervision and guidance of an IARC scientist in collaboration with the NARS and the faculty of the U.S. university. It requires that faculties and scientists establish good working relationships and that substantive changes be made in the length of time of scholarships. A minimum of four years is often required for

completion of a Ph.D. Universities may have to review their own graduate requirements to permit the research to be carried out away from the U.S. campuses and supervised by IARC scientists.

Intervention C is that point just before completion of the training stage where the graduating student is about to return to the home country. At this time, through research planning workshops involving the students, NARS, IARCs, university faculties, and scholarship donors, research proposals that complement on-going national research efforts are prepared. The intent is to prepare research projects and identify funding so that immediately upon returning to their home countries the graduates may begin conducting research. The research is expected to be of national priority and be supervised by NARS and IARC scientists, with support, as needed, from the U.S. university faculties. As a part of follow-up with their scholars, donors may contribute small amounts of operational funds, \$5,000 to \$10,000, to the NARS to facilitate that the research is conducted.

This scheme enables faculties of U.S. universities to develop a better understanding and sensitivity about their campus-based research and its relationship to the research underway in the developing world, be in a better position to design and participate in collaborative research projects with NARS and IARCs, and to be more receptive and of assistance to future students from developing countries.

Intervention D occurs in the post-training stage. While follow-up and formative evaluation is continually carried out by the NARS, IARCs, faculties, and donors, at Intervention D the research is evaluated summatively by the same entities. Final results or current state of the research is reviewed; suggested modifications are fed back into the scheme in order

that they are taken into consideration in activities related to Intervention C with other students.

According to the TAC study, the Second Review of the CGIAR in 1981 recognized the role the System plays not only in research but also in the transfer of improved technology. They recommended that greater emphasis be given to training activities having a potential multiplier effect, i.e., training of trainers and of research and extension leaders and managers (1). As such, a strong suggestion is made to U.S. universities to include academic training and practical experience in related topics, e.g., experiment station and personnel management, accounting, extension methodologies, on-farm research, project writing, and communications.

#### Conclusion and Recommendation

The Collaborative Research and Training Scheme approach presented attempts to obviate many of the traditional obstacles that students of agriculture from developing countries face at U.S. universities in conducting research that is relevant and of priority to their home countries and to permit that graduates pursue research endeavors immediately upon completing their studies. It brings together all the entities that can change the current situation -- students, NARS, IARCs, U.S. university faculties, and donors. No doubt the scheme requires refinement and many policies of the entities involved will have to be reviewed. However, in spite of many obstacles that may be encountered, because it is a dynamic approach where all interested parties can benefit, serious consideration to exploring ways of making it operational should be given.

An initial step is recommended. Presently, the linkages and processes necessary to make the Scheme functional do not exist. To develop the necessary relationships to accomplish

Intervention A would require at least two years, while degree-related studies could take up to four years. It could be as long as five or six years before firm steps could be taken to improve the relevancy of training. As such, it is recommended to accomplish Intervention C with students from developing countries who are about to complete degree-related training and whose research has relevance to selected commodities.

More specifically, a survey of U.S. agricultural universities would assist in identifying students, faculties, and universities whose research has relevance to food commodities addressed by the CGIAR. Subsequently, a number of selected students, their academic advisors, and appropriate personnel from the NARS, IARCs, and potential donors could participate in a research planning workshop. The objective of the workshop would be to develop research projects that the students may pursue upon return to their home countries, as described in the post-training stage. In this manner, as follow-up and formative evaluation takes place, students and relevant research topics are being selected, i.e., activities related to Interventions A and B are taking place. In this way, initial steps leading to the institutionalization of a Collaborative Research and Training Scheme are taken in a collaborative spirit, an attitude that is fundamental to the success of the suggested approach.

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Note: In preparing this report, valuable suggestions were received from training officers of ICARDA, ILRAD, and IRRI, and training officers and directors of CIP.

ACHIEVING RELEVANT EDUCATION IN AGRICULTURE  
FOR STUDENTS FROM DEVELOPING NATIONS<sup>1</sup>

Don D. Dwyer  
Executive Director  
Consortium for International Development

A major contribution of the U.S. Agency for International Development (AID) is the education of students from developing countries. In the view of many, education of these students may be the most lasting benefit U.S. agricultural development programs have to offer. However, both AID and the universities have not been fully effective in providing an education that best serves the student and his country.

In 1984-85, students from lesser-developed countries (LDCs) being sponsored by USAID approached 15,000. The important value of this education to world agricultural development cannot be over-emphasized. And the acceptance of these students by U.S. universities should imply responsibility to offer an education relevant to their needs. Despite the growing demand for international education and training over the past decade, and notably since passage by the U.S. Congress of the Title XII legislation, the educational process for LDC students has not improved as it should. The amount and quality of "technology being transferred" through formal education are well below the potential of U.S. universities and will remain so

until educators admit that the educational needs of LDC students are very different from their U.S. counterparts.

### International Students Are Different

To say LDC students are different is both trite and obvious. If we believe this statement, however, and still do not develop more innovative means to deal with these differences, then we fail the most basic and important component of our U.S. international mission.

The more obvious ways in which typical international students differ from their American counterparts are that they are: Older; more experienced in the profession in which they seek education; more motivated; under more pressure to succeed; and screened and selected from a large pool of qualified candidates. While these are very advantageous to the educational process, for the most part they are ignored as benefits. An international student's success in our universities is often hampered by language inadequacies, cultural and religious differences, dietary restrictions, extended family separations, and nonfamiliarity with the U.S. university system.

One of the important problems students from developing nations must overcome to successfully complete U.S. university graduate or undergraduate degrees is the lack of relevance to their home country in the curriculum. Foreign students are stuffed like sausages with curricula designed for U.S. students and U.S. agricultural problems with a "like it or leave it" abandon. Failure

of foreign students under these conditions can be easily attributed by a university advisor or teacher to either the student's inability to handle the "advanced technical nature" of the material or to the student's inadequate background education. Frequently, the problems can be traced to a combination of language difficulties, inadequate or too rapid acculturation, and the student's inability to rationalize his coursework within the context of his home-country situation. It is now common in agricultural production classes at U.S. land-grant universities with even modest international involvement to have 20 percent of the class comprised of LDC students. And, this proportion is growing with the decline in U.S. students enrolling in agriculture. As professors, we should be embarrassed to face these LDC students without attempting to make U.S. agricultural production technology more relevant to them and their conditions at home. Because LDC students as a whole tend not to complain, we think we are doing a better job teaching than we are.

#### Teachers with LDC Experience Are Needed

It is difficult for a teacher to make U.S. agricultural technology pertinent to a developing-country student when the teacher has no LDC experience. The first item on the agenda for international universities is to provide the opportunity and encourage professors (especially young ones) to gain experience in LDCs. International experience for these teachers is in the best interests of the

university and its domestic students. The experience brings a more global perspective to the professor's work. The internationally involved U.S. university must move toward requiring all its teachers in agricultural production courses to have some experience in a developing-country culture.

#### Improving International Student Education

Better technology transfer from one culture to another will require that U.S. universities give serious attention to the specific needs of LDC students and to fully understanding their problems. There are at least three possible ways of accomplishing this.

Overcoming Language Problems. Although non-English speaking students may have achieved the minimum proficiency required by intensive English institutes or the TOEFL examination, these students cannot easily cope with the U.S. lecture-style format which is, especially in agricultural courses, accompanied by slang, idioms, jargon, and an air of casualness. This format is well accepted by U.S. students, but is a jungle for others. International students cannot readily incorporate "nonformal English" into their thought patterns, nor do they distinguish important from unimportant points. Not until the second or third term have the necessary adjustments and adaptations been made by the LDC student to accommodate the system. By then, the student may be on probation or saddled with a record well below potential. Also, the student may

have expended much of his scholarship time during the initial process, without ever getting into professional courses. Helping the LDC student overcome these language barriers quickly and efficiently will require some creative solutions on the part of U.S. universities.

One way to deal with language adjustment problems would be to develop an orientation course for first-term foreign students and teach it in a manner which recognizes language constraints and the tremendous changes international students face adapting to the American culture. This course would permit time for their confidence to build, perhaps by providing a "lecture and examination" training experience and allowing students from various countries to share their experiences. An oral report by each student about his home country would be a good way to help him gain experience expressing himself in English. A recording of the presentation would permit each student to listen to himself. This format would also serve to educate U.S. instructors about their students and their various countries. The experience would probably make the instructor far more appreciative of the problems being encountered by first-term LDC students and increase the teacher's awareness of communication frailties in technology transfer.

Two other possible methods to help the international student overcome language problems are to provide cassette tapes of all

class lectures so that the student can replay the lectures and to require each LDC student to visit his instructors early in the term. The second alternative would help the student feel more comfortable seeking help as needed. LDC students are usually reluctant to ask questions in class or even to talk the teacher.

Relevant Curricula for LDC Students. In a study conducted at Washington State University,<sup>2</sup> 47 international student advisors were interviewed and asked to identify the priority needs of participant trainees. Of 23 items prioritized, the following top 9 needs were ranked in this order:

1. Adequacy of student's undergraduate training.
2. Availability of country-specific publications for student use.
3. Availability of opportunities to conduct research relevant to the home country.
4. Opportunities for students to apply principles and theories.
5. Participant student's involvement with American students.
6. Commitment of university resources adequate to support student's academic program.
7. Assistance available to student in adapting scientific methodologies to home situation.
8. Opportunities for student to gain practical training outside the classroom.
9. Program relevancy to student's future professional situation.

While the participant trainees were not asked to rank their educational needs as they saw them, the advisors' rankings identify the need for relevancy in the international student's education.

To improve the value of U.S. curricula for LDC students, certain specialized courses must be developed which have clear applicability to LDC situations. These courses are in addition to the traditional "International Agriculture" and "International Trade" courses which most universities provide. For example, in the field of range science, two keystone courses, "Rangeland Improvement" and "Range Livestock Production and Management," are important to the LDC student studying agriculture, since most rangelands in developing countries need improvement and increased production of livestock from those lands is critical to the long-term livelihood of the people. What is less apparent is the enormous amount of information given in the classes that is not applicable to the central rangelands of countries like Somalia or Western Sudan. Agricultural courses are famous for their practical "how to do it" approach, which has worked well for the U.S. situation. This approach is less useful when applied to LDCs. "How to" improve rangelands in Sudan must be presented within the context of communal grazing in a nomadic, subsistence-level, pastoral system, rather than a system guided by the profit motive and well-developed marketing systems.

To overcome the handicap foreign students have in adapting U.S. technology to the LDC environment, a second course should be developed for subject-matter areas that are application oriented. For example, during the term that "Range Livestock Production and Management" (U.S. style) is taught, teach a second course, "Range Livestock Production and Management in Developing Nations," placing the principles and concepts in the perspective of LDCs. One main benefit of this "course pairing" would be to provide LDC students the opportunity for better mental application of the subject matter. This challenges the professor to teach the "how to do it" part, especially if he has not had any experience in LDCs. The "add on" LDC-style course can prove popular with U.S. students, which should lead to a special kind of knowledge transfer from LDC students to U.S. students. Future international experts now disguised as U.S. students will benefit from this exchange.

It is not unreasonable to expect land-grant universities to develop a specialized international production-agriculture degree option at the B.S. level. This option should stress agricultural production and extension in developing nations, include courses about countries and regions of the enrolled LDC students, and emphasize management and administration of agricultural programs in developing nations.

Graduate Degree Research in the Home Country. To suggest that research for the graduate-level, U.S. degree be completed in the candidate's home country is not new. The innovation and creativity of this approach are not in the suggestion, but in the accomplishment. Conducting research required for the graduate degree in the home country has been tried, but the record of success is meager. The LDC institutional framework needed to adequately support such a venture rarely exists; and failure of a candidate to meet requirements for the degree will make the university department reluctant to try again with another candidate.

Even candidates attached directly to an AID-funded project have difficulty accomplishing research for a graduate degree in their home country, often because the project is winding down or may have ended by the time the candidate has completed the U.S. coursework. With early planning and later cooperation between AID and the university, this problem can be solved.

USAID and the universities should work collaboratively to provide funding and logistical support to complete the graduate program without relying heavily on the LDC government, as is often the case. This can be accomplished by identifying potential thesis research topics early and including them directly in the request for proposal for a given project; guidance and financial support would then be available. Graduate programs that include research in the

candidate's home country, travel expenses for the U.S. university advisor, and logistical and financial support for the research have benefits that outweigh the small rise in USAID's costs. The thesis research itself should contribute to USAID's overall mission in the country. The data and recommendations coming from the research would help in solving LDC problems. Just as important, the U.S. university advisor will gain experience in the LDC, which should surely benefit other foreign students, broaden the perspective of courses taught, and make that professor's contribution to future efforts in other LDCs more useful.

### Conclusions

It is probably not too surprising that an educator would conclude that the solution to the world food crisis is more and better education. It is plausible that U.S. technological achievements in agricultural production require the resolution of the U.S. universities to make knowledge transfer more efficient and relevant to the LDC environment, culture, tradition, and social institutions. Few agricultural courses now do that. To make impressive progress toward the educational propositions I have suggested would not require enormous costs or wholesale modification of existing curricula. Attention to the following recommendations will help achieve this progress:

1. A degree option should be developed for international students which realistically emphasizes the application of principles and

concepts to the LDC situation. This would recognize such truths as communal grazing lands, nonmarket values, nomadic and trans-humant pastoralism, and social, political, and cultural environments and conditions--all of these within a small farm and individual family setting.

2. The international agricultural production option should include special courses, such as an orientation course for first-term LDC students. To regular U.S.-style courses, such as crop production, livestock production, poultry production, and agricultural economics, add "tag-a-long" courses like "Livestock Production in Developing Nations." These tag-a-along courses would put the scientific management and production principles of the main course into the LDC context by, for example, relating range-animal breeding practices to nomadic pastoralism, where the marketing of high-quality animals plays a small role in breeding decisions.
3. The teaching faculty should be expected to participate in international (LDC) experiences. Whether or not a particular teacher is heavily involved in international projects is less important than whether that teacher has (at a minimum) visited an LDC to learn about that LDCs' agricultural production. Even one short-term experience of travel and participation as an observer on a university project would make that individual a more effective

teacher. Following such an experience, no responsible teacher could feel comfortable describing only U.S.-style livestock production practices in a class with students from Sahelian Africa. This world view would certainly benefit American students as well.

4. LDC graduate students, especially those sponsored by Title XII projects, should conduct theses research in their home countries. This approach serves three valuable purposes:
  - a. The student has an opportunity to learn how to conduct fruitful research under the constraints of his home country.
  - b. The home country itself benefits more, since it can take greater advantage of the research so conducted.
  - c. The results of the graduate student's research provide the larger project, which is supporting the student, the benefit of specific and important contributions to its broader objectives.

That contribution (the thesis) is delivered, complete with binding and loaded with valuable advice and input, from a quite inexpensive (to the project at least) group of consultants (the student's committee).

5. A growing number of U.S. students are expressing an interest in doing graduate work in international agriculture. Title XII research activities have been an important stimulus for this

interest. These students are anxious to conduct research for their theses in an LDC. By providing this opportunity for U.S. students, we can build a cadre of young, well-trained, vigorous professionals with language capabilities that would be available to subsequent international projects. These people will be better suited to cope with the difficulties associated with long-term overseas assignments. Young professionals usually have less experience than is considered ideal, so they may need a bit more backstopping, support, and advice from short-term consultants. Experience is teaching us that we need to look more to the young, developing professionals.

In making education of LDC students more relevant, we must remember that the most important things U.S. universities have to offer are our methods--systematic inquiry, organizational skills, administration; our prioritization of values and effort; and our ability to conceptualize what's important. Without these, implementing sound and lasting agricultural practices are quite difficult and conducting research impossible. Universities have the potential to be the greatest resource the U.S. can offer to improve the quality of life for impoverished people, because the universities have the opportunity and the responsibility to educate the people who can make a difference.

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### Discussion Highlights

Following the three presentations on the need for and general strategy for increasing program relevancy and related support services, comments on these topics were received from the entire group. Some of the highlights of this discussion are summarized here.

An important point to keep in mind is that students from the developing countries are not a homogeneous group. Some return home into a well-functioning system with developed institutions and a cadre of peers; others return home and find themselves more isolated and functioning in newly formed institutions. There is a difference in the level of sophistication of scientific person-power available in different countries and, thus, a different career pattern for returning students. In some situations, a graduate may spend some years as a researcher, analyst, extension worker, etc. In others, s/he may soon move into management and leadership positions which require different skills. In order to make education and training programs more relevant, procrustean thinking must be discarded. Relevancy necessitates the designing of a plan of study which responds to the needs of the individual and the particular situation s/he will be returning to. There is no one solution for all developing country students.

The needs of the university/institution also cannot be ignored. The university has legal mandates and requirements which must be met. The sponsoring agency or project has overall program objectives to fulfill. Enhancing the relevancy of an individual's program must be done within the context of the institutional resources and commitments.

One approach for meeting both the individual and institutional needs which was discussed was "tag-a-long" courses (as mentioned in Dwyer's paper). These courses are made a part of the plan of study in addition to the basic university requirements. They can be designed to provide more fundamental and basic training that can be applied within various types of agriculture. They could be an evening seminar during the semester on a specific topic to complement and supplement a regular university course, such as applied econometrics. They could be a special summer program of hands-on, practical experience such as the technical short courses offered by USDA, universities and others.

The discussion then moved on to looking at specific examples of ways to increase program relevancy.

Specific Examples of Ways  
to Increase Program Relevance and  
Related Support Services  
and  
Summary of Small Group Discussion

## INTEGRATION OF EDUCATION AND TRAINING

### IN RESPONSE TO IDENTIFIED NEEDS

H. F. Massey

It is my understanding that this paper is intended to discuss how needed training which is not a part of the usual academic curricula can be incorporated in the programs of academic participants. I was requested to use the Indonesian Western Universities Agricultural Education (WUAE) project for which the University of Kentucky is the USAID funded contractor as a basis for the discussion.

#### Background

Over the years, those of us who have been concerned in one way or another with the graduate training in agriculture for LDC students have felt and expressed dissatisfaction. Many or perhaps most of us here today have already participated in seminars, workshops, or informal discussions. Norman Borlaug and many other distinguished international agriculturists have suggested changes in training of LDC students.

In our formal and informal discussions, we have enumerated faults, suggested changes, and recounted anecdotes. We have often tried to conceptualize an ideal training program. The components of this ideal training program usually include, in addition to the normal academic program, the following:

1. Practical agricultural training because the student probably does not have a farm background;
2. Broader training than normal for the student's specialty because scientific manpower at home will be scarce, and professional activity outside of the student's specialty will be expected;
3. Training in administration and management because the student will likely move into an administrative position in the near future;
4. Training in planning professional activities to achieve developmental goals because the student will not have counsel or direction from an established system that young American professionals receive;
5. Better training in the selection of statistical, analytical, or other professional techniques because the student will not have specialists available to help;
6. Training in the maintenance and repair of equipment because such assistance may not be available;
7. and so on.

It is obvious however that only limited addition to graduate programs can be made without lengthening the period of study which is already considered too long.

However, these concerns have resulted in changes. Most graduate advisors, directors, and deans are now willing to adapt the graduate program to the student's needs if these needs are understood and if it can be done without "weakening" the program. The USDA, universities, international centers, professional organizations and the private sector offer many courses or seminars aimed at the special needs of those who work in LDC's.

Drastic adaption of graduate training to the needs of LDC students has not taken place, however. This may be partly due to inertia and partly due to disagreement that it is needed, but it is probably mostly due to the fact that the changes would be

expensive both in manpower and other costs. In addition, however, it is not at all clear that LDC students desire the changes. They usually resist changes and additions that lengthen or complicate the already long and difficult period of graduate study.

A study of the participants trained during 1957-66 for the faculty of the Bogor Agricultural University (I.P.B.) in Indonesia was conducted in 1977. The objectives were to determine returned participants' perceptions of needs for extra academic training, and to determine the nature of these perceived needs and obtain suggestions as to how they might be met.

Thirty-five of the 200 participants trained under the University of Kentucky IPB project were interviewed. Interviews were structured and required about one hour to complete.

Selected data from the study are given in Tables 1, 2, 3 and 4.

The results of this study indicated:

1. Former participants were generally pleased with their graduate training.
2. There was little that they would omit from graduate training.
3. They clearly see the need for broader research training.
4. They see the need for training in Project Development and Management.
5. In the other areas questioned students perceived needs related to their personal situation and personal philosophy.
6. Sizable number of interviewees indicated that self-study materials would be used.

Table 1. How Returned Participants Spend Their Time.

Activity	Respondees (% of total)	Percentage of Time	
		Average	Range
Teaching	100	40	15-90
Research	91	14	5-30
Extension	70	8	2-30
Leadership	97	36	5-70
Other	15	3	1-40

Table 2. Returned Participants' Evaluation of How They Employed Their Time While in Graduate Study in the U.S.

Area	% of Total Response		
	Too Little	About Right	Too Much
Courses:			
Basic Science	20	80	0
Subject Matter	11	86	3
Related	23	71	3
Research Techniques	43	49	0
Research Work	3	77	6
Thesis Preparation	3	66	9
Cultural Activities	37	60	0
Gen. Ag. Background	43	54	0

Note: Indicates general satisfaction with graduate program. However, 43% reported that too little time was spent on research techniques. Their comments usually suggested that research training was not broad enough.

Table 3. Importance of Various Training Components and Evaluation of Training Received.

	Average Score	Some Training Received %	Training Received Was Not Adequate % 1/
Administration and Management	2.5	14	100
Agricultural Development Process	3.2	31	73
Communications	2.9	34	42
Knowledge Diffusion Process	2.4	14	80
Teaching Methodology	3.3	20	43
Research Methodology	4.2	91	41
Project Development and Management	4.0	20	71
Use of Field Equipment	2.2	34	58
Care of Laboratory Equip:	3.1	57	65

1/ Of those receiving, comparisons within third column are misleading.

- Notes: 1. Scores 0 = not needed, 5 = greatly needed.  
 2. Tried to get need rated in terms of absolute need as opposed to need for additional training.

Table 4. Distribution of Scores of Importance for Three Training Components.

Score	Research Methodology %	Administration and Management %	Project Devel. and Management %
0 (Not needed)	3	29	3
1	0	6	3
2	3	3	3
3	23	29	23
4	9	20	17
5 (Greatly needed)	63	14	51

## Western Universities Agricultural Education Project

This project is a Title XII project, designed in the collaborative mode, by AID, the Indonesian Department of Higher Education, and the University of Kentucky (UKY). The major focus of the project is on strengthening College of Agriculture programs in teaching, research, and public service, and the clientele comprise eleven public institutions of higher education — ten on Sumatra and one on Kalimantan.

The original project paper called for the selection and sending for graduate training in the U.S. of 71 Indonesian lecturers from among the eleven participating institutions. Of these, 53 were to be at the M.S. level and 18 at the Ph.D. level. In addition to the overseas graduate training there is provision for graduate training in Indonesia, for English language training in Indonesia and for technical short courses in Indonesia. The original project paper did not designate specific types of extra-academic training for academic participants but it was clear that the project was intended to result in improved university administration, enhanced research and public service programs and further the conversion of the Indonesian universities to the credit-hour system, all of which require that the faculty be as broadly trained as possible.

In 1985 the project paper was revised extending the project for four years, essentially doubling the U.S. based participant

training program, and emphasizing even more various types of extra-academic training for the academic participants. The project paper and contract amendment specifically call for:

1. Training of trainers seminars.
2. Research seminars.
3. Post degree professional visits.
4. Professional meetings.
5. Special courses appropriate to the needs of each participant.

To date the project has provided training programs for all interested and available project participants in the following areas:

1. Teaching Methodology.
2. Curriculum and Course Development.
3. Understanding the Credit-Hour System.
4. Use of Personal Computers.

Special courses presently being planned or considered include:

1. Agricultural Research Priorities in Indonesia.
2. Management of Agricultural Research in Indonesia.
3. Repeat of Credit-Hour System Course.
4. University Administration (will be adaptation of course previously given to University Rectors and Vice Rectors).
5. Farming Systems Research.
6. Project Design and Management.
7. Training of Trainers.

In addition we will make use of many courses offered by other universities and organizations.

### General Observations and Comments

Selection of Topics - We have only organized special courses after careful polling of participants to determine interest. This is

based on the assumption that individuals taking the course must perceive a need for it. In this respect our most successful short course has been the credit-hour system course. Indonesian universities are in the process of converting to what they call the credit-hour system. By this term they mean something very close to the U.S. higher education system with respect to curricula structure and flexibility, course organization and presentation, student admissions and record keeping procedures and student testing and evaluation. All of the Indonesian faculty members who are in Graduate School in the U.S. know that they will be faced with adapting to this system. They also know that because they have attended a U.S. university they will be expected to know how the credit-hour system works in the U.S. Thus the participants are eager to learn whatever we can offer them on this subject. We expect to hold this course annually so that almost all participants will have the opportunity of taking it.

Selection of Participants - It follows from the above that the most important criteria for selection is self-selection. We have also insisted on approval and hoped for enthusiastic support from the participant's major professor. Ideally the decision for the participant to take a special course should be made jointly. Most courses have an enrollment limit and we normally give preference to those who are closest to their projected departure dates.

Costs have not generally been a major consideration in the special short courses we have put together for our WUAE participants. Costs for participants have been quite modest and most of our participants are located at the University of Kentucky. These costs are expected to rise in the future because our participants are becoming more dispersed, we expect to bring in more outside instructors, and we expect to make more use of short courses and seminars organized by others. Costs have been a factor in selection of individuals for special training programs organized by others. Transportation, per diem and tuition often cost \$1000-1500 per week. Our project does not have a specific dollar limit for each participant but direct training costs were originally budgeted at about \$12,000 per participant year. Thus we have had to be somewhat conservative. The more expensive courses have been used only when there seemed to be a real need that could not otherwise be met. In the second phase of the project a specific budget for this type of training was requested and a part of our request was granted.

Management of Seminars and Short Courses - Perhaps the most difficult problem in management is selection of a time that will be suitable for an appreciable number of people. In the WUAE project this was relatively simple when almost all of our participants were attending the University of Kentucky. We have used the first week of January, spring break, and the week before

classes start in August. These dates are not universally free. Participants in programs on campuses using quarter systems have almost no breaks in common with those on the semester systems. In addition each system has many schedule variations. The period between Christmas and New Year's Day is generally free but it is difficult to secure faculty and our campus facilities are not available. There is essentially no practical time at which all participants can be available. We will probably plan our special courses at the time available to most participants and try to send the others to similar courses given at a time they are free.

Our regular project staff is almost fully occupied with the routine management of the project. We have little time to put into the thoughtful planning and careful logistical arrangements which are essential for successful short courses or seminars. We have used two methods of overcoming this problem. It has been useful to engage the services of a faculty member (in one case a retired faculty member) to do most of the planning, lining up lecturers, etc. The Community Education Department in University Extension has been used to organize the course and arrange for rooms, transportation, lecturer fees, teaching materials, etc.

One very useful technique we have been able to use is to involve several of the potential participants in the design of the short course or seminar. This has been possible because a large number of our participants are on the campus. It has been useful

in improving the relevance of the material presented and also in creating more thoughtful discussion during the short course or seminar. We have seriously considered giving the participants primary responsibility for designing and organizing the course. I think that this would work fine but have hesitated because of the time it would require of the participants.

Each short course or seminar is formally evaluated by the participants. This is especially useful if it is to be presented again but is also of some use in planning other programs.

Refreshments during breaks tend to keep participants together and enhance opportunities for informal discussion. For longer short courses a dinner or similar event seems to meet a need on the part of the participants for acknowledging the importance of the short course. It can also provide a formal setting for awarding of the certificates which should be considered as an essential part of any short course or seminar.

Integration of Academic and Extra Academic Training - Integration of these two parts of the training program will probably remain an unfulfilled ideal. For integration to occur, more information than is normally the case would have to be available to the major professor about the participant's home country, the project's objectives, and extra academic training opportunities.

Occasionally it happens but it is the exception. More realistically one can expect to meld the academic training and the

extra academic training, which is largely intended to facilitate the use of the academic training, in such a way that neither is shortchanged. This requires careful and sometimes delicate coordination among the participant, the major professor, and the participant coordinator.

In-Country Research and Cooperative Degrees  
The Moroccan Experience  
James C. Sentz\*

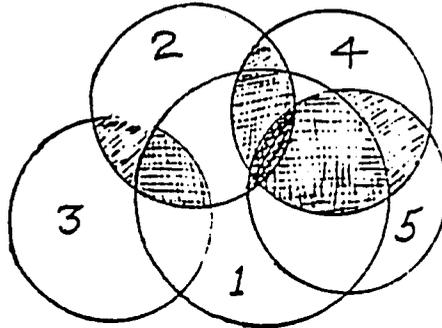
Introduction

Our Agricultural Universities and the U.S. Department of Agriculture have been partners in participant training for over 20 years. The rapid advance of agricultural technology and the need to provide efficient and effective assistance for agricultural development make it imperative that we continue to look at what we do and how we do it. Development of human resources, and the institutions responsible for developing human resources, are critical to the successful development of national agricultural economies. Our success in training will be judged by the impact which it has on a country's agricultural economy. In contrast to the unilateral training program in which we provide all of the inputs on our U.S. campus, I will discuss collaborative training in which the research is conducted in the home country and the degree may in fact be granted by a host country institution.

Conceptual Spheres of Training

Let me conceptualize briefly the spheres of influence to which a participant is exposed in training. The following diagram illustrates the inter-relationship of these spheres and suggests the impact expected from including home country experience as part of the training process.

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1. The participant is represented here by sphere one.
2. Academic & professional. Sphere two represents the immediate academic community including the advisor, department, faculty and other students in the U.S. university.
3. U.S. Research Experience. Sphere three represents the participant's orientation to research and its "state of the art" application as practiced in the United States.
4. Home Country Research. Upon returning home, the participant is expected to pursue research within that country's environment with resources and equipment which are most often rather alien in relation to the U.S. experience.
5. Home Country Program. It is necessary for participants to establish functional programs at home; a task in which they will have little if any experience.

These illustrate the complex inter-relationships the participant must solve if he is to become a productive worker in the home country.

### In-Country Research Issues

We may readily agree in-country research would be a good procedure to follow in our degree programs, but it is not easily implemented and we have not been very successful for two primary reasons. The first is a deterring provincialism within our universities to utilize a flexible model for the delivery of our degree programs. Second is the logistics to provide academic support and scientific infrastructure in the home country.

By provincialism I refer to our reluctance to accept modifications in the programs we have developed for graduate degrees. At the University of Minnesota the requirements for an MS degree are rather explicit, including required courses, a minimum number of credits, and completion of a thesis or special papers. Because the thesis is more subjective and it is the students first experience in independent research, it usually requires a high degree of tutorial guidance. Primarily for this reason we generally do not encourage MS research in the home country. For the doctoral degree our requirements include residence, qualifying examinations, and the submission and defense of original research. Toward this goal the student develops a program which becomes a contract with the

graduate school. There are very few limitations imposed at the university level. Consequently our system has considerable flexibility and resilience which can be utilized in a wide spectrum of academic and scholarly activities. In my experience similar flexibility and opportunities for innovation exist in the doctoral programs of other universities. However, we often exercise a rigid control over this process which may restrict the creativity and originality that we expect the participant to develop.

We need to define and assure provision for certain elements which are essential to our advance degree programs. One primary element is integrity of the research, and a second is provision for the professor-student interaction which is particularly critical to the dissertation training process. Various mechanisms can be utilized to provide these when degree research is done in the home country. On the host country side the availability of scientific infrastructure, equipment and support must be provided if the participant is to function as a trained scientist. Participants should be trained to function effectively at the level provided within the home country and/or assisted through the training process to acquire additional equipment and support necessary to do productive and scholarly work. Unless we are realistic about the goals of our training, our objectives will be misguided. The logistics of movement by either the student or advisor between the U.S. institution and the host country can be addressed directly.

### The Minnesota-Morocco Program

The University of Minnesota is involved in a major collaborative doctoral degree program with Morocco's emerging institution of higher learning in agriculture, the Institute Agronomique et Veterinaire-Hassan II (IAV), sponsored by U.S. AID. Some of you are cooperating with us in the participant training phase of this project. This is an institutional development program and therefore our objectives and the resources available to us go beyond simply training to a degree. Specifically our objectives are to train a critical number of the Moroccan IAV faculty at the doctoral level and establish them in an effective and functional working mode as part of the Institution. We are also training a limited number of IAV faculty to the MS degree in the U.S. and providing one year MS level graduate study for a large number of IAV students.

In the Minnesota program IAV faculty members are identified for training. They are accepted into a U.S. doctoral program and fulfill all the requirements for the degree through the qualifying examination with one modification: they receive training in technology and research methodology in their field and particularly in preparation for their dissertation, and then return to Morocco for their research and dissertation. In conclusion they defend their research before an international committee in Morocco for the IAV doctorate degree.

The research is done under guidance of the U.S. academic advisor who is provided three to four trips to Morocco during the course of the research and dissertation writing to consult and advise the student. Day to day counseling on general scientific matters related to the research is available through a "resident coordinator" who is a member of the University of Minnesota resident faculty at IAV. This coordinator does not replace the academic advisor, but provides a liaison between the participant and the advisor. The in-depth training during U.S. residence, advisor visits, and the resident coordinator are provisions to provide for integrity of the research and the professor-student interaction which would normally take place on the U.S. campus.

Toward the goal of 135 we now have 100 participants entered in this program: forty have completed their qualifying examinations and are pursuing their research and dissertation in Morocco; fifteen have completed and defended their dissertation before an international committee for the IAV doctorate; and seven have completed U.S. degrees only. One-half of these have been admitted to some 20 universities other than Minnesota.

An additional component of our project provides short term (one to three months) post-doctoral study in the U.S. for participants following completion of the IAV doctorate. This study term is to provide opportunities for journal publication of the disser-

tation, interaction with scientists working in the same specialization, study of departmental organization and other administrative management, IAV curriculum development, proposals for collaborative studies with U.S. scientists and similar academic and professional activities relevant to a participants career development and IAV. Although participants are exposed to many of these benefits during their initial U.S. training, the press of their graduate studies during minimum time does not allow for adequate exposure and concentration on these important activities. Participants may, and most do, use this travel opportunity to fulfill the final requirements for the PhD at their U.S. university. Direct costs associated with completion of the PhD are the full responsibility of the participant since U.S. AID sponsorship of the degree program is completed with the award of the IAV doctorate.

#### Problems Encountered and Lessons Learned

Some problems encountered and lessons we have learned follow.

1. Formal scientific training can be separated from preparation of the dissertation with some modification of our standard domestic program.
2. Dissertation research, with proper planning and training in the U.S., can be accomplished abroad with the logistical system which has been put in place.
3. Writing of the dissertation is more difficult in the home country environment than in the U.S. because

- a) the academic environment is not well established, and
  - b) the participant is subject to local cultural pressures and interruptions.
4. Participants must become more innovative, creative and resourceful when assistance is not immediately available.
  5. The dissertation defense is a major event for the participant and the Agronomic Institute.

#### Costs and Benefits

We need to be aware of the costs for cooperative training, as well as the benefits accruing to it, particularly at this time when U.S.AID is concerned with increasing training demands and budgets. There are very few real costs or necessary elements to the host country for the benefits returned, and the ratio is very favorable to them for doing dissertation research in-country. Three major costs for the host country are:

1. Investment in state-of-the-art equipment, research supplies and library resources
2. Release time for participants to do research and writing; a trade-off for time away
3. An institutional commitment if the degree is to be granted in-country.

The primary benefits to the host country are:

1. Generation of information on issues relevant to local agricultural problems

2. Support the establishment of ongoing research programs and integrated agricultural development when done in sufficient numbers and scope
3. Contributes to acquisition of equipment essential to research local problems
4. Significant reduction in study time abroad for scholars and their disorientation from home country problems
5. Increased retention of trained scientists.

There are few real costs to the U.S. university community and most of these can be developed into benefits through innovative management:

1. Longer time required to complete degree
2. No technical assistance return in kind to university (advisor) due to participants return home upon achieving technical proficiency
3. Requires advisor time away from campus to supervise research in-country.

Benefits to the U.S. university include:

1. Full funding of scholar for dissertation research; acceptance of the scholar is not dependent upon having university resources to support the participant.
2. Provides substantive international experience to faculty advisors enhancing their research and teaching capacities.
3. Contributes to development of international professional linkages at the both the individual and institutional levels.

There are several trade-offs to the sponsor in the allocation of support to the host country, the U.S. university and the participant when the research and dissertation are done in the home country. Savings in direct training costs resulting from an 18 to 24 month reduction in the U.S. training phase is estimated at \$17,600 to \$22,000. This is offset by research support (\$10,000) and advisor visits (4 at \$4,350) totaling \$27,400. These costs can be justified in part as other technical assistance and institutional support since they contribute directly to Morocco's agricultural research and institutional development. Following this rationale there is a major reduction in participant training costs resulting from the decrease in U.S. program time. In addition the sponsor is achieving much greater return to the host country for the program support expended.

#### Keys to Success

These are issues and elements in the modification of our domestic degree programs to accommodate the research, dissertation and degree award in the home country. What are the keys to success in such a collaborative program? In our Moroccan experience we believe the following have been critical to this program.

1. The Moroccan leaders have a clear vision of the goal and a deep commitment to that goal.
2. The IAV faculty have generally accepted this commitment.

3. There is one U.S. center for program coordination and logistical support.
4. The University of Minnesota provides intensive management in support of one-to-one relationships required at the individual, departmental and university levels.

Perhaps we can identify others. However, this program has led to the development of strong institutional linkages between IAV and the University of Minnesota, and other participating institutions. These dynamic relationships not only result from, but contribute to ongoing scientific and agricultural advances which will impact upon the Moroccan development process.

We need to identify the keys for success and implement those elements necessary to support in-country dissertations and degrees in other participant training programs. To initiate our discussions today on this topic I suggest that through BIFAD we establish, as an implementation mechanism, primary linkages between our universities and LDCs, or with LDC institutions in the broad sense, to sharpen the focus, develop the framework for essential support, and provide program continuity for this process.

NETWORKING FOR PROFESSIONAL INTEGRATION  
"Including Lessons from Tanzania  
Training for Rural Development Project"

By

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INTRODUCTION

The days of the "Old Boy Network" may be passed, or at least more carefully talked about. But the powerful force that a system of professional interactions, contacts and linkages can become is currently being examined by many groups with differing goals. Simply put-networking is developing a communication system. But not only the "Good Ole Boys" were networking, the communication equipment world was creating technological networks. First, came a telephone system that was the envy of the world. This was followed by telecommunications, satellite and computer networks. Then organizations of women and minorities picked up the idea and tried to consciously create the network conditions needed for fuller participation in the professional world.

So what relevance or applicability does the idea of networking have to the world of International Education and Training?

My Tanzanian and U.S. experience leads me to think understanding

and creating networks is important to those of us managing field projects in developing countries and to those of us preparing others to create development conditions around the world. As one of my Tanzanian colleagues often stated, frequently it is "Technical Know-Who" rather than "Technical Know-How" that is important to getting things done and understanding how things "really" work. Without the "Technical Know-Who" an agricultural professional may never be able to practice the "Technical Know-How."

This introduction to networking is most likely unnecessary to those of you coming from a somewhat informal but powerful U.S. agricultural network that does occasionally allow in a woman or two. (Particularly if she got home economics training and grew up on a farm.)

In this short paper I will attempt to draw some lessons from the USAID financed Training for Rural Development Project, where I served the last six years. I believe that attention to developing strong and wide human communication linkages from the inception of the Project played a major role in successful implementation of what appears to be an effort with reasonable chance for sustainability.

## TRAINING FOR RURAL DEVELOPMENT PROJECT

The Training for Rural Development Program in Tanzania was a six year \$11.5 million USAID financed effort. It was designed to increase agricultural production and quality of life through developing a model rural development training systems and improving rural development managerial performance at district, regional and national levels.

We were focusing on five high production potential regions of the country (Iringa, Mbeya, Ruvuma, Rukwa and Arusha Regions), but also attempting to strengthen the agricultural research and extension human resource availability, as well as senior level managerial performance.

A variety of training delivery modes were utilized including:

- ° U.S. long term degree training for 70 participants. This training for many was supplemented with annual Tanzanian seminars, short course training in management and/or training methodology when appropriate and in some cases M.S. and PhD research conducted incountry.

- U.S. technical and managerial short course training (approximately 40 participants, including one senior level executive management training program for 24 senior Tanzanian policy-makers and managers).
- U.S. conducted Training of Trainers Short Courses (approximately 90 participants).
- Incountry Training of Trainers Short Courses (5 short courses for approximately 125 participants).
- U.S. and incountry training in audio-visual techniques and micro-computer utilization.
- Village training conducted by the five Training for Rural Development Centers (TRDCs) for more than 100 villages and more than 5000 village leaders and farmers.
- On the job training and consultation with National, Regional and District Rural Development managers and TRD managers and implementors.

From the outset we were convinced that a large and strong interpersonal communication network was going to be important to project implementation. Some of the early problems we identified collaboratively with the Tanzanian Government were (a) poor planning and coordination among the ministries and sectors involved in rural development, (b) poor human resource utilization upon completion of further studies, (c) inadequate teamwork within and across organizations involved in rural development and (d) lack of a clear strategy for evolving rural and agricultural training in the country.

Also it was important for us as outsiders to understand upfront how existing incountry human communication systems and networks operated and to determine how any of these might assist in establishing new ones for the Project, as well as be able to use the existing ones.

Unlike some newly starting development assistance projects, we did assume that there was a past - that there were development efforts in Tanzania before we arrived. Those effort beginning in the sixties included the Community Development work involving the University of Missouri and others, the West Virginia Agricultural

Manpower Development Project, the Masai Range Management Project, the Arusha Regional Integrated Development Project, the Agricultural Education and Extension Project, as well as efforts by other U.S. based organizations, including missionaries.

All these efforts had resulted in a fairly large base of U.S. trained degree holders in agriculture and rural development fields. Also we found some U.S. trained ministers, principal secretaries, senior advisors and regional development directors trained in management, adult education and political science. These gave an excellent leadership pool with which to work. While some of them knew each other, many did not. Through the course of the U.S. Executive Management and incountry management development courses these people got better acquainted professionally. Because of the interactive nature of the short course sessions, they left training with considerably more consensus about goals for evolving rural development in their country. They also had the opportunity during training and through the network that developed over time, to share and compare successes and failures from previous development project work. TRD benefitted greatly from their common experience and their growing ability as a group to impact rural development policy and practices in the country.

An early TRD activity was to enroll a large number of Tanzanian academics (70 over the life of the project) in U.S. universities largely in agriculture related fields. Since this was to be such a large human resource input to the system, we wanted to do everything we could to foster professional connections among them while in the U.S., as well as obtaining high quality education. We also wanted to assure some communication mechanisms between the Project on the ground in Tanzania and the people funded by the Project studying in the U.S. Through the coordination of USDA's International Training Division we set up annual Tanzanian seminars during Christmas break. We brought all U.S. Tanzanian participants together and sent at least one Tanzanian full time incountry manager or trainer to update the U.S. group and assist with problem solving. The group also had a common training experience focused on goals of improving management of the rural development system, similar to, but less indepth, than those going on concurrently in Tanzania.

Through this "networking" mechanism Tanzanian professionals got better acquainted, shared experiences about their U.S. university training, discussed the research problems they were involved with and generated ideas and plans for working more closely

together in some cases upon return home. We in the field got updates on how people were doing and could do a better job of planning for their utilization upon return.

We also encouraged TRD Long-Term participants to enroll in management and training methodology short courses similar to those their incountry colleagues were experiencing. This resulted in returning long-term participants and those incountry having a common language, and a common set of concepts and skills around which they could work back home.

The Project had an incountry research component, which unfortunately was not as heavily utilized as we had hoped, partially due to the early closing of TRD and the shut-down of USAID in Tanzania. This allowed participants to return to Tanzania to collect research data and also provided financing for their academic advisors to travel to Tanzania for supervisory visitation if required or requested by the advisor to gain a better picture of the incountry situation. One PhD candidate took maximum advantage of the opportunity choosing the TRD village training as his thesis focus. In addition to Project support he had also obtained a grant from the World Food Institute where he later

presented his results. His incountry data collection put him in contact with TRD village trainers and managers, and his close work incountry with his home insitution built several additional pieces of the network to everyone's benefit.

#### UNDERSTANDING INCOUNTRY NETWORK SYSTEMS

From the beginning we started from the idea of observing and watching how human communication systems functioned and tried to build what we did on the indigenous base. In Tanzania natural networks get formed around family and ethnic groups, age mates, secondary school linkages and previous on the job associations. By the end of the project we had learned (both American and Tanzanian staff) about what resources and political power could be mobilized by key TRD actors through their own set of linkages and contacts outside those associated directly with TRD. In this way the communication system was bigger and broader than the 300 Tanzanians directly involved in management and implementation.

The large number of Tanzanians working directly toward TRD goals, plus their contacts and linkages (fortunately most believed so strongly in what we were doing, they were willing to use political capital with outside contacts), resulting in TRD

gaining considerable political and resource acquisition power. Given USAID's close down-sustaining the Project required much heavier Tanzanian funding inputs, as well as time in working out arrangements with possible sources of foreign exchange for program institutionalization. In addition, to Project institutionalization, other results were impacted by networking and strong communication systems: (a) greater influence over personnel placements (b) joint planning across sectors and organizations (c) cross sharing of scarce resources such as computers, videosystems, books, journals and training materials (d) cross-institutional re-design of curricula at several institutions and improvement in short course design and delivery and (e) greater competency as international consultants on part of several Project participators and ability to recommend others in their networks for such opportunities.

In summary, the TRD building of a system of professional interactions, contacts and linkages ultimately put more pieces of the rural development system originally considered to be outside the control of individual TRD actors, more within their control. It also fostered their ability to use each other as consultants, professional colleagues and political allies.

We also think that the U.S. long term academic training fostered a broader range of relationships between Tanzanians and Americans that we hope (even with the difficulties of half-way-round the world communication) will continue to foster some measure of idea exchange, shared materials, consulting relationships and professional growth on both sides.

FOSTERING OPPORTUNITIES FOR U.S. BASED DEVELOPING COUNTRY STUDENTS TO IMPROVE PROFESSIONAL INTEGRATION THROUGH NETWORKS

Just as we women felt a little out of the "Old Boy Networks, our developing country colleagues are also fighting an uphill battle with respect to international professional integration. Even though you may not be implementing an incountry Project like TRD, there are things we can do within our roles in international education and training to help assure increased implementation ability on the part of our participants, if we can help them learn more about creating the type of human communication linkages I have described.

An excellent resource for ideas is the National Association for Foreign Student Affairs publication, Professional Integration: A Guide for Students from the Developing World; edited by Mary

Ann G. Hood and Kevin J. Schieffer. The chapter by Michael J. Moravcsik; "The Scientist or Scholar Interacts: Communication and Interpersonal Relations in the Developing Countries"; is particularly useful reading.

Moravcsik suggests that it is in the self-interest of the developing country and developing country scientist to strengthen its linkages with the international scientific and scholarly community. He also suggests there are two dimensions to strengthening professional linkages: one dimension can be worked on during U.S. educational experiences, the other must be done back home. The Tanzanian case has already suggested some of the things that can be fostered incountry and there are additional things that the individual can do back home to build professional networks.

While in the U.S. the developing country student can be encouraged and assisted to formally analyze the communication system and problems as they work at home, including interaction patterns (how do these connections and linkages really work). He can then also be helped to look at not only how he will carry out his program of agricultural research, teaching or extension, but

particularly if he will also have managerial responsibilities focus on how he will create the circumstances under which he can operate as a professional. Concretely, what will he/she have to do?

Moravcsik suggests that developing country students be given practical experiences while in training such as assisting in publishing professional journals, organizing conferences, managing professional societies, arranging for outside visitors to the department, managing the flow of preprints to a research group in a department, set up exhibits, order equipment from outside suppliers, deal with the management of local machine shops.

All students should be encouraged to build up their ties within the professional community while in the U.S. and to systematize names, addresses, phone numbers before returning home.

Even though I believe it is in our long-run self interest as Americans to maintain professional developing country contacts, it is not always easy. On our side we can also systematize our names and addresses of former students. With computer networks to help us, lack of communication may more often be lack of orga-

nization on our part. I plan to establish a computer mailing list of key Tanzanian colleagues and develop a short newsletter to which individuals can respond if they have further interest in a particular item. My personal computer is compatible with those purchased by the project so we can exchange disks. My video equipment is also compatible with theirs. Now all I need is that "getting organized".

A professional Tanzania colleague who wanted to assure our keeping in touch professionally asked me to remain on the editorial board for their agricultural extension papers publication. He and I both knew that this would keep a more formal linkage than "let's stay in touch." This idea is one that could be shared with returning developing country professionals to keep us busy Americans involved with them.

#### CONCLUSION

Much of the world operates on "Technical Know-Who" and human communication systems. To build, use and successfully operate broader networks in international agricultural education and training, we may not need a lot of fancy technology. It helps to have a working phone and a computer, but caring about creating

and keeping professional linkages, assisting others to get the "know-how" to do it and a little time and organization can go a long way.

As Moravcsik states "Isolation is one of the most deadly enemies of progress in developing countries." We can probably all do more to communicate with our developing country colleagues and assist them in developing techniques internationally and at home that will increase their professional integration, satisfaction and contribution to their country's development.

**EMERGING TECHNOLOGIES FOR DISTANCE LEARNING**  
**a presentation to the**  
**ISEC/BIFAD Working Seminar on International Education and Training**

**April 23-24, 1986**

**by**  
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It's probably not quite accurate to talk about "emerging" technologies for distance learning, because those technologies that are being discussed, planned for, and used, have been around now for several years. What is happening is that a combination of increased demand and lower costs are making commonplace what was theoretical, or experimental in the past. Let me briefly review the range of technologies that can be applied to distance learning - beginning from the beginning.

Print materials: These have traditionally formed the backbone for correspondence education programs, and in many parts of the world are only means to provide course materials at a distance. The logistics problems of distribution to students, the back-and-forth of testing and correcting by a tutorial staff, can cause difficulties. A correspondence course based on print materials will typically have a printed text and modularized lesson guides or work sheets. Print materials allow the students flexibility in study habits, since they decide when and where to use the materials, and how fast to proceed.

Radio: For many years, radio was used as a complement to distance education's printed materials. A radio lecture on the subject topic was provided regularly as a course proceeded, and students needed to arrange their schedules accordingly. Today, educational radio has progressed strikingly in the way it is incorporating instructional design, so that a number of successful programs at the primary level in developing countries have demonstrated that radio can carry the entire teaching load. This requires careful division of the curriculum into learning modules that build upon each other, reinforce material learned, anticipate material to be learned, and that are aired daily.

Again, internationally, radio classes have been used in support of in-service teacher training, to provide school equivalency certificates, and to convene learning groups of adults with a facilitator. Nonformal education programs transmit basic health agricultural, nutrition or other information for community development.

Two-way or multi-point radio, where students, as well as a tutor, are equipped with a send/receive radio, allow for personalized tutorials in situations where the distance is a major barrier to education. Australia pioneered in this approach, and currently such institutions as the University of the South Pacific (sometimes using a satellite to relay signals) provide tutorial meetings for students scattered across vast ocean distances.

Audiocassettes: The major requirement for receiving education by radio - the need to listen at a fixed time - can be eased by the use of audiotapes. With certain givens - that there not be unmanageable amounts of recorded material, that a distribution system be in place, that availability of tapes be assured, that playback machines/electricity/batteries not be a problem - the taped educational material can be a useful medium. It allows the students to play back the material whenever and however many times they wish. Tapes can deal with material inappropriate for open broadcast, or they can be actual broadcast material, as in the case of a Guatemalan program where subsequent to the broadcast, a facilitator met with groups of farmers and, using tapes of the broadcast, stimulated discussion of the subject matter.

Television: Some of the earliest hopes for new distance teaching technologies rested on television. There was a time when television programs were expected to bring uniform excellence in a dynamic, stimulating way, into

the classroom. It has taken many years, however, for this promise to be realized, and for a time, educational television seemed to be doomed to failure. Today, television education has evolved from the 6 a.m. talking-head lectures to complex telecourses for credit, leading to a degree, offered by scores of community colleges throughout the U.S. The costs of developing these telecourses are high, and as a consequence, many of the courses are developed jointly through a consortium mechanism. The International University Consortium, located within the University of Maryland, is an example of this.

Many of the other new technologies use the television monitor as their delivery mechanism. Videotape for example, is an easily handled visual medium. With a videotape player it is easy to operate; production costs are lower than for film, the student/viewer can control the learning schedule, material can be easily edited on the master as new information becomes available, and tapes are easily duplicated. Videotape costs, however, are relatively high.

Institutions such as the Association for Media-Based Continuing Education for Engineers (AMCEE) use videotape courses to keep working professionals up-to-date in their fields.

The same AMCEE is a heavy user of satellite-delivered teleconferenced classes. Teleconferencing, in which the visual conference/class, is transmitted from a satellite uplink to multiple downlink sites and onto television screens, can be a one-way or two-way activity. The most frequent mode for two-way teleconferencing is a visual/sound receive, and audio-only send. The AMCEE offers courses of from 4 to fifteen sessions, on such subjects as the Elements of Metallurgy to Time Management.

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Project Share, out of INTELSAT, recently transmitted via satellite a teleconference from the Children's Hospital in Miami to medical staff in a number of Latin American countries.

Another technology that requires the use of a television screen, is slow scan television. This is the transmission of still pictures, using a television camera and (usually) telephone signals, built up bit by bit on the screen. This is a slow process - taking up to 80 seconds to put together an image - but it is a relatively inexpensive means to transmit visuals as compared to a video teleconference, and is very useful when charts, graphs, slides, or other visual support is essential. Early users of this technology were medical programs that transmitted diagnostic information.

Videodiscs also require a connection to a television screen. In recent years the videodisc has become better known as the dropping price of the players makes them more accessible to consumers. The videodisc can store film, slides and photographs, sound, and print, in vast amounts. The most popular version of the videodisc is that played by a laser-read optical mechanism. The information on a videodisc is computer-coded within the program, and provides random access rather than the serial access of a videotape or audiotape. Besides having much greater storage capacity and the ability to instantly display any point on the disc, videodiscs have the added advantage of a computer interface which provides a learner with the sort of interactive instruction developed for computer-assisted learning tied into the tremendous information carrying power of the disc. This has proved very appealing to serious training programs where there is need for self-paced

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learning of unchanging basic material. The primary drawback of this technology are the development costs of the instructional material. Although production costs are coming down, not long ago they were around \$2000 per minute. As in any duplicated medium, however, the costs per unit come down the more units are produced. Therefore, the audience for a videodisc course would have to be very large, either on a one-time, or multiple-use basis to begin to pay for the master development costs.

Videotex uses primarily telephone lines and a television monitor to provide an interactive information service. Primary uses to date have been to access specialized databases such as for business information. Since to save (download) the information, a computer link is necessary, this may not be any more useful for educational purposes than the usual computer-modem-database access procedure, unless the information were specially tailored for the students.

The microcomputer has effectively established itself in the U.S. as the technology most likely to be used in an on-site educational situation. Computer-assisted instruction has been continually evolving over the years, and is well-developed. For the distance learner, the potential tie-ins to videotapes, videodiscs, compact discs (for storage of large amounts of information), and commercial networks for database access, electronic mail, and computer conferencing, enhance the medium many times.

The cost to develop a good self-paced computer-assisted course, however, is high. A lot of skill in programming, together with content expertise, must ensure that the program leads the student through a carefully sequenced learning plan to achieve curriculum goals.

This brief overview of some of the available technologies for distance education leads us to the question of what to use for what purpose. Is there a "best" way to teach at a distance? Is there a "best" medium for a particular kind of education? Some institutions in this country are exclusively distance education providers and they use a variety of the available media. For example, to provide what they call "Alternate Delivery Courses," the Rio Salado Community College in Phoenix, Arizona, includes

- television courses
- cable television courses
- radio courses
- audio conferencing
- audiocassette courses
- correspondence courses
- videocassette courses

What we see from all this is that the communications media are inseparable from the distance learning process as it is evolving today. As in any communications planning exercise, the selection of the medium or media to be used for an educational effort must depend on a number of factors, including the appropriateness of the medium to the content, the access of the audience to the medium, the cost of developing the content for the medium, the need to revise the content from time to time, the reproduction costs of the medium, the delivery mechanisms required by the medium, the recurring costs of providing the information via the selected medium, and so on.

Obviously, the issue of the recipient audience's access to the medium is crucial. It is unlikely that videodisc technology is widespread enough to be accessible even to the majority of U.S. students at this time, but a large institution such as IBM, with sophisticated learning centers available for staff training, may well be a suitable user of the technology.

Again, if the course content requires visuals in order to illustrate the material, a purely audio medium is insufficient, and needs to be complemented with a visual medium.

Careful consideration must be given also to the educational goals of the distance education effort. Is the point to up-grade professional skills or knowledge in a single area? Is it to make a welder out of a non-welder? Is it to enrich a person's cultural understanding of art or music? Is it to turn the learner into a professional over several years study? The investment on the part of the educational institution in the development of the course curricula must be based on expected learning returns. Developing a computer program to upgrade extension workers' skills that could be delivered by audiocassette is not cost-effective. Wilbur Schramm, in his book, Big Media, Little Media, back in 1977, pointed out that comparative studies had shown that students did not learn more or better from television than from radio. This, then, indicates that a larger investment in the hardware does not necessarily reflect greater results. It is, as you well know, the investment in the software - the learning material itself - that yields the final results.

How do all these considerations relate to increasing the relevancy of education and training programs for international participants? Where do the technologies enter into the picture - or do they? Should they? One of the issues to be discussed here is how to keep international participants who have received specialized training in this country up-to-date in their subject fields once they have returned to their countries, and are removed from the usual sources of current research or innovative applications in these fields. This is, indeed, a serious issue, worthy of thoughtful consideration.

Any planning process should begin with an audience survey to determine needs. What professional contact do your returned participants hope to maintain? Are there sufficient numbers of participants in a given field to make an educational outreach effort worthwhile? If each participant has a separate area of specialization, the most effective means of maintaining contact with the field might simply be a subscription to the preeminent journal in that field.

Perhaps the point is not to maintain and up-grade specialized knowledge, but to share generalized non-topic-specific information. In this case, the issue of how many people constitute a viable group is more easily resolved and a networking kind of newsletter might suffice.

Let us consider a variation of one kind of distance education outreach effort that you're all familiar with - the audiocassette/information packages developed by George Atkins. Would it be appropriate to develop a package of information that would include a technical up-date sheet on some particular aspect of agricultural development, an audiotape lecture by the academic

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expert in this area, and some sort of feedback sheet? Could a group of participating universities each take responsibility for production of one package a year? Could an organization such as BIFAD undertake the coordination of such an effort?

Is it important to have a higher and more immediate level of involvement on the part of the returned participants? Is the kind of computer conference that was experimented with among research institutions last year through IDRC, a useful model? Are the costs of accessing a computer network, and the technological problems from, say, Senegal, too daunting, or would a monthly transmission of truly relevant up-to-the-minute information be worth those costs? And who would pay them? Who would take responsibility for maintaining the computer conference? Experience has shown that members of such a conference need to be prodded regularly to participate. Is it better to start with a low-key, low-cost medium of outreach which can slowly be improved and expanded to other media, rather than starting with a flashy, high technology whose care and feeding become too burdensome to maintain? Can a consortium of universities, as they develop new course curricula, factor-in the potential for sharing these courses with returned participants? This might then be the genesis for a series of self-study programs that could be offered both on and off-campus, using printed study guides and a combination or a selection of other media such as audio- or videocassettes. Is the responsibility for this shared development and distribution something that an organization can afford? Do the CGIAR institutions produce the kinds of documentation in their areas of expertise that could be adapted to outreach packages? Could a joint effort on the part of CGIAR and an organization such as this produce the kind of information package that would be useful?

These are a lot of questions with no immediate answers. What I would like to leave with you is the importance of finding out from your intended audience what it is they need and want, and then designing your support, rather than picking and developing a product because they ought to want it.

### Summary of Small Group Discussions

These presentations of four examples of successful efforts to improve program relevancy and related support services were used to catalyze some innovative and creative thinking during the small group discussions. Participants were divided into four groups, with each group having representation from the various university consortia, AID and USDA. Using the presentations as background, these small groups explored new ideas and approaches, both tried and untried, for increasing the relevance and applicability of education and training programs for foreign students. These ideas and strategies are:

1. Tailor program to correct deficiencies in student's background and to meet student's need.
2. Include special opportunities to prepare student for future nonresearch responsibilities; i.e. project management, leadership development, administration, etc.
3. Make student's thesis research relevant to home country situation; i.e. do research in home country or comparable environment or, if done in U.S., include home country data in thesis research.

4. Conduct thesis research at International Agricultural Research Centers. Use their research staff for supervision of thesis research.
5. If not possible to do research in home country, provide funding in degree program for student and professor to travel to student's home country to collect data and re-evaluate research plan with local colleagues. In addition to improving relevancy of research, this would simultaneously help develop a cadre of faculty with international experience.
6. Careful analysis by advising professor of student's past training and experience including discussions with student and pre-testing when appropriate.
7. Participation in field days, farm visits, extension programs, etc.
8. USAID and USDA include in all participant program plans one of their management short courses.
9. Office of International Programs at University provide series of short courses or seminars on relevant topics such as teaching methodology.

10. Encourage students to take greater role in planning their programs.
11. Periodically bring together foreign students on campus to discuss their concerns and issues.
12. More thorough needs assessment of situation and position student will be going back to upon completion of training.
13. Help student develop better understanding of formal and informal network systems.
14. Broaden students experience with and knowledge of U.S. agriculture system; for example, internships, hands-on experience, special problem courses.
15. Conduct periodic follow-up training in home country, such as technical workshops and research conferences.
16. Training in grant writing and developing research proposals.
17. Provide orientation for faculty advisors.
18. Improve faculty expertise re: developing countries. Provide sabbatical opportunities with sister institutions in developing countries. Use faculty on design and evaluation teams.

19. Bring faculty advisors on campus together to discuss problems and opportunities for foreign students.
20. Avoid educational "narrowing" and specialization in graduate programs.
21. Include maximum amount of hands-on experience in degree program.
22. Use non-thesis M.S. degree programs when appropriate.
23. Universities develop courses on management/administration of agricultural institutions. Use interdisciplinary committees to provide guidance in the development and presentation of such courses.
24. Training of spouses.
25. Through orientation programs, encourage student to explore supplementary training opportunities.
26. A checklist of ideas for advisors.
27. Have advocate on campus who encourages attention to foreign students' special needs and provides information on ways to meet them.
28. Organize two-way faculty and student exchanges, such as collaborative research, workshops and teaching.

29. Use input from students as well as faculty to define course objectives, content, methods, etc.
30. Organize seminars using international faculty as guest speakers.
31. Provide a special problems course through which students develop curriculum and courses, including all teaching materials, which they will conduct when they return home.

Action Plans Developed by  
University Consortia

## Action Plans Developed by University Consortia

One of the major objectives for the seminar was to identify and reach agreement on ways to best disseminate the ideas coming from this national level seminar more widely throughout the respective institutions and organizations and make the exchange of such information and ideas a more continuous and systematic process. This kind of follow-up was a major objective for this seminar from its initial planning stages. Early on, it was proposed that the university consortia could and should play a major role in this outreach process. Consequently, during the last afternoon of the seminar the representatives from each consortia met together and developed action plans which each individual, working within their consortium and university, would take responsibility for implementing following the seminar. These action plans are summarized below.

### MIAC (Mid-America International Agriculture Consortium)

1. Study of returned participants to collect data on what they wish they had done while in U.S. Oklahoma State University will take lead on this.
2. Inventory of each university in consortium to identify type of supplementary courses which could complement and enhance student's degree program.

3. Develop video or slide presentation on the need for relevancy in academic programs to show to faculty. This will be developed around the general concept so it will be relevant to all institutions and all disciplines. Possibly incorporate some key statements from videotape of this seminar.
4. Conduct a conference for MIAC institutions involving key people such as graduate student coordinators and department chairmen. At conference, show video and present inventory of supporting courses (2 and 3 above). Use conference to help develop fact sheet of information they need to give to faculty advisors. Also develop a student training document which would include information on what is expected of student, responsibilities of professor, supplementary training, etc. Include discussion about who should advise student; how decide who will be faculty advisor.
5. Inventory library materials and other documents specific to LDC's and make this available to other MIAC universities.
6. Use proceedings of this seminar to prepare an article for MIAC Newsletter.

NECID (North East Council for International Development)

1. At May 8 meeting of NECID representatives in Boston:
  - A. Distribute seminar presentations.
  - B. 20-30 minute edited version of videotape of highlights of useful suggestions for orientation of advisors/instructors.
  - C. Develop strategies for faculty orientation.
  - D. Design single sheet checklist/fact sheet for use at department level.
  - E. Design ways to provide developing country experience for department faculty members.
  - F. Have NECID representatives at May 8 meeting develop their own plan of action.

MUCIA (Midwest University Consortium for International Agriculture)

1. Develop fact sheets to get information out to various audiences - a specific focus for each group covering issues of concern to them.
  - A. Students - information beyond own campus.

- B. Faculty - checklist of student needs.
- C. Administrators, Deans and Department Heads
- D. AID Bureaus
- E. AID Missions

Explore possibility of funding through AID/BIFAD. Update on two-year cycle.

2. Contact with Department Chairs and Associate Deans of Resident Instruction through national meetings such as NASULGC and AASCU.
3. Hold seminar on own campus for faculty and students.
4. Publish condensed proceedings of seminar.
5. Replicate seminar at next ISEC National Training Conference in March 1987. Review findings of this seminar and progress being made on follow-up activities.
6. Have video available to universities upon request.

SECID (South East Consortium for International Development)

1. ISEC send letter containing key points of seminar to Chair of BIFAD. Chair send letter to AID Administrator and Title 12 University Presidents. AID Administrator pass information on to

AID/Washington and USAID Missions. Consortium send letter to university representatives to pass information on to faculty advisors on their campus.

2. Seminar attendees prepare memo summarizing seminar to administrators and serve as advocates and resource people to others at their institutions about concerns and examples discussed at seminar.
3. Seminar organizers prepare summary of recommendations and action plans and provide to seminar attendees by May 9.

CID (Consortium for International Development)

1. Share information from seminar with key individuals on campus.
2. Prepare highlights from proceedings and share through newsletters.
3. Share seminar papers with key faculty on campus.
4. Identify others on campus who, along with those attending this seminar, can look at all aspects of training.
5. Conduct workshops with administrators, faculty, students, etc., on individual campuses to promote and share information about hands-on experiences, materials and approaches that have been successful.

**SUMMARY**

## Summary

Two major issues which kept resurfacing throughout the seminar were the conduct of thesis research in student's home country and increasing the capability of the faculty to assist foreign students in planning and implementing a plan of study most relevant to the student's needs.

The faculty advisor is one of the key elements in providing more relevant educational and training programs for foreign students. The faculty advisor is instrumental in helping the students develop their plans of study. S/he can be an advocate for providing appropriate opportunities within the required degree program to meet the student's needs. To do this, it is important that those advising LDC students have an awareness of and sensitivity to situations and positions to which the students will return. Seminar participants felt that the best way to do this was to provide experiences, short term or long term, for faculty members in developing countries.

Increasing the relevancy of the research done by foreign students during their degree program was considered by the seminar participants to be a high priority need. Dr. James Sentz presented the University of Minnesota's experience with in-country research in

their collaborative degree program with Morocco's Institute Agronomique et Veterinaire-Hassan II. Dr. Manuel Pina spoke on a suggested approach for collaborative research and training with the International Agricultural Research Centers. Other approaches and ideas were discussed. One idea mentioned that has potential is the use of the Collaborative Research Support Programs (CRSP). Ways need to be explored of how these might effectively be utilized as a vehicle for providing the opportunity for students to conduct thesis research.

Stumbling blocks to home country research remain. These include current AID rules and continued hesitancy on the part of many U.S. university graduate schools. Many attending the seminar pointed out that the guidelines provided by AID's Handbook 10 (Participant Training) do not facilitate arranging for home country research. It was suggested that if AID was encouraging home country research that these guidelines would need to be reviewed and changed accordingly.

Also emphasized was the importance of advance planning of the student's program. Ways to make the education and training more relevant need to be integrated into the overall program rather than "added on" at the end. In many cases, this type of planning should be included in the project paper. Activities such as special

leadership/management courses, bringing together all students from a specific project or country for a seminar, special hands-on experience during the summer, or use of special problem or "tag-a-long" courses can be more productive if they are coordinated within the degree program. In this way, the relevancy can be increased without a large incremental increase in the length or cost of the program.

Many issues and concerns were raised and discussed during the seminar. Many successful and potentially successful ways to approach these issues and concerns were shared, explored and discussed. This Proceedings was put together to synthesize these discussions and provide a vehicle for sharing them with others. If you are interested in learning more about these issues you might want to contact one or more of the participants in this seminar.

Program  
and  
List of Participants

THE ISEC/BIFAD WORKING SEMINAR  
ON INTERNATIONAL EDUCATION AND TRAINING:  
A FOCUS ON RELEVANCY AND SUPPORT SERVICES

GOAL - To make an expanding constituency of cooperating universities, organizations and agencies aware of the need for and ways of increasing the relevance and applicability of education and training programs for foreign students and expanding the related support services available to them on U.S. campuses.

OBJECTIVE

1. To reaffirm the need for and the possibilities of increasing the relevancy of academic degree programs and expanding the related support services made available to students from developing countries.
2. To identify and share a general strategy for and specific ways of increasing relevancy and related support services.
3. To prepare ACTION PLANS for further collaboration in the discovery and dissemination of strategies and ideas for increasing relevancy and related support services throughout the community of cooperating institutions and organizations.

SCHEDULE

April 23

- 9:00 - 9:15am - Welcome and Introductions
- 9:15 - 9:30am - Statement of Background, Purpose and Process
- Val Mezainis, Director  
International Training Division,  
OICD/USDA, and  
Co-Chair, ISEC Training Committee
- 9:30 - 10:10am - Need for and Possibilities of Increasing Program Relevance and Related Support Services

Chair: Jim Jorns

**Presenters:** John Woods, Director  
INTERPAKS,  
University of Illinois

Manual Pina, Head  
Training and Communications  
International Potato Center  
Lima, Peru

10:10 - 10:30am - General Group Discussion

Chair: Jim Jorns

10:30 - 10:50am - Break

10:50 - 11:15am - General Strategy for Increasing Program  
Relevance and Related Support Services

Chair: Joyce Kaiser, Assistant Director  
Office of International Training  
Agency for International Development

Presenter: Don D. Dwyer, Executive Director  
Consortium for International  
Development

11:15 - 11:30am - General Group Discussion

Chair: Joyce Kaiser

11:30am - Noon - Specific Examples of Ways to Increase Program  
Relevancy and Related Support Services

Chair: Allen Christensen

- Introduce small group process
- Integration of Education and Training  
in Response to Identified Needs

Indonesia Western Universities  
Agricultural Education Project,  
University of Kentucky

*Presenter: Herbert Massey, Director  
International Programs  
in Agriculture*

*Noon - 1:00pm - Lunch (at NASULGC)*

*1:00 - 2:30pm - Continuation of Specific Examples*

*◦ In-country Research and Cooperative  
Degrees*

*Morocco Agronomic Institute  
(Hassan II Agriculture and  
Veterinary Institute) Project,  
University of Minnesota*

*Presenter: Jim Sentz,  
International Training Officer*

*◦ Networking for Professional Integration  
Tanzania Training for Rural Development*

*Presenter: Janet Poley, OICD/USDA*

*◦ Emerging Technologies for Distance  
Learning*

*Presenter: Judy Brace, Director  
Clearinghouse on Development  
Communication  
Academy for Educational Development*

*2:30 - 5:00pm - Small Group Discussion*

*5:00 - 7:00pm - Reception*

*April 24*

*8:30 - 9:45am - Continuation of Small Group Discussion*

*9:45 - 10:00am - Break*

10:00 - 11:30am - Small Group Reports and General Discussion

Chair: Allen Christensen

11:30 - 1:00pm - Lunch (on own)

1:00 - 4:00pm - Preparation of Action Plans

Chair: Val Mezainis

4:00 - 4:30pm - Summary - Jim Jorns

Location: Kellogg Room  
NASULGC  
One Dupont Circle

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