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Directors of International  
Agricultural Programs**  
*Conference Theme: The Decade Ahead*

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**A Bicentennial Event**

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Good Morning - Welcome to the 21st Annual Meeting of AUSUDIAP

Speaking to you as a colleague I take this opportunity to welcome you and to thank you for coming. To the Executive Board, I express appreciation for your thoughtful acceptance of our invitation to join with us as we celebrate the 200th anniversary of the chartering of UGA.

This year has been filled with excitement. We have had and continue to schedule significant activities as a part of the Bicentennial. In fact, this meeting has been designated as one of those significant events.

With these remarks, I declare this the 21st coming together of AUSUDIAP in session and call upon our President Harold Matteson to give us the benefit of the wisdom he has acquired in his year as elected leader of our organization.

Opening remarks for the 1985 AUSUDIAP Conference by Darl E. Snyder

## STATE OF THE ASSOCIATION

### WELCOME TO THE AUSUDIAP 21st ANNUAL CONFERENCE!

Harold R. Matteson  
Chairperson  
New Mexico State University

This has been a relatively active and we hope productive year for your association. As you know the majority of your association activities are initiated by and conducted through eleven committees whose activities are facilitated and monitored by the AUSUDIAP executive committee. These committees are comprised of 62 AUSUDIAP members which constitute approximately one-third of our active membership.

As you know, we will have a business meeting this afternoon during which each committee will give a report of its accomplishments for the year. I would like to provide, at this time, however, an overview of this year's activities which will be reported in greater detail this afternoon

#### 1984-1985 AUSUDIAP Activities

- 1) We are pleased to report that a manual entitled A Guide to Inter-University Cooperation in Participant Training is nearing completion and should be published in two to three months. We hope to have this distributed to each member of our association by the end of the calendar year. This manual has been prepared over the past 2-3 years with the expectation that it will assist each of us in the preparation of a more meaningful and relevant training program for sponsored International students on our campuses.
- 2) AUSUDIAP's Ad Hoc Committee on communications, in collaboration with our colleagues in ACE conducted a joint workshop in St. Louis on February 12-14, 1985. The major purpose of this workshop was to determine how ACE and AUSUDIAP members can work more closely together in technical assistance projects and in promoting our international programs and activities on campus. As a result of this meeting, it was decided that an ACE member would attend the AUSUDIAP Annual Meetings and likewise an AUSUDIAP member would attend the ACE Annual

Meetings. Dr. Randell Cofer, ACE Director of the Southern Region and a faculty member at the University of Georgia, was appointed as ACE representative to our Annual Meeting. Please feel free to contact him to exchange ideas on the types of involvement ACE members can have in your international activities. Dr. Larry Apple, Chairperson of AUSUDIAP's Public Awareness Committee, will be our representative at the ACE Annual Meetings in June 1985.

- 3) The Executive Committee appointed two new committees this year, a Public Awareness Committee and International Programs Peer Review Committee. These committees were appointed to deal with the needs we have as a professional organization which are not being handled by any of our other committees. We are becoming increasingly aware of the need to communicate various types of information to the public which need to be informed and/or involved in our programs. The Public Awareness Committee has been quite active and will be sharing with us the results of a survey it has conducted regarding the public awareness activities of our respective institutions.

The International Programs Peer Review Committee will also be sharing some thoughts as to how we as a professional organization can serve a function which is an important part of most professional associations. This is, to assist our respective institutions in accessing the strengths and weaknesses of our overall programs and provide constructive feedback as to how we can improve and strengthen our campus and overseas activities. If handled properly, I feel this committee can enhance our status as a professional association.

- 4) The Legislative Committee has been actively working with the NASULGC Office of International Programs and Studies on various legislative issues which are of interest to AUSUDIAP members. They have also been working on a strategy of how to work with the new congress. We will hear more this afternoon from John Moore, Committee Chairman, regarding this subject.

This is a brief overview of some of the major activities of your association for this year.

Now, let's look at what might be our future agenda for next year and possibly the years beyond.

## Future Agenda

During the past year AID has suffered severe reduction in employee numbers which has also impacted on the number of employees included in the BIFAD staff in Washington, D.C. AID is also in the process of some major organizational changes which will impact on our involvement with this Agency in the future.

We will also be confronted with issues related to several of BIFAD's initiatives such as the M.O.U., Joint Career Programs, and the collaborative mode of implementing technical assistance projects. The manner in which these issues are resolved will impact on the direction and future existence of these programs. There will also be several issues related to the programming and training of U.S. Government-sponsored participants from Central America resulting from the Kissinger Report.

Needless to say, there are a wide variety of issues and programs we could deal with in the near future. However, I suggest we be careful not to take on too many tasks or activities which would result in diffusing our resources and would make us relatively ineffective. Thus, I suggest we focus our efforts on three major areas:

- 1) Continue to improve AUSUDIAP as a professional organization. I believe the activities of the International Programs Peer Committee and the Public Awareness Committee should contribute significantly to the professional goals of our association. We need to review the effectiveness and purposes of our existing committees and make changes where deemed to be appropriate. Also, we need to continue and possibly increase our support to our Legislative Committee so that they can actively pursue our interests in the political arena. In short, we should continue to improve our professional capacity to deal with those issues and problems which are of concern to us.
- 2) We need to continue to delineate the roles and responsibilities of AUSUDIAP and our sister institution CIAP, and to give whatever support necessary to CIAP so that it can take its role in NASULGC as the voice for the international area. Within NASULGC, CIAP is important to us. Thus, we need to assure it has the support and recognition in NASULGC it needs to function effectively.
- 3) We need to work closely with BIFAD and the International Programs and Studies Office in NASULGC

to assure their voice is heard, on our behalf, in AID and other relevant Economic Development Agencies and in the political arena.

While there are certainly other issues and problems which would warrant our attention, I am suggesting we focus our efforts on these three areas during the forthcoming year.

I would like to conclude by indicating that it has been a growth experience and a pleasure for me to serve as your Chairperson and wish to express my thanks and appreciation for your support and active participation in AUSUDIAP during the past year. A special thanks goes to the members of the Executive Committee, chairpersons of our 11 committees and to Howard Massey and Darl Snyder for their effort in planning and arranging this year's Annual Meetings.

## LOOKING FORWARD TO WORLD AGRICULTURE

### The Changing Roles of National Programs and CGIAR Centers

Richard L. Sawyer  
Director General  
International Potato Center  
Lima, Peru

This paper was developed for a panel discussion on "Looking Forward to World Agriculture--The Changing Roles of National Programs and CGIAR Centers". There are many components to international agriculture, but this paper deals only with the major three components presently involved in the research leading to new relevant technologies and the transfer of these technologies around the world.

In the developed world the private sector has become increasingly important and there is considerable controversy as to the relative importance of the private versus the public sector in the production of new varieties as well as biotechnology in general. In developing countries in general, the private sector has played a very minor role up until now. A good question is, how soon will a private sector emerge in developing countries and what role will it play in agricultural development?

Developing countries and the international centers in the production of new relevant technologies have mainly depended up until now on the research from North American and European institutions. But this backlog of research which has been available for application to agricultural production needs in the developing world has been depleted. Many of the international centers are having to move into more basic research to solve some of their priority problems.

A number of developed countries have emerged sufficiently to be able to solve their own major production problems and help their less fortunate neighbors. They no longer require the kinds of assistance provided a decade ago, in fact they only want help on their terms. During the past ten years developing countries have become organized and are speaking collectively and strongly about the kind of help they need and how it should be given.

The international centers of the CGIAR system played a bridging role in the early years, taking the research and technologies available in the developed world and adapting it to the needs of the developing world. However, in recent years many of the international centers have moved their programs towards areas for which they have a long term

continuing comparative advantage for world agriculture. For example, the world's genetic resources for potatoes are held by the International Potato Center to be maintained, exploited, and distributed to all countries of the world capable of developing their own varieties. In general, the germplasm for center-addressed commodities are maintained, exploited, and distributed in a truly scientific manner, which no nation alone could justify. Centers are also playing a major role in specialized training, under developing country conditions and in developing country climates. Centers are playing a very important role in the transfer of technology from one country to other countries of the world where there is a similar need and application.

Last September, a think tank was held on the future evolution of the CGIAR system. This think tank, although aimed at the CGIAR centers, also addressed the roles of developed and developing nations with which the centers interface. The discussions brought out a number of problems that need to be addressed. Let me list some of these.

- 1) Many of the centers are being pushed down stream as they respond to special country program projects. In my opinion, the African food problem may be leading centers into major development projects for which they may not have a comparative advantage. The pressure of donors and the money being made available may be steering the center system away from the things for which they were established and away from what should be their relatively permanent role to world agriculture.
- 2) The flow of research on which developing countries and the centers have depended from North American and European institutions is drying up. There is little left on the shelf at present. Maybe the status symbol of biotechnology will revive some of this. But maybe centers should be contracting more of their basic research needs with developed country institutions so that the centers can stick to the action area of applied research. Are Title XII kinds of activities leading developed country institutions into the kinds of programs for which they have a comparative advantage for overseas help?
- 3) Many center programs have changed very little since being created. Yet the situation in agriculture in the developing world has changed considerably. Many countries in Asia have met their challenge with major production and yield increases due to investments in irrigation and

double cropping using modern high yielding varieties. Africa, on the other hand, a land rich continent has had tremendous increases in food imports, a declining production growth rate, and declining exports. Africa has not yet decided on the relative importance of food versus export crops. However, food trends indicate that Africa will need massive imports by the year 2000 or the famine recently evidenced will return manifold. Who will pay for these imports or can trends be changed?

- 4) Budgets for agricultural research in most developed countries have been greatly decreased in recent years. In fact, the interest in agriculture as a career has sharply diminished. An increasingly higher proportion of the students in agriculture in developed country institutions are from developing nations. How long will the developed country institutions support this investment in foreign agriculture?
- 5) The CGIAR system of centers has mainly concentrated on priority food crops up until now. Funding has not permitted addressing factor research on such important problems as soils and water. There are a number of additional commodities which need to be addressed in a similar way as the food commodities. Some of these are non-food commodities. Firewood for fuel is an increasingly scarce commodity in much of Asia. Several eminent economists have correctly pointed out that the production of cash may be more important than food in many countries and for many small growers. Who will address such subjects in a similar way as centers are approaching major food commodities if they cannot be incorporated into programs of the CGIAR centers.

John Mellor in a presentation at International Centers Week in Washington in 1984 mentioned three major changes which have been evident in world agriculture for some time and will affect all of our programs.

These changes are:

- 1) The swing from Asia to Africa in needs for increased food production.
- 2) The extraordinary growth in food exports of developed countries including the emergence of the European community as a major food exporter.

- 3) The continued existence of massive malnutrition and poverty in Asia even though there have been major increases in food production.

Each panel member here represents one of the major components in research for world food production. Their presentations will hopefully identify major areas where they have comparative advantages for helping to solve food problems. Eventually strategies must be developed which will nudge each component in the right direction for the future needs of world agriculture.

**A BRIEF SURVEY OF THE CONSULTATIVE GROUP**  
**ON INTERNATIONAL AGRICULTURAL RESEARCH:**  
**Where it has been and where it is going**

Curtis Farrar  
Representative of Consultative Group on  
International Agricultural Research (CGIAR) System  
World Bank

It is a real pleasure for me to be with this group today, to be addressing in a different role many with whom I have had the privilege of working in the past in the interest of international agricultural development.

I know that most of you are familiar with the CGIAR, so I will omit the general description which is necessary for less knowledgeable audiences. But I may surprise you with one fact: the CGIAR disposes of something between three and five percent of all the funds that are spent on research on agricultural production in developing countries. That counts both the contributions of donors and expenditures by the developing countries themselves. Thus while \$175 million is a lot of money, or \$225 million if special projects are counted along with core contributions, it is a very small share of the total research focused on agricultural production in the third world, and would scarcely be noticed if it were all shifted to the direct support of national programs.

I count three phases in the history of the CGIAR:

- 1) The period before 1970, which saw the definition of the concept on which international centers are based: that agricultural technologies may not be transferrable from temperate to tropical conditions, but that the methodologies of research in a multidisciplinary framework can deal just as effectively with tropical production problems as they have with temperate ones. In this period, two centers, IRRI and CIMMYT, were working on three crops as produced in relatively favored circumstances. They had enormous success in wheat and rice, and started the Green Revolution.
- 2) The period 1971 to 1980, which saw the creation of the CGIAR and thus the expansion of support beyond the two founders, the Rockefeller and Ford Foundations. This was a period of rapid growth, stimulated both by the success of high yielding

varieties of wheat and rice, and by the world food crisis of the early seventies. The number of centers supported grew from 2 to 13, the annual budget from about \$10 million to \$120 million, and the coverage to about 75% of the food consumed in the developing world. It is probably more informative to list those main sources of food not covered than those that are. The CGIAR today does little or no work on sugar, pork, poultry, eggs, fish, seafood, alcoholic beverages, vegetables and oilseeds. Cash crops as such are also not covered. During this second period the CGIAR supported system became extremely complex, with only five centers focused on one or two commodities each; another five are concerned with ecological zones and production systems; and three not concerned directly with production, but with genetic conservation, food policy, and research institutions.

- 3) Finally, there is the period beginning in 1981 and not yet over, which is one of stability, with no change in the number of centers, and a funding curve which is becoming flat.

If one defines maturity as "no growth," the CGIAR is presently at that stage, but not particularly happy with it.

There are presently two major exercises underway in the system designed to look at what has been accomplished and what lies ahead. The first of these is a survey of the impact the system has had, with an estimate of the impact that lies immediately ahead. The work is under the guidance of a small and distinguished panel chaired by the President of the U.S. National Academy of Science, and the scope is broad while the time allowed was a scant year. The study looks at two main aspects of impact, contributions to agricultural production, and effect on the capacity of national agricultural research systems. Its principal methodology is to come at the two issues from the point of view of developing countries that is to consider the impact of the system as a whole rather than of centers one by one. There is also a special study of training.

While the motivation for the study was in large part to look beyond the high yielding varieties of wheat and rice, not surprisingly the principal impact of the CGIAR remains in these two crops. Somewhat surprisingly, modern varieties have continued to expand even after they achieved their main results in the first decade. Numerous varieties associated with center research on other crops such as

maize, beans, cassava, cowpeas, and sorghum have been released and are in use, but it is not possible with existing data to quantify their contribution. Many other technologies with high potential impact are in the pipeline.

The impact of the CGIAR centers on national research systems varies widely, depending largely on the state of development of the national system involved and the crops it addresses. In general, however, the study has found strongly positive results in this area as well.

The second exercise which deals with priorities, will, like the impact study, be completed this fall. The priorities study is conducted on behalf of the Group by its Technical Advisory Committee, a group of twelve scientists equally divided between the developed and the developing countries. The resulting paper, which is approaching final draft, looks at priorities in a five to ten year framework, and also in a 25 year plus framework, illustrating the point made by Dick Sawyer that the future of the CGIAR now seems to stretch a long way. After a very thorough and soul searching effort, it seems likely that the priorities paper will not recommend major changes in direction. The broad commodity approach of the centers program will be retained, with factors of production being handled within a commodity framework rather than through independent, factor-oriented centers. For the first time in a CGIAR context, however, there is likely to be considerable attention paid to the needs of the large regions of the developing world, with particular attention to Africa where the problems are less tractable than in Asia and Latin America.

I will conclude this brief paper with a summary of several of the important issues that the CGIAR is facing today, which I know are also relevant to the work of AUSUDIAP.

#### 1) THE FOOD CRISIS IN AFRICA

- There has been some impact of CGIAR research in Africa, but not a great deal. The impacts cited are:
- IITA streak resistant maize varieties, and some CIMMYT materials are used
- IITA cassava varieties with disease and pest resistance and high productivity are spreading, and the work on control of cassava pests is making progress
- short duration varieties of cowpeas, also from IITA, are being multiplied and used

- drought tolerant sorghums in which ICRISAT played an important role have made some impact in the Sudan
- IRRI based rices are working well in the irrigated rice growing areas
- CIP potato programs are making significant progress in some places

Why is there not more impact? There is a very large CGIAR effort in Africa. Four of the centers are located there, and all of the others are active. Some 40% of the total CGIAR funding, about the same percentage of scientists, and well over half of the scientists operating away from the centers themselves are located in sub-Saharan Africa. Among the apparent causes of slow progress are the fact that initially much effort was put into unsuccessful attempts to transfer technology from other parts of the world. The research problems are hard ones, and time is required, particularly in the case of many of the crops which had not benefitted from substantial previous research in the developed world. Perhaps the most important factor, however, is the weakness of the national research systems in Africa, as compared with other parts of the developing world.

What can be done to become more effective in Africa? There are those who urge moving toward more short range research, and more engagement with national systems to help them at the applied level. Centers can be effective at this level, but perhaps have less comparative advantage than with more broadly applicable research. Moreover, it is clear that some of the research problems in Africa require complex and even quite basic work and cannot be dealt with at the applied level alone.

Others suggest concentrating efforts in areas that seem most likely to offer success, leaving aside the harder problems until the overall momentum of change has shifted in favor of food production in a substantial part of the continent. This obviously raises very sensitive political issues, as it would involve bypassing whole regions and even countries containing many poor people. The creation of additional crop-based centers for the various regions of Africa has been proposed, but a more popular approach to the problem of integration of effort at the regional level is the idea of crop-based research networks in which national systems and centers would adopt an explicit division of labor and work together on the major research issues. Still another idea is to focus on cash crops, where the former research structure in Africa was the strongest.

## 2) ADDITIONAL CROPS

Among those crops being considered for addition to the CGIAR program, or for greatly increased emphasis are the following:

- sweet potato, which now has a small amount of attention through IITA, and is one of the crops addressed by the Asian Vegetable Research and Development Center (AVRDC). Sweet potato is a major food source in Africa, and the results of research to this point suggest that large increases in yields are achievable.
- aquaculture, not currently addressed within the CGIAR at all, although there are several external institutions at work on it. Fish raising is primarily important for its potential, and has some very strong supporters. ICLARM, one of the existing institutions, faces very difficult times if it cannot find new sources of support.
- vegetables, which are scantily covered in the CGIAR, are important elements of the diet, a source of cash earnings, and a particular concern of women in many parts of the world, whereas in most societies women tend to benefit less than men from improvements in agricultural technology. It would be a very complex task to organize a research program of a comprehensive nature on the many varieties of vegetables, and there is the question of the AVRDC which is doing good work but is excluded from CGIAR support for political reasons based on its location in Taiwan.
- sheep and goats, addressed in a limited way by ILCA and ICARDA and very important both to women and to poor farmers.
- plantains, a major source of food in Africa and elsewhere, included in the IITA program as special project research, and being addressed by a new network organization outside of the CGIAR, with a first concentration on conserving germ plasm collections being made available by commercial banana producers who are ceasing to conduct research.

If funding remains level, there is the obvious question of what should be given up in order to provide for any of these new priorities?

### 3) RELATIONS WITH DEVELOPING COUNTRY RESEARCH INSTITUTIONS

The strength of national systems in developing countries is obviously a key to the success of the CGIAR, as there is no way that international centers can substitute effectively for national systems. Yet the ways open to the international system to strengthen national systems are limited. Moreover, in spite of the representation of developing country scientists on center boards, and on TAC; of the growing number of developing countries that are contributing members of the CGIAR and of the presence of FAO elected regional representatives in the Group; of the networks, the training programs and the growing number of center scientists stationed away from the centers, there remains persistent criticism that the developing countries do not have sufficient influence over the priorities of the CGIAR. The criticism obviously has to be taken seriously, and understood and acted upon.

Of course, national systems themselves have changed a great deal, and today represent a very large spectrum in terms both of size and scientific level. Many of the more advanced ones no longer need to have finished varieties or complete technologies from the CGIAR. These systems make increasing demands on the international centers for more sophisticated and specific intermediate products. The less advanced systems, on the other hand, or those in small but ecologically diverse countries, still require finished or almost finished products which they can test and use. The centers are thus faced in both training and research with a wide spectrum of demand.

On the other hand, the centers are reasonably small organizations, and incomplete from the point of view of any national system; no one of them covers the same range of responsibilities of even the simplest national research system. The national systems thus can secure only a part of their needs for scientific support from any single international center, or indeed from all of them.

At the same time, a single center can push at any national system offers of training and advice, and seeds to test, which may stretch the capacity of the national system to respond. And several such centers operating independently can compete with each other as well as with the other concerns of the national system.

The CGIAR is responding to this problem in a number of ways. The sharp growth in scientists posted in the field away from their centers to almost one-third of the total 750 senior scientists, is one indicator of the response. More pointedly, the centers are addressing directly the problem of working together in areas, such

as Southern Africa, where many of them are active. The International Service for National Agricultural Research (ISNAR) is the CGIAR's direct attempt to assist national system development. ISNAR has been at work for almost five years, and is currently being assessed in its first external program and management reviews.

#### 4) RELATIONS WITH DEVELOPED COUNTRY SCIENCE

The CGIAR system is based on application to developing country agriculture of scientific methods and background research done in the developed countries. The interrelationships between the work of the centers and the work done in developed country laboratories is therefore both complex and important.

For most of the centers, problems arise that surpass their own range of special skill, or their equipment, or that can only be conducted in countries where because of climatic conditions there is no risk of contamination of the local environment. Some centers, CIP is a notable example, contract for such research with the developed country institutions most capable of meeting their needs, and do so with their own core funds. Others look to the developed country concerned to provide the financing. In recent years, donor members of the CGIAR have become increasingly interested in promoting cooperation between their own scientists and the centers. But they do so in quite different ways.

Since the United States is represented elsewhere on this program, I shall not deal with this country specifically. Three quite different approaches are illustrated by the policies of the British, the French and the Germans.

- Britain, which still has institutions with a history of involvement in agricultural research in the tropical areas, going back into the colonial period, will finance collaborative research at a British institution on behalf of a center only if the center originates the request. There appears to be a deliberate effort on the part of the British authorities to avoid the situation in which a British institution is proposing its own research agenda for funding in connection with CGIAR work. The funding comes from a separate link and is not counted as a contribution to the CGIAR.
- France still has a large program of research on tropical agriculture funded as part of the overall French program of science and technology and carried on by a number of institutions which work both in France and overseas. The growing program of collaboration between these institutions and CGIAR centers involves the identification

of areas of mutual interest which then become the subject of a joint program with each side funding its own work. One particular mode of cooperation is the temporary posting of a French scientist at an international center. Steps are underway to enhance French institutional cooperation with international centers significantly.

- In recent years, Germany has reserved a growing share of its CGIAR contribution for collaboration between centers and German institutions. Each year the centers are asked to make specific proposals for cooperation with German institutions, which are then reviewed competitively by the group of German scientists who advise their government on cooperation with international agricultural research. The activities selected tend to fall somewhat more than in the case of British or French programs, outside the core activities of the centers.

While cooperation of this kind plays an important role in center programs, and can be even more helpful in the future, there are some obvious problems. Some of the donor science agendas are different from those of the centers, and involve activities which may compete for center resources with developing country priorities. Donor countries often hope to deepen their own expertise in tropical agriculture, and to test their science and technology in developing country circumstances.

These goals are perfectly valid ones, but they may overload center capacities, and conflict with each other, and with the priorities of the centers' own programs. Moreover, the donor science objectives often have a great deal of political push behind them.

This is an area where great wisdom, some restraint, and a lot of diplomacy will be required to make sure that the impact of agricultural research on developing country agriculture can live fully up to its potential.

CENTERS SUPPORTED BY THE CGIAR, 1984

<u>Acronym</u> (Year Established)	<u>Center</u>	<u>Location</u>	<u>Research Programs</u>	<u>Geographic Focus</u>	<u>1984 Budget a/ (\$ million)</u>
IRRI (1960)	International Rice Research Institute	Los Banos, Philippines	Rice Rice based cropping systems	Global Asia	22.5
CIMMYT (1966)	Centro Internacional de Mejoramiento Maiz y Trigo	Mexico City, Mexico	Maize Bread wheat Durum wheat Barley Triticale	Global Global Global Global	21.0
IITA (1967)	International Institute of Tropical Agriculture	Ibadan, Nigeria	Farming systems Maize Rice Sweet potato, Yams Cassava, Cowpea, Lima bean, Soybean	Tropical Africa Global Tropical Africa	21.2
CIAT (1968)	Centro Internacional de Agricultura Tropical	Calli, Colombia	Cassava Field beans Rice Tropical pastures	Global Global Latin America Latin America	23.1
CIP (1971)	Centro Internacional de la Papa	Lima, Peru	Potato	Global	10.9
WARDA (1971)	West African Rice Development Association	Monrovia, Liberia	Rice	West Africa	2.9
ICRISAT (1972)	International Crops Research Institute for the Semi-Arid Tropics	Hyderabad, India	Chickpea Pigeonpea Pearl millet Sorghum Groundnut Farming systems	Global Global Global Global Global Semi-Arid tropics	22.1

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a/ CGIAR supported core budget, net of capital, at the bottom of the bracket (from 1983 Integrative Report.)

<u>Acronym</u> (Year Established)	<u>Center</u>	<u>Location</u>	<u>Research Programs</u>	<u>Geographic Focus</u>	<u>1984 Budget a/ (\$ million)</u>
ILRAD (1973)	International Laboratory for Research on Animal Diseases	Nairobi, Kenya	Trypanosomiasis Theileriosis	Global Global	9.7
IBPGR (1974)	International Board for Plant Genetic Resources	Rome, Italy	Plant genetic resources	Global	3.7
ILCA (1974)	International Livestock Center for Africa	Addis Ababa, Ethiopia	Livestock production systems	Tropical Africa	12.7
IFPRI (1975)	International Food Policy Research Institute	Wash. D.C., U.S.A.	Food policy	Global	4.2
ICARDA (1976)	International Center for Agricultural Research In the Dry Areas	Aleppo, Syria	Farming systems Wheat, Barley, Triticale, Broad bean, Lentil, Chickpea, Forage crops	Dry areas of West Asia and and North Africa	20.4
ISNAR (1980)	International Service for National Agricul- tural Research	The Hague, Netherlands	National agricul- tural research	Global	3.5

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a/ CGIAR supported core budget, net of capital, at the bottom of the bracket (from 1983 Integrative Report.)

**THE CHANGING ROLE OF NATIONAL PROGRAMS**  
**IN THE DEVELOPED COUNTRIES**

A. Colin McClung  
President  
International Agricultural Development Service (IADS)

Some years ago my colleague, Frank Byrnes, published a version of his Ph.D. thesis which dealt with the expectations and realities of overseas assignments of Americans in international agriculture. He called the article, which was a long one, "Assignment to Ambiguity". His investigations led him to conclude that many Americans who took assignments in international agriculture had conflicting marching orders, and understood only vaguely what their assignments really were. That is a story in itself, and it is one that still deserves thought and attention. It comes to my mind at this moment, however, because of a certain confusion as to exactly what topic I am to discuss. I will not attempt to blame my uncertainty on anyone, and certainly not on our chairman, who is an individual of strong mind and quick reaction. Rather than incur his wrath, I simply will do what some of Frank's interviewees indicated they did a quarter of a century ago when faced with uncertainty. They defined their own assignment and tried to perform in accord with a set of self-described criteria.

Today, I will comment on "The Changing Role of National Programs in Developed Countries" in relation to world agriculture. Other speakers will deal with similar topics for (a) the developing countries and (b) the CGIAR centers. I will try my best not to discuss my colleagues' subjects but I do have to include at least a sentence about where I believe they will come out. To a considerable extent, the role of the developed country institutions in world agriculture will be determined by what happens in the developing countries. Hence, my comments are based on certain premises about the course which these institutions will take.

Many of the developing countries have moved strongly ahead in the past two decades. The intensive infusion of expatriate expertise which was common in the 1960's no longer is needed in most of Asia or Latin America. New kinds of inputs from the developed countries are needed (and demanded).

The international centers are approaching a crossroads. They probably will shrink somewhat in size in the years ahead and tend to take up more basic studies than in the

first years. Center scientists will have a more collegial relationship with developing country staffs and we will see more cooperation between centers and advanced laboratories in the developed countries.

To define my terms of reference more closely, I wish to consider mostly the programs in or from the United States and not to deal with all developed countries. While the trends may be the same, I feel more comfortable with this limitation. Within the U.S., I would like to consider essentially all domestic public agencies that are engaged in international work. Most of these are not "national" in scope by common definition. Even the universities, which as a group dominate all our U.S., international involvements in agriculture, are not "national." But the nature of this meeting is such that my comments are directed primarily to the universities.

My own perspective over 29 years of international work has been that of a staff member of private, non-profit agencies. Specific assignments have included field and headquarters duties with the Rockefeller Foundation, management responsibilities, including board memberships at three international centers, and responsibility for international programs at two international centers and the International Agricultural Development Service (IADS).

At present, IADS is in the final process of merging with two organizations with Rockefeller antecedents, the Agricultural Development Council (ADC) and Winrock International Livestock Research and Training Center. I mention this particularly because those of us responsible for the merger are defining long range program goals for the new organization which will be called the Winrock International Institute for Agricultural Development. My comments reflect these deliberations. In fact, I have organized my remarks into the two categories of activity in which the new organization will engage: (a) human resource development, (b) technical cooperation. What is the future role of U.S. national agencies, more specifically U.S. universities, in each of these areas?

### Human Resource Development

In our view, human resource development is the single most important activity in which U.S. institutions can engage if they wish to contribute significantly to international agricultural development. And it is an activity in which U.S. universities are dominant. Even if they had no specific international programs, American universities would be predominant because they provide the essential role of developing human resources.

In the years ahead, the opportunities in this area will remain at the head of the list. The developing countries, the donor agencies and practitioners, such as me and my colleagues, base our view of the future on the expectation that you, the U.S. academic community, will continue to do this. Central to this activity is, of course, the training of graduate students in the basics of specific disciplines. In the years ahead, you should continue to provide quality graduate education for students from developing countries, as I know you will.

Some of my colleagues, while accepting this role for U.S. universities, are concerned that the training provided is less relevant to developing country conditions than is desirable and consider such training as a stop-gap until local institutions are able to provide appropriate education. Some of these persons, and they are principally individuals who deal with the developing countries of Africa, tend to argue for less-than-top-flight training, but oriented to local conditions, to superior but less relevant training received abroad. This position currently is somewhat academic for most African countries at present require all the graduates their own institutions can produce plus all those who can be placed abroad. And the desire of the students to study abroad tends to override discussions of which training is more appropriate.

But it does behoove those concerned with planning and presenting this training to increase emphasis on issues related to constraints to effective use of what is being learned. It is important that U.S. training should stress problem identification and problem solving and take into account the development context in which the students will use their training. Emphasis should be on maintaining the same high academic standards that prevail for U.S. graduate students, but additionally finding ways to help solve the problems of the foreign students in handling the U.S. curriculum. Special language courses, tutoring in subject matter, etc. often are needed. Means of enabling students to learn at their own (but we hope increasing) pace are needed. Some institutions now supplement lecture and laboratory courses with self-instruction modules.

In our up-coming merger, we intend to adapt the ADC model of fellowship management of students in the social sciences to those in the disciplines of agricultural and biological sciences. In this we will seek help and cooperation from U.S. universities. Among the features of such a program would be a network of professionals to identify and process graduate students, to place them in appropriate graduate situations, and to assist them in taking up professional duties upon return to their countries.

Supplemental enhanced activities while the student is in the United States would include more thorough professional contacts during the graduate study period. Seminars and workshops would bring participating fellows from several disciplines and geographic backgrounds together at Winrock headquarters to consider specific subjects such as research management on factors involved in national development. Other seminars, in specific disciplines, might involve students from several countries or a region. These activities would be followed by similar networking within a given country and across countries in a region.

The 30-year experience of ADC in this sort of program has produced impressive results. With help from all concerned, we believe that we can, at modest additional cost, achieve similar results over a range of disciplines. The innovative input of the university would be extremely helpful. It also might result in some interesting networks among Americans at various institutions.

In addition to enhancing the quality of the graduate study experience, we believe that there will be excellent opportunities for U.S. institutions to offer special short courses, seminars, etc. that will benefit many developing countries directly. While there are a number of such special events already, there are opportunities for many more. For example, a pressing problem facing the developing countries at present is the scarcity of effective managers of research and other phases of agricultural development. The University of Minnesota, working in partnership with ISNAR, has developed a ten-day seminar that is aimed at this problem. This seminar has attracted substantial interest and has been well attended by research leaders from the developing countries and by donor agency officials.

Along similar lines, we have considered developing a research management course which would be based on case studies from agricultural research systems in developing countries. The cases would be prepared jointly by experienced research managers (both U.S. and third countries) working with skilled case writers. The course would be taught at a U.S. university by persons experienced in the use of this method with selected research administrators from the developing countries as participants. Subsequently, it would be offered in the developing countries in cooperation with teaching faculty from the U.S. and from third countries. We believe that there will be a good response to such specialized courses, particularly if they can be offered abroad as well as in the U.S.

In addition to interest in scheduled short courses, we expect requests to increase for study tours for individuals and small groups. The "travelling seminars"

that several of the international centers use regularly are popular with participants. Ideally, a small group of professionals travels from place to place to observe materials, study institutional relationships, and confer with staff under the leadership and guidance of an experienced chairman. While these activities are labor intensive, they have much merit for the more serious or more specialized participants. They can lead to collaborative opportunities of mutual benefit.

### Technical Cooperation

Technical cooperation (or technical assistance as it is some times called) has traditionally aimed the transfer of technology from an ongoing institution or program in a developed country to a similar organization in a developing country. This phase of international cooperation between countries is the most obvious and received much attention from U.S. institutions in the 1960's and 70's. Increasingly, as institutions in the developing countries have developed, the exchange has been seen increasingly as a two-way street.

In the years ahead, it seems apparent that the needs of Asian and Latin American countries will be increasingly of the cooperative mode. There will be continuing shifts from broad institutional involvement to more sharply focused associations. The trend will be toward a scientist-to-scientist base of association. Even when there is still a substantial gap in level of advancement between the developing and the developed country, there is a strong desire on the part of the developing country institution to be more independent. U.S. institutions should recognize these changes in status and find ways to accommodate and benefit from an association of equals.

These trends are fostered first by the growing demands of the developing country institutions and of their scientific staffs. A leading example of this situation can be seen in India which at one time had innumerable ties with the U.S. scientific community but which has had none since the early 70's. There is a strong desire on both sides to reestablish associations. Institution-to-institution as well as scientist-to-scientist ones are desired but it is clear that they must be of a collaborative type. Agreements which are now being negotiated between India and the United States to reestablish exchanges could well set the pattern for countries which have "graduated" from older relationships.

Another example of the kinds of opportunities that are to be found under this more mature relationship is a "collaborative agricultural research plan" now being

developed by the Pakistan National Agricultural Research Center at Islamabad, Pakistan.

Through assistance from a number of donors, the Government of Pakistan has been able to construct, equip and partially staff a modern agricultural research center that compares favorably with the physical facilities of an international center. While there is need to train more scientists, it is urgent at this time to meld the existing staff into a modern research team. Pakistan needs and is training more staff, but the immediate goal is to move forward with what it has. Their greatest perceived need is for the expert, experienced participation of scientists from abroad who will help develop specific disciplines and form a team.

The Pakistani scientists at NARC propose to establish a "Collaborative Agricultural Research Plan" involving groups of NARC staff with overseas individuals and institutions. They have stated that, "the basis for such a joint venture would be through mutual interest in study of a common problem important to Pakistan and the partner country."

"Partnership in planning, execution, and reporting of research will characterize collaborative research. Exchange of scientists, materials and ideas will be encouraged at the pre-project planning stage as well as during project execution. The research projects would normally be planned and funded for a three-year period and contracted between the Pakistan Agricultural Research Council and the overseas institute/university. Collaborative research requires the research to be, as far as possible, conducted concurrently at NARC and the partner institute/university. Short-term exchange of scientists is favored while opportunity to include graduate thesis research within the plan will be encouraged. Travel funds, additional scientific staff, operations/maintenance and limited equipment budget will be provided."

This proposal, now in the planning stage, reflects the trend of thinking not only in Pakistan but in other developing countries which have or are rapidly acquiring research facilities and staff.

This trend may be strengthened by dissatisfactions with the results being obtained under the project system of technical assistance commonly used in the past. Vernon Ruttan has commented on this recently, pointing out that project orientation has tended to foster dependence on external funding for developing country institutions and has inhibited the growth of internal support. The availability of project assistance from abroad caused the research directors in developing countries to become more adept at cultivating

aid donors than at developing a support base among farmers and government officials at home.

Developing this idea, Ruttan goes on to propose a kind of formula funding under development assistance wherein a developing country research institution would make its own decisions on how the money would be spent. The formula might be based on how successful the national leaders were in gaining internal support. Thus, the higher the level of funding from the internal taxation base, the higher the level of funding from outside assistance. Refinement of these procedures would assure that relatively more funds would go to poor countries with a weaker financial base. A few years ago, these ideas would have appeared entirely unrealistic. They seem less so now. They would certainly alter the role of organizations in the developed countries.

We predict that additional direct involvement of U.S. scientists (as well as those from other developed countries) can be expected from the International Agricultural Research Centers. Some of these centers have since their inception contracted with advanced centers in developed countries to carry out special research for which they had a comparative advantage in staff and facilities. We expect that others will take this route where costs of assembling the necessary staff and facilities for advanced research are prohibitive. At least one of the donors, the Rockefeller Foundation, has accepted this route, in essence, by inviting proposals for research of interest to the developing countries to be carried out at advanced centers in the United States.

While the trend appears definitely towards more selective and limited direct involvement of U.S. scientists in Asian institutions, the same is not true in Africa. Trends suggest that major human resource development efforts in Africa will be linked with involvement of U.S. organizations in "institution building" activities reminiscent of the 1960's in Asia. This time around, it should be possible to do a more efficient job and to provide rewarding experiences on both sides. U.S. universities with established expertise in Africa, with staff already acquainted with problems of the region, and with returned graduates in place will be particularly well positioned to participate in these developments.

All concerned should be aware, however, that attitudes and aspirations are quite different in the developing world than they were a decade or two ago. There is a much more pronounced desire on the part of leaders in the developing countries to want to go ahead on their own terms. Whether they are ready in our view to essentially "go it alone" may not be too relevant. If they deem that the time to set their own agendas is at hand, they will probably proceed

with or without us. It is my perception that relative to their stage of development, this attitude is more pronounced in African countries. Certainly it is strong there and we must be prepared to deal with it. Against this changing world background, however, there will be opportunity to apply lessons learned in Asia and Latin America, particularly with respect to engaging the institution being built directly in the national or regional development activities. Similarly, possibilities can be identified and developed for more effective collaboration between public sector institutions and private sector firms to the end that the latter actively supports and promotes effective approaches to development.

**LOOKING FORWARD TO WORLD AGRICULTURE**  
**THE CHANGING ROLES OF NATIONAL PROGRAMS AND CGIAR CENTERS**

Carlos Valverde  
Representative for Latin America  
International Services for  
National Agricultural Research

Introduction

Let me first of all thank God and praise the scientific community for the successes which have been achieved in recent years and which have brought about the breakthroughs and technological innovations permitting the increase of food production and the reduction of famine in the world.

All of you present today, represent the driving forces behind an important part of this scientific community; I am proud to participate in this important meeting and I have great confidence that the discussions which will take place within this forum will not be another one of only good intentions, but that they will serve to set specific guidelines for constructive thinking and concrete actions which are needed to tackle the challenges of world agriculture in the next decade.

As a researcher from a developing country (LDC), I have had the fortunate opportunity to receive graduate training in this beautiful country and later, as a national agricultural research administrator, I have worked closely within the U.S. university technical assistance environment of North Carolina State University (NCSU) and Title XII, and associated special programs in Peru. Let me take this opportunity to point out that whatever debate takes place pertaining to the outlook of assisting the agriculture

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<sup>1</sup>Senior Research Fellow. International Service for National Agricultural Research (ISNAR). The Hague, Netherlands.

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The opinions and points of view expressed in this paper are those of the author and not necessarily those of ISNAR or persons mentioned.

of the world, the role of the institutions of the developed and developing countries, and the role of the International Agricultural Research Centers (IARCs) of the Consultative Group on International Agricultural Research (CGIAR) system, we should not overlook the fact that the key issues ahead are not limited to the production of new knowledge about a particular commodity or discipline. They are also concerned with the development of the mechanism which permits both the transferability and feedback of the pool of scientific knowledge output from developed countries and IARCs to the national agricultural research systems (NARSs) of developing countries--and vice versa.

There are two essential factors which I would like you to consider:

- 1) The urgent need to develop or strengthen the indigenous scientific community and their institutions (especially in Africa) which constitute a serious handicap for the NARSs to screen and adapt technologies from the international community to their local conditions; and
- 2) The issue of uncertainty of the projected time span of technical assistance from the international programs which usually only lasts a few years rather than the required decades. The challenge is a long-term commitment, even more so in respect to the African continent.

### The Scenario of Developing Countries

So as to determine the nature and possible future participation of the national programs, it is important to visualize globally what will be the scenario within which these programs ought to work. With the exception of a few countries within the developing world, what is the scenario? Most of the countries in Latin America, Africa, and Asia have become importers of grains. Stated in terms of people, "It means that these countries, with the greatest number of mouths to feed, can no longer do so with their own resources and unlike the Soviet Union, they do not have the financial resources to buy what they need." (Orville L. Freeman).

The world-wide economic crisis and rising inflation have caused grain prices to triple and even quadruple in many countries in the last five years. In addition, in many places there has been a continuous price climb of other foods, and in some locations, severe adverse climatic conditions for food production--especially in the Sahel. It was estimated that 500 million people perished worldwide

from malnutrition and starvation between 1972 and 1982 (FAO figures); in the recent Ethiopian drama, the toll is countless.

In terms of supply and demand, the continuous population increase signifies an ever-increasing demand for calories. This pressure is not only in terms of grains but due to income increases and improvements in the living standard of segments of the population, their consumer requirements increase at the same time as their consumer habits diversify. This results in changes in qualitative nutritional patterns toward the consumption pattern of the developed countries. (CIMMYT/IDB/NARS Meeting in Mexico, 1984).

At present, a high proportion of grains which are produced on a world level, serve as food for animals, and this proportion is higher in relation to the quantity of grains which 1.4 billion people living in the so-called low-income countries consume. These circumstances and the continuous increase in the global population (from 3 to 4.5% in LDCs) will continue to contribute to the existence of a strong pressure of demand for grains and other food products in the coming decade. For example, according to the OECD 1984 review, 24 African nations had a requirement of 5.32 million tons of cereal food which had to be imported or sought as food aid.

The level of a 4% annual increase in food production in the developing world which was set as a target in the historical conference of FAO in 1974, has not been attained and the demand for proteins and carbohydrates is constantly increasing; rising food output is barely able to keep up with population growth.

According to the Global 2000 report, a calamitous drop in food per capita is projected by the year 2000 in South, East, and Southeast Asia, poor areas of north Africa, the Middle East, and especially in central Africa. For example, it is projected that central Africa will be more than 20% below the FAO minimum standard.

Other aspects to consider in the scenario for food production are the petrol and energy prices which will have a direct economic impact on agricultural production; and also simultaneously the changes in relation between food production versus energy production. A case at hand is Brazil, where large areas of cropland are being turned into production of fuel (ethanol). These kinds of changes make the projections and tendencies of food production even more complicated.

In the world, there is an accelerating deterioration and loss of resources essential for agriculture--soil erosion

is a vivid example, loss of nutrients, and compactation of soils; increasing salinization of both irrigated land and water used for irrigation; loss of high quality crop land to urban development--a phenomenon which has increased tremendously due to migration of the rural population to urban conditions (Egypt, Brazil, and India are good examples); crop damage due to increasing air and water pollution; soil losses occurring due to reduced fallow periods, cultivation of steep and marginal lands. Reduced vegetative cover is expected to accelerate, especially in north and central Africa, the humid and highlands of Latin America, and much of south Asia.

In most of the LDCs, deterioration of soils is occurring quite rapidly, with an increase in desert-like conditions, especially in drier semi-arid regions. At the same time, heavy erosion in the humid areas is occurring; conditions which are caused by overgrazing, destructive cropping practices, and the increased use of wood plants (forest) for fuel and industrial purposes.

In relation to soil losses due to improper irrigation, about half of the world's irrigated cropland has already been damaged to some degree by salinity, alkalinity and water logging (Peru, Pakistan, India, Senegal are some of the good examples).

Let me say, moreover, that environmental problems caused by irrigation are not only the LDCs' problems. It also occurs in developed and industrialized countries. I vividly recall having seen the effects of this problem some years ago when I had a chance to visit the agricultural research projects being carried out in the San Joaquin and Cochella valleys in California.

Also important to mention is the continuing need to preserve native and wild crop strains as resource materials for plant breeders for improving cultivated varieties.

#### Assumptions Based upon the Scenario of the LDCs

- \* It seems likely that during the next decade rising food prices in many LDCs will be a permanent economic feature.
- \* We should assume that rising yields of food crops in the LDCs will not only depend on the continuous introduction of high-potential producing varieties but that this will run parallel to the adoption of improved irrigation, fertilizers, pesticides and herbicides, which on the other hand are inputs which depend to a large extent on fossil fuels. As previously stated, this means that any escalation

of fossil fuel prices in the future will affect production, raise the price of food production and, as a consequence, may deprive increased numbers of people of adequate food.

- \* While continuing increases in crop yields are clearly possible for many years, there is less certainty about the economic and environmental affordability of technologies that will become necessary to sustain them, especially if degradation of the resource base is not reversed quickly.
- \* There are reasons and worldwide experiences which indicate that soil erosion, deterioration, and losses to desertification will accelerate with increasing numbers of people in the world. Drier regions, and humid regions of Africa, Asia, and Latin America will put more pressure on the land to meet their needs for livestock, range, food and other cropland as well as fuelwood.
- \* Accelerating use of yield-enhancing inputs is expected to raise crop yields especially in the LDCs. These chemical inputs, unless carefully monitored, could cause serious environmental consequences such as destruction of the population of pest predators and increased pest resistance.
- \* Water is a scarce item and with expansion of new areas, there is an increasing need in the future for new technologies which will induce more efficient utilization of water--both irrigation water and rain water.
- \* There is a qualitative change in nutrition patterns towards a higher consumption of animal proteins, fruits, vegetables, vegetable oils, etc., which represents a change in the direction of consumption patterns of many developing countries.

#### Restrictions for Setting Future Trends of the National Research Programs

In accordance with the scenario described above and taking into consideration that the level of development of the national programs will continue to be variable and that some will still be in their first stages of development, the obvious question is what are the areas or things that the national programs can and should do better than the IARCs and/or developed countries and what are those that could be improved by an international research system.

I will attempt to offer more than a definitive answer with thoughts about some of the options for the future. These ideas are derived from my experience, conversations with my colleagues at ISNAR (H.K. Jain and R. Devred, among others), and in the understanding that the following restrictions exist:

- \* It is complex and difficult to determine the core research problems and research priorities, and to a lesser extent, to divide responsibilities, in a global context. I believe that we are still far from having obtained all the elements and indicators necessary for accomplishing this task. Priorities should be defined from within the countries and not imposed from outside.
- \* By its own nature, agricultural research is site-specific or location-specific and must emerge as a result of in-depth studies at the field/producers' level, taking into account that the farmer is its main recipient and producer.
- \* The dimension, heterogeneity, and diversity of surroundings and conditions in which research activities are carried out at the national level are not always comparable. One should consider the variables which exist in terms of history, ethnic background, religion, politics, social, economic, technical and scientific factors which interact in different degrees and intensities in each of the LDCs.
- \* Compared to the international centers of the CGIAR system and the developed countries, the NARS of the developing countries have not yet achieved the degree of organizational maturity necessary to allow them to speak as a group; the attempt to consolidate this type of forum of the NARS is still evolving since the Bellagio Declaration in 1974 which created the International Federation of Agricultural Research Systems for Development (IFARD).

### The Future Challenge of National Agricultural Research in the LDCs

The role which the national programs should play in the coming decade should branch in three directions:

- \* Obtain by all the necessary means, the technical assistance of the CGIAR network and the developed countries for institutional improvement and development (institutional buildup).

- \* Develop the capability at country level to selectively determine the areas of action where they have a comparative advantage, taking into account the pool of knowledge and the stock of production technology that exists within the international programs of the IARCs and developed countries, and private institutions (areas of action).
- \* Promote the establishment of agroecological regional research network mechanisms to enhance technical assistance, both country to country and from the international community (networking).

### Institutional Buildup

Let us start with the institutional buildup which, according to my own experience, is basic and instrumental to any other future activity. Without meaning to exaggerate, institutional development is the main limiting factor in many LDCs for technological innovation to take place, as well as the creation of the environment for an effective and efficient interaction with the international pool of knowledge.

It is appropriate at this time to emphasize that the main component necessary for the transfer of technology to be made from the IARCs or developed countries, is the existence of a national capacity capable of adapting these technologies to the socioeconomic and agroecological conditions of their countries and farmers.

Fortunately, the creation of institutions specialized in strengthening the national agricultural research capacity of the developing countries have emerged already such as the International Service for National Agricultural Research (ISNAR), and the International Agricultural Development Service (IADS), and, within the developed countries, the Tital XII-CRSPs. It is precisely through the experience gained in 28 countries during the period 1980-84, that ISNAR has been able to identify the existence of a series of basic requirements to enable a national research system to work in an efficient and effective manner, not only at the national level but also to facilitate its interaction with the outside scientific world--IARCs, developed countries, and other private and public institutions. These basic requirements include:

- " \* an appropriate policy environment providing the necessary resources and incentives for research to take place and for technologies to be adopted,
- \* an organizational structure which properly reflects a country's characteristics and resources,

- \* a set of effective operational processes with which to develop and implement the necessary research programs."

In working to promote these desirable characteristics, a standard procedure cannot be used in all countries since in some cases structural changes are needed. In others, it is possible to work within the existing structure to improve some of the essential processes in a research system such as planning and programming, monitoring and evaluation, or human resource management. (W.K. Gamble et al.)<sup>1</sup>

In most of the LDCs, for example, the emphasis on increasing scientific and managerial capacity for agricultural research for development has been inadequate, and in Africa scarce, to the point that a recent paper from the World Bank in relation to Africa indicates that "the need for university expansion in the 1960s was overwhelming when one considers that in 1961 the output of locally trained university graduates in Kenya, Tanzania and Uganda was 99 for the combined population of 23 million in the three countries." At the scientific level, the problem was even more acute; in 1964, there were only three African scientists working in research stations in Kenya, Uganda, and Tanzania.

Carl K. Eicher, the author of the above-referenced World Bank paper, concludes that "due to the massive shortfall in scientists, teachers, and managers, Africa is the continent of technical assistance par excellence and that because of the shortage of African scientists and managers, major donors continue to send large numbers of students overseas for post-graduate training in agriculture, and that a surprisingly small percentage of African students studying agriculture in Europe and North America return to Africa for their thesis research."

The same could be said for the cases of Asia and Latin America, although to a lesser degree. The retraction of most donors from primary and university-level education by 1970 (mainly from Latin America and Asia), contributed to decrease the academic and research capacity of both continents. The Title XII strengthening program in the scientific fields and the ISNAR effort in the management side are trying to fulfill the gap, however, their efforts are very limited in relation to the dimension of the problem

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<sup>1</sup>A full discussion of this is found in "Considerations for the Development of National Agricultural Research Capacities in Support of Agricultural Development". 1984. ISNAR. The Hague, Netherlands.

worldwide. Within the institutional buildup, there is clearly a message about the future role of the developed countries and the CGIAR system--this is to help the LDCs to strengthen their institutions and scientific capabilities. ISNAR, IADS, and Title XII should play an important role in the years ahead.

There are at least three main areas of concern:

- \* to increase the scientific and managerial capacity for agricultural development, especially research,
- \* to develop local analytical capability for policy analysis, and
- \* to put emphasis on higher level training to strengthen the indigenous scientific community.

### Areas of Action

Concerning the national programs, and without trying to be exhaustive, we should assume that within the overall process of invention and distribution of a technological innovation (see Chart No. 1), most, if not all, of the national programs of the LDCs were created with a mandate to work mainly in either applied and/or adaptive research, technology verification, and diffusion--some institutions also perform the extension activities.

However, in practice, the intensive process of modernization and technological innovation and the complexity of the production problems at the farmer level especially in the tropics, indicate that it is not always easy to draw a line to specify where the most urgent problems to be solved are and which need upstream research. Although a good part of this research is done by institutions and universities in the developed countries and some is done by the international centers of the CGIAR system, there is an increasing need for basic research for the development of specific technologies for developing countries. The universities of developing countries should be strengthened to fulfill the increasing demand from the national programs of the public sector.

I have found myself many times in these kinds of situations, and these experiences have made it clear to me the complex environment under which national research systems have to work.

There are many basic constraints which impede increased agricultural production and which are not necessarily international in nature, but which are of extreme importance within the national boundaries.

Chart No. 1: Functional Process and Product of a Technological Innovation\*

<u>Function</u>	<u>Product</u>	<u>CGIAR</u>	<u>NAP</u>	<u>DCRI</u>	<u>PSR</u>
Basic or fundamental research	Knowledge with unknown or unspecified utility	(x)		x	(x)
Strategic research	Development of practical uses of knowledge	x	(x)	x	x
Applied research	Product and technology development	x	x	x	x
Adaptative research	Adaptation of technologies and products to specific conditions or situations		x	x	x
Technology Verification	Demonstration of practical use under real production conditions		x	x	x
Diffusion & extension	Diffusion of technologies to final users		x	x	x

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\*Source: CGIAR/McDermott

CGIAR = Consultative Group for International Agriculture Research  
(IBPGR, IFPRI, and ISNAR are not included)

NAP = National Agricultural Programs

DCRI = Developed Country Research Institutions

PSR = Private Sector Research

( ) = Under joint venture and/or contractual basis with other institutions

Agricultural technology has a high degree of location specificity, and it is recognized that, in most cases, new technology from abroad does not match the conditions of the country and local farmers.

In relation to basic production constraints, since the CGIAR system is basically concentrated on food crops with emphasis on the improvement of plants and their adaptation to different productive systems, the concern has always existed as to who is helping the research on soils and water, and the research which should maintain and improve the quality of pest control management systems. One also recognizes the need for research to sustain agriculture--which in many cases is not necessarily maximization of yield but rather its long-term stabilization, especially in fragile environments of the developing world.

Irrigation and rainfed farming are without a doubt, areas where research constraints have not been sufficiently addressed in a historical context. Irrigation plays an insignificant role in sub-Saharan Africa, except for the large-scale projects in the Sudan and in Madagascar where there is a history of irrigation by small farmers; in India, 30% of the cropland is under irrigation.

Irrigation is important in most developing countries. Irrigation projects exist in the river valleys of Asia, Latin America--and in Africa. How many people actually realize that extensive irrigation systems exist in the river valleys of Zimbabwe, Somalia, Ethiopia, and Mozambique, and on a more minor scale in Mali, Senegal, and northern Nigeria? As noted above, Sudan and Madagascar have large areas of small farmers' land under irrigation. In the rainfed areas, there is limited research in relation to the genetic performance of the new material under water stress, plant material selection under water stress, drought resistance or adapted indigenous food crops.

There are potential research areas in relation to water usage and topics which need to be carried out by the national programs such as application and efficiency of the water base or real soil water content as related to the genetic performance of the new genetic materials generated by the IARCs and/or Title XII commodity programs; a kind of downstream research such as mulching, cover management, minimum tillage, drip irrigation.

There are other areas of concern at the national level which need to be addressed because of their importance in much of the developing world. These include complex problems with perennial crops, vegetables in the tropics, indigenous new crops, post-harvest technology and the livestock component within the overall agricultural production.

In many cases, research needs to move from narrow disciplinary interest--such as supply/response studies--to problem-solving research under field conditions such as the CRSP-SR which is performing quite well.

It is my conviction that in the years to come, the national programs should place more attention on the issue of basic production constraints with very strong emphasis placed on looking for joint partnership, with the developed countries as well as the IARCs (especially ISNAR) acting in partnership.

#### Particular Areas of Agricultural Production on which National Programs should place Emphasis in the next Decade

Taking into account the restrictions for setting global future trends and especially the fact that agricultural technology has a high degree of location specificity, the national outlook on some future common problems of agricultural research are indicated selectively under the following headings:

##### Management of High Genetic Potential of Crop Yield

While there have been significant improvements in the yields of selected crops--particularly with food crops--the breakthroughs in food crop technology are indeed as a result of efforts made by the CGIAR system to improve the genetic potential of food crops. It is evident that the CGIAR system has a strong comparative advantage in the area of global germ plasm collection, its preservation, manipulation and distribution. Its capacity to test genetic material in a vast range of environments and ecological conditions is superior to that which a particular national program can offer, even in research systems as large as those which exist in the U.S.A., China, and India. The resources and facilities to carry this out are readily available at the international centers, a convenience which is not always at hand at the national level where scientists must work under severe operating constraints.

In the years ahead, I believe that the CGIAR system and developed countries should help to create within the developing countries the critical mass and competence to prevent the loss of the genetic diversity of local strains and wild progenitors of food crops which should be included in the make-up of their new varieties. There is the potential danger that the monoculture of homogeneous crops which have a narrow gene base without such local genetic diversity could lead to greater risks of massive crop failures due to many causes--principally diseases and insect populations, as well as soil acidity, nutrient

depletion, inefficient use of water and energy.\*

The International Centers (for the crops they are working with) and developed countries should continue to provide and expand gene components (certain characteristics) to national local plant breeding programs to avoid the tendency of reducing genetic diversity.

### Management of Soil Resources

At present, only one-half of the world's arable land is actually being farmed--the potential is there. The key question is where and how increased production can take place. Unfortunately, the unfarmed arable land is located in tropical areas where population growth is taking place at high rates, and where the majority of the planet's people now live. The bulk of future increases in world food supply will have to originate in the tropical developing countries.

Bringing new and often marginal lands into production requires new technology. Research has to move from fertile soils to agroecological regions with serious soil and climatic constraints, such as is the case of the humid tropics, the semi-arid tropics, the acid savannahs, the tropical wetlands, and the steplands of the world.

Although two of the IARCs--IITA and CIAT--work in agroecological zones in which acid tropical soils occur, there is presently no coordinated international effort to alleviate the soil constraints to world food production. Title XII, TropSoils-CRSP of the U.S. foreign assistance which is going into its fourth year, and the newly-created International Board for Soil Research and Management (IBSRAM) are involved in this area.

The Title XII TropSoils-CRSP of the U.S. university aid system has emerged as a result of the increasing need of having an institution to deal with the soil constraints which limit food production.

My personal opinion is that the TropSoils-CRSP based upon the dimension of the soil management problems is restricted to a certain degree by limited resources and is working only in acid soil of the humid tropics and semi-arid tropics in Africa (Niger, Mali, and Cameroon).

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\*Vivid examples are those of wheat in Mexico and Pakistan, and sugar and tobacco in Cuba.

In terms of the other centers, work should be directed to have at least the capacity to characterize the soil conditions under which the genetic material is performing a potential collaboration with the Title XII TropSoils-CRSP; and IBSRAM should be envisaged in approaching the national programs of the world.

### Management of Water Resources

The importance of water as a vital production factor is not questionable. What is questionable and what needs to be carefully thought out is the future research agenda of responsibilities for research on water management.

Water management research is needed to adapt many of the techniques which are developed in temperate regions by the developed countries for growing crops under tropical conditions.

Seen in its entirety, water management is a complex issue and one needs to look at the interrelation of different processes which are closely related in the production of croplands. We should, therefore, be looking more in terms of soil/water/plant relationships rather than at isolated components.

In the area of water, for example, the management of irrigated farming which is clearly managed by individuals has very strong linkages between the decisions that the farmers can make in relation to their farming practices--land preparation techniques, cropping patterns, use of fertilizers, and the characteristics of the irrigation practice adopted.

In many LDCs, there are issues related to watershed management which have long-term importance in the stability of the water usage, not only for the irrigation practices based on storage reservoirs but also for those based upon river systems.

Allow me to say that the so-called biological component of water management needs to be properly addressed. These issues include what types of crops can be grown under stress conditions, such as drought, salinity, alkalinity as well as other issues relating to abnormal conditions such as water logging.

The International Irrigation Management Institute (IIMI) in Sri Lanka--which is not within the CGIAR system--was established last year with the main idea of strengthening national capacities worldwide and to improve irrigation performance through better management of irrigation systems.

The challenge for IIMI will be to have research which involves the development of procedures (research methodologies) to answer questions which are important to many countries; those which are mainly of multidisciplinary nature and require substantial amounts of field data.

Water management research is extremely costly and many LDC research institutions are not in the position to develop the necessary infrastructure, facilities, and manpower. There is a need to develop a critical mass; improved and practical methodologies for field research, more general strategies for data collection, and useful taxonomy of water usage.

### Management of Pests

When we take into account that most of the developing countries are in the sub-tropical and tropical belt and that the agriculture in these types of environments have a greater incidence of disease than in the temperate or cold regions, we have to assume that the use of pesticides is inevitable. We should also realize, however, that the problem is not so much with regard to the widespread use of chemical pesticides but in the sense that their use may be indiscriminate and incorrect to the point of causing environmental pollution.

Our present production technology of agriculture using chemicals was evolved during a period when fossil fuels and other chemicals were cheap, abundant and readily available.

The question is being asked whether agricultural scientists can develop new techniques of crop production which will not be so energy intensive and will minimize environmental pollution. The research of the national programs should direct their efforts to developing integrated pest control techniques using biological and agronomic practices as much as possible to reduce to a minimum the use of chemical pesticides.

There are good examples of successes in the area of integrated pest control in many commercial crops such as cotton and sugar cane, and emphasis should be placed in developing such techniques in the production of food crops.

I believe that this is an area where the developed world and the private sector have a comparative advantage to carry out most of the basic and strategic research, as well as the services which are needed at national levels.

## Biotechnology

Techniques and products resulting from developments in biotechnology will have a range of agricultural applications. In plant production, tissue culture and genetic manipulation have already speeded up traditional plant-breeding techniques and increased the potential breeding process.

Techniques to deal with genes at the molecular level are well advanced, and in the longer term, multiple genes--such as those providing stable disease resistance--will be moved into crop plants in dealing with genes for the identification of those which control protein quality, and quantity will permit to manipulate crop quality and quantity.

In the field of animal husbandry, it already has resulted in advances in breeding techniques to allow selection and reproduction at a much faster rate.

Recombinant DNA techniques also have led to the engineering of cells that produce vaccines, economic production of hormones such as animal growth hormones.

The applications of biotechnology have the potential for vast improvements in the food-producing capacity of developing countries even on a small-scale basis.

Biotechnology as an alternative in the next decade is a reality. The development of indigenous capabilities should be a priority, principally in the development and handling of cell and tissue culture. It is vital, in this respect, that realistic approaches should be adopted to provide adequate countervailing power, particularly in regard to the transnational corporations. The role of the CGIAR system in this process will be important, especially in those areas that are important to the LDCs and where the LDC cannot afford and developed countries are not interested.

Biotechnology is being developed overwhelmingly in industrialized countries, and primarily by corporations in those countries, in such a way that the control is being moved from out of the public domain into the hands of private individuals or corporations. Privatization of this area could inevitably create problems of access.

At present, biotechnology is being developed in a highly competitive atmosphere and there are already countries --notably Argentina, Brazil, India, Thailand, and the

Philippines--which have given high priority to developing their own national capabilities in biotechnology. The increasing interest in the Third World for biotechnology has brought about the formation of the International Center for Genetic Engineering and Biotechnology.

### Research with a Farming Systems Perspective

Agricultural development in the LDC countries is having to deal more and more with difficult physical and ecological conditions. The concept of research with a farming systems perspective is being increasingly used as a way of improving the effectiveness of the research programs.

This perspective offers an avenue for making research significantly more effective in generating and delivering appropriate technologies, especially to farmers of LDCs.

In the next decade, national programs should increase their capacity of technology generation with a farming systems perspective so that all farmers' activities are analyzed and included in the process of technological innovations.

There are positive advantages of the multidisciplinary approach at the farmer level, since it is mainly concerned with downstream applied research issues and with ways of ensuring that there are effective linkages to upstream (basic) research institutions.

Most of the International Centers -- CIMMYT, ICRISAT, IRRI, IITA, CIAT, CIP, and ICARDA -- have developed research programs on farming systems, although concentrating on specific crops with which they are concerned and not really looking at the complete system of a farmer which, in many cases, involves a variety of food crops and a mix of food and commercial crops, agroforestry systems, or agrosilvopastoral systems. These are particularly under the African conditions where the agrarian structures are different; and in general, in the humid tropics and steplands of the world. I believe that the comparative advantage of the CGIAR system in the farming system is in the area of methodology design; the development side should be left to the national programs.

There are additional options or areas of concern where the national programs have a comparative advantage to carry out the research that has to be worked out for the countries, regions, and continents. IFARD, for example, has held meetings at continental level--Latin America and the Caribbean, Africa, and Asia--to discuss the relationship of the CGIAR

and NARS. Appendix 1 transcribes the final recommendations of the meeting of the IFARD-Africa chapter held in Ibadan, Nigeria in 1984. However, the purpose of this paper was not to be exhaustive but rather to bring forward thoughts for discussion to anticipate the future role of the national programs. I leave then from mentioning only management of animal production; fish and fishery aquaculture resource management, agroforestry, post-harvest research, and socio-economic research.

### Networking

In the years to come, more attention should be given by the NARS to the promotion and development of regional collaborative agricultural research networks. There are convincing experiences in favor of the successes of networking in those cases where the countries are small and can not afford to have a full-fledged research program. Networking is also relevant in the case of countries which lie in the same agroecological zone, grow similar crops, and also have similar problems. Even though the political setting and government policies may differ from country to country, the scientific approach to solve the production problems will be quite similar or similar more so in the upstream research type of activity.

The potato research network (PRECODEPA) in Central America is a good example of the first CIP-led network, where there is a sharing of responsibility for developing the technology needed for potato production in the region.

Networking of this kind not only facilitates the development and buildup of the national programs involved, but creates confidence and mutual benefit, and above all, self-reliance within the researcher.

Collectively, the countries are able to more efficiently utilize the flow of basic or strategic research information available from the CGIAR system and developed country, and facilitate training programs. There is no intention to be exhaustive in the approach, just to mention that networking should be given more attention by the national programs to establish comprehensive regional integrated research programs.

In establishing networks, national programs should consider as a minimum that when joining a network, they incur some obligations as well as benefits--the willingness and attitude of giving and receiving is the true spirit of a network participant.

## Final Remarks

As final remarks, I would like to stress two points.

First, it seems to be ironic that while financial resources may have been limited during the last decade to find new developments and agricultural breakthroughs to meet the global and continental food needs, we have to recognize that in many instances, the primary problem is lack of coordination and that it is relatively even more critical in the international arena than we used to think it is in the national level. Technical assistance and donor agencies need to integrate their collective activities better in order to avoid duplication, even competition.

Second, in thinking about the changing role of the CGIAR and national programs of developed and developing countries in the next decade, we should remember the following:

- 1) that, most of the time, modern technology tends to forget about subsistence agriculture and, to a certain degree, tends to separate the subsistence farmer from their precious land from which they draw their livelihood. The application of the theory of comparative advantage has to be carefully thought out since it is an economic doctrine which can not always be applied successfully to the level of the farmer--in particular, the poor farmer of the developing countries, and
- 2) that concentration and focus on the situation of the small farmer is the key to success in increasing productivity in the majority of the poorest countries around the world and the key alternative which will help to alleviate world famine.

At the IFARD-Africa meeting held from June 6-10, 1984 at the International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria, which was attended by NARS leaders of most of the African countries, it was recommended that:

- 1) the IARCs should concentrate their efforts on problems which have international significance such as "maintenance of germ plasm preservation and exchange between the IARCs and NARSs, and collection of local varieties of various plants and their preservations at the IARCs where storage facilities are available,

- 2) work in biological control and other research requiring specialized equipment, for example, physiology, virology, nitrogen fixation, should be done at the IARCs and results made available to NARSs; cooperation in farming systems research between the IARC and NARS should be strengthened, and
- 3) in the area of training, the IARCs should help the NARSs reinforce their scientific and technical capability through training; NARSs should identify and communicate their training needs to the IARCs".

Specifically in reference to IITA, the African leaders requested that the centers should strengthen regional training activities, exchange of information with the countries, and finally made a plea for IITA to increase emphasis on degree-related training for African countries.

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**THE MEMORANDUM OF UNDERSTANDING INITIATIVE AND**  
**ANALYSES OF PROJECTED NEEDS FOR TECHNICAL**  
**ASSISTANCE FOR TITLE XII PROJECTS**

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I appreciate this opportunity to share with you the status of the Memoranda of Understanding/Program Support Grant Initiative. We are currently in the process of making several policy decisions with regard to its size and character. As you all know well, this has been a long and sometimes frustrating process for all concerned. Rather than speculating with you about what the precise shape the program might be a year from now, I intend to focus my remarks on the current status of the MOU/PSG initiative, and preliminary results of the demand profile for technical assistance from Title XII Universities which we are in the process of completing. This study is relevant to the MOU/PSG program, because it will shape current MOUs as well as help define any additional future MOUs with you.

Current Status of MOUs

As most of you know, we currently have five single institution MOU's in place. We recently held annual reviews of activities carried out by these universities. Their MOU's and accompanying Program Support Grants may be modified somewhat as a result of these reviews. This exercise was instructive because it highlighted several important aspects of the program which I take this opportunity to share with you.

- 1) First, let me stress the positive conclusion that the five universities have used their Program Support Grants to enhance their performance on overseas contracts. Examples include:
  - A) use of this program to finance overseas graduate student research which is directly in support of ongoing contracts, and
  - B) the provision of language training and overseas orientation to potential consultants to ongoing A.I.D. contracts. The Report by A.I.D.'s Inspector General (IG) on the Strengthening Grant Program emphasized the need for this

relationship between expenditures and A.I.D. projects.

- 2) A second important conclusion is that entering into an MOU is no guarantee of winning contracts. The Federal Office of Management and the Budget has recently provided additional instructions regarding the need to enhance the competitive contracting environment. Special relationships with universities and other contractors must not infringe on this competitive environment unless mandated by law. Over the last year, MOU universities were unsuccessful on several bids they submitted for contracts.
- 3) Another factor which became apparent in the reviews is that the universities did not necessarily restrict themselves to high demand subject matter areas. Several had chosen subject matter areas which preliminary analyses of the A.I.D. demand profile indicate to be areas of low projected need for technical assistance. Furthermore, several universities had selected areas in which they currently have no A.I.D. business. These are being adjusted.
- 4) Two other aspects of the MOU/PSG and Strengthening Grant Programs probably need additional attention. These are also factors that were considered in the IG Report on the Strengthening Grant Program. The first is the need to demonstrate clearly in Annual Reports and Annual Work Plans the relationship among objectives, activities, A.I.D.'s overseas projects and expenditures of funds. Annual reports are the major instruments available for evaluating performance. They must clearly indicate these relationships. The second is the need to treat matching funds no differently than A.I.D.'s grant funds. Both are equally legitimate and important; therefore, expenditures of both must be for activities listed in the Annual Work Plan that enhance program objectives.
- 5) Finally, the reviews were also used to discuss the probable need for changing some of the provisions of both existing and future MOUs. Perhaps the most important of these is the basis for determining the size of the Program Support Grant. The Agency is leaning towards a formula which, while giving some weight to volume of Title XII business with A.I.D., will also give weight to "Full-Time Equivalents" (FTEs) of regular faculty or staff provided by a university to A.I.D.'s overseas

programs. A.I.D.'s greatest immediate need is for capable university faculty to provide overseas technical assistance. We believe it is therefore appropriate that Program Support Grant funds bear some relationship to a university's commitment of regular employees to A.I.D.-supported overseas programs.

We also discussed the need to consider short term as well as long term overseas assignments as a basis for awarding Program Support Grants. The threshold for eligibility for entering into MOUs with their accompanying support grants will probably reflect the need for this consideration.

The IG audit of the Strengthening Grant program emphasized the need to relate support grant activities to ongoing and immediately foreseeable contract activities. In the future, we will probably require that universities with MOUs show a demonstratable relationship between at least 50% of their support grant expenditures and their ongoing and immediately foreseeable contract activities.

We have now signed two joint MOUs with Title XII universities. One pair has the accompanying support grants in place and one does not. We are currently negotiating the support grants with the latter pair.

We are in the process of negotiating additional joint MOUs with nine other pairs of universities, and anticipate doing so with one additional pair. There are several reasons for these joint MOUs. The most immediate reason is that the Agency has received mandates from the Executive Branch (Executive Order 12320) and the Legislative Branch (Gray Amendment to the Continuing Resolution which authorizes funding for the Agency) of the Federal Government to involve more fully minority institutions. A second, yet equally important reason, is that the Agency is creating mechanisms which will allow easier access to the resources of the 1890 land grant universities for its overseas program.

We are also initiating joint MOUs in the public health area, building on experiences with programs that we have put in place with Title XII universities.

We plan to put these joint MOUs in place before considering the possibility of any additional MOUs.

#### Projected Use of Technical Assistance for Title XII Projects:

I would like at this point to shift gears and move on to the preliminary results from the demand profile study. As most of you know, this study was in response to a

recommendation made in the IG report of the audit of the Strengthening Grant Program.

An important caveat should be borne in mind in interpreting the data, namely, that data reflect the projected use of technical assistance rather than actual need. Data are based on analyses of existing and soon to be created projects from the field missions and the technical assistance incorporated into them. These projects may not represent accurately all development constraints.

The study was initiated using the 1981 baseline data on all technical assistance provided for Title XII projects in that fiscal year. These data were broken down by academic discipline and geographical region. The study consisted of the following steps:

- 1) Regional bureaus were asked to provide a list of substantive areas addressed by projects that are defined as being entirely or in part Title XII projects. The emphasis on problem areas is important because A.I.D. is organized by geographical regions and problem areas. Process flows from this organization.\* Inputs from the regional bureaus were synthesized into 29 subject matter areas.
- 2) Using the baseline 1981 data, regional bureaus projected needs for long term and short term technical assistance for each problem area in 1985 and 1990. These data suggested the mix of inputs by academic disciplines required for each problem area, and by inference, the need for interdisciplinary efforts in addressing them.
- 3) Regional bureaus also provided data on the types of technical assistance required from the consultants for each problem area and for each geographical region.
- 4) These data were condensed into tables showing the projected use of long term and short term technical assistance by disciplines, by problem areas and by geographical regions; the mix of inputs from different academic disciplines required for each problem area by geographical region; and the type of technical assistance required for each problem area.

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\* On the other hand, universities are organized by academic disciplines and most activities are determined by them.

Let me now turn to the preliminary results. I emphasize their preliminary nature because regional bureaus are still refining their estimates. At least one has been in contact with field missions to check the reliability of their estimates. Furthermore, we are discussing the accuracy of these projections in light of recent policy decisions concerning research and institution building initiatives, particularly in Africa. We expect to share these data with you and the Inspector General in finished form later this summer. Several general trends are evident in the data.

- \* There is a projected decrease in the use of long term technical assistance.
- \* There is a projected proportional increase in the use of short term technical assistance.
- \* There is a projected decline in the use of technical assistance by country missions associated with the bureau for Africa.
- \* There is a higher steady projected use of technical assistance in the plant production and natural resources areas.
- \* The type of technical assistance for which there is greatest projected use is project development. This category excludes research, policy dialogue and institution building efforts.

Let us now turn to the tables.

Table 1 presents the past (Hansen, 1984) and projected use of long term technical assistance by disciplines. The grand totals indicate a decline of about 25% during the present decade from 721 to 532 long term assignments. However, the declining trend is not universal among disciplines. Plant sciences and natural resources disciplines experience an increase. This in part reflects the increasing concern with absolute declines in food production per capita in the subsaharan region of Africa, (ERS, 1981; World Bank, 1981) and the deterioration of the world's natural resource base (Global 2,000 Report, 1980). The disciplines in highest demand are agricultural economics, those dealing with renewable resources, and agronomy. Inputs by economists are important for establishing policy as well as assessing the economic impacts of conservation and agricultural production programs.

Looking at the regional bureau columns, we note a decline for all regions, except Latin America and the Caribbean. The increase from 1985 to 1990 in the latter region is explained mostly by recent major expansions of assistance in Central America and in the Caribbean.

The projected decline for Africa is the net result of several factors. I would like to leave the complex task of interpreting them to my Africa Bureau colleague, Keith Sherper. However, I would like to emphasize two additional points. First, the projected use of long term technical assistance in Africa is still greater than for any other geographical region. Second, with respect to the supply side, the greatest shortage is of university faculty who are knowledgeable of and prepared to work in Africa, particularly in the francophone countries.

Table 2 presents the projected short term use of professionals in Title XII projects. These inputs are projected to increase by about 15% from 751 to 880 assignments. Only three disciplinary areas (which also show a marked decline for long-term requirements) are projected to decrease: aquaculture, social sciences, and food/home/nutrition sciences. Similar to long term assistance trends, the largest increases are projected for natural resources. Turning to total demand, the disciplines highest in demand are the same as for long term assistance, namely, agricultural economics, agronomy, and natural resources. All bureaus project a substantial increase in use, except Africa. The explanations for the decline in projected use of long term assistance in Africa are equally applicable to short term assistance. Asia and the Latin America/Caribbean regions project the greatest increase in use of short term assistance. University participation in technical assistance efforts in Asia are likely to be mostly short term in nature.

**Table 1: Projected Long Term Technical Assistance Use by Academic Discipline and by Region.**

Discipline	Africa			Asia			Latin America Caribbean			Near East			Total		
	1981	1985	1990	1981	1985	1990	1981	1985	1990	1981	1985	1990	1981	1985	1990
- Agronomy	27	30	35	11	13	9	10	10	13	9	6	8	57	59	65
- Plant Science	18	18	17	14	6	5	6	8	9	4	2	3	42	34	34
- Horticulture	02	1	2	2	1	1	2	5	8	2	8	4	9	15	15
- Animal & Vet Science	21	11	3	6	2	5	9	8	8	2	6	4	38	17	20
- Soil Science	10	5	5	5	7	3	17	12	13	5	2	2	37	26	23
- Range Science	9	4	2	--	2	1	1	1	2	1	2	1	11	9	6
- Forestry/Renewable Energy/Natural Resources	55	69	50	23	11	18	10	14	19	3	2	5	91	96	90
- Aquatic Science	1	2	2	7	3	1	8	4	4	2	1	--	18	10	7
- Agricultural Engineering	10	4	5	6	11	9	3	5	7	8	8	5	27	28	26
- Food/Home/Nutrition Sciences	9	3	--	7	1	2	4	3	3	4	--	--	24	7	5
- Ag Economics/Statistics	68	58	49	26	16	12	38	32	34	13	5	12	145	111	107
- Other Social Sciences	23	16	8	14	4	3	11	8	7	3	2	1	51	30	19
- Ag Education/Extension	25	12	5	6	5	4	7	7	9	4	4	18	42	28	28
- Administration	15	10	9	9	7	5	9	9	7	5	6	3	38	32	24
- Other*	<u>33</u>	<u>27</u>	<u>12</u>	<u>26</u>	<u>23</u>	<u>20</u>	<u>26</u>	<u>21</u>	<u>21</u>	<u>7</u>	<u>9</u>	<u>8</u>	<u>94</u>	<u>80</u>	<u>61</u>
<b>Total</b>	<b>324</b>	<b>270</b>	<b>204</b>	<b>162</b>	<b>112</b>	<b>93</b>	<b>161</b>	<b>147</b>	<b>164</b>	<b>72</b>	<b>63</b>	<b>66</b>	<b>724</b>	<b>592</b>	<b>532</b>

\*Other\* includes low demand disciplines such as entomology, and several categories for which several disciplines may be accessed such as research analysts, training specialists, information specialists, and rural development specialists.

Asia, in part because of the success of previous University projects, has a good infrastructure in higher agricultural education and research. It has a cadre of trained professionals who are capable of handling their teaching and research programs. These professionals, however, appreciate and will solicit specialized short term inputs from the U.S.

Let me turn now to the following tables which describe the projected use of technical assistance inputs by problem topics. These were synthesized into twenty-nine topics. Table 3 presents these trends for long term assistance. The total column indicates area in which an increase is expected in 1990 as well as whether or not use in 1985 is high or low. High was defined as above the average number of assignments projected for the different problem topics and low was defined as below the average.

Consistent with the trends by disciplines, most areas are expected to experience a decline in need for long term assistance. The only exceptions are the natural resource conservation and management areas in which projected use is constant from 1985 to 1990. However, it is worth noting that projected use of long term assistance for these projects increases in the Latin America/Caribbean region, and that the projected use of long term inputs by production agriculturalists remains stable for this region. Also noteworthy is the projected increase in use of long term technical assistance for energy related projects in this region.

Data on the projected use of short term technical assistance by types of projects are presented in Table 4. The results parallel those for projected use of long term assistance. There is no measurable change projected for most areas from 1985 to 1990. Of the areas with projected increases, only nonarid lands livestock production is unrelated to the crop production and natural resource/energy areas. Perhaps of greatest significance is that the projected use of short term technical assistance in these domains, with the exception of farming systems, is on the rise for the Latin America/Caribbean region.

Table 5 relates the disciplinary mix projected for projects to the crop production and natural resource problem topics as well as to regions. I have selected these two problem topics because they represent high levels of usage of technical assistance. The disciplinary mixes indicated by the regional bureaus for all problem topics will be included in the Proceedings from this Conference. This table clearly illustrates that no one discipline dominates any given problem topic with the possible exception of forestry. We have probably done an injustice to forestry

**Table 2: Projected Short Term Technical Assistance Use by Academic Discipline and by Region.**

Discipline	Africa			Asia			Latin America/ Caribbean			Near East			Total		
	1981	1985	1990	1981	1985	1990	1981	1985	1990	1981	1985	1990	1981	1985	1990
- Agronomy	20	25	25	12	23	24	11	16	21	9	27	14	60	91	84
- Plant Science	20	12	10	14	18	15	7	13	18	5	2	5	46	45	48
- Horticulture	--	3	4	2	4	4	3	8	13	3	19	4	11	34	25
- Animal & Vet Science	21	10	6	7	13	12	9	9	12	2	10	11	39	42	41
- Aquatic Science	2	3	3	8	9	9	8	5	5	3	1	--	21	18	17
- Agricultural Engineering	10	7	8	6	27	25	4	7	12	9	14	21	29	55	66
- Soil Science	11	6	6	5	15	15	10	16	17	5	5	3	39	42	41
- Range Science	9	3	5	--	2	4	1	2	4	1	3	4	11	12	17
- Forestry/Renewable Energy/Natural Resources	24	33	22	23	55	60	13	23	30	4	6	6	64	117	118
- Food/Home/Nutrition Sciences	10	4	2	8	7	7	6	6	7	5	--	--	29	17	16
- Agr Economics/Statistics	74	65	53	28	24	25	41	47	50	13	22	20	156	158	148
- Other Social Sciences	25	17	10	15	13	11	11	13	12	4	8	1	55	51	34
- Ag Extension/Education/	27	12	7	7	15	15	8	11	14	4	19	20	46	57	56
- Administration	17	12	10	10	13	12	9	13	12	6	6	6	42	44	40
- Other*	<u>36</u>	<u>26</u>	<u>11</u>	<u>30</u>	<u>64</u>	<u>67</u>	<u>31</u>	<u>32</u>	<u>32</u>	<u>9</u>	<u>17</u>	<u>19</u>	<u>106</u>	<u>132</u>	<u>129</u>
<b>Total</b>	<b>317</b>	<b>240</b>	<b>182</b>	<b>175</b>	<b>302</b>	<b>305</b>	<b>180</b>	<b>221</b>	<b>259</b>	<b>82</b>	<b>159</b>	<b>134</b>	<b>754</b>	<b>927</b>	<b>880</b>

\* "Other" includes low demand disciplines such as entomology, and several categories for which several disciplines may be accessed, such as research analysis, training specialists, information specialists and rural development specialists.

**Table 3: Projected Trends in Long Term Technical Assistance Use by Problem Topics by Geographic Region.**

Problem Topic	Africa		Asia		Latin America/ Caribbean		Near East		Total	
	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990
Farming Systems	H	D	H	*	H	*	L	I	H	D
Irrigated Crops	H	I	H	D	H	I	H	*	H	*
Rainfed Crops	H	D	L	*	L	*	H	D	H	*
Seed Technology	H	D	L	*	L	*	H	D	H	D
Animal Health	L	D	L	*	L	*	L	*	L	*
Arid Lands Livestock	H	D	L	*	L	*	H	D	L	D
Nonarid Lands Livestock	L	D	L	*	L	*	L	D	L	*
Forestry	H	D	L	I	H	I	L	D	H	*
Soil Management	L	*	H	D	H	I	L	D	H	*
Water Management	L	I	H	D	H	I	H	*	H	*
Watershed Management	L	*	H	*	H	I	L	*	L	*
Ag Finances	H	D	L	*	L	*	L	D	L	*
Ag Planning	H	D	H	D	H	*	H	D	H	D
Ag Policy	H	D	H	D	H	D	H	*	H	D
Ag Research Management	L	*	H	D	L	*	H	*	L	D
Ag Vo Education	L	I	L	*	L	*	L	*	L	*
Extension/Diffusion	L	*	H	D	L	*	H	*	L	*
Farmer Organization	L	*	L	*	H	*	L	I	L	*
Higher Ag Ed	L	*	L	D	H	D	H	D	L	D
Rural Dev Planning	L	*	H	D	L	*	L	*	L	*
Rural Infrastructure	L	*	L	*	L	*	L	*	L	*
Aquaculture	L	*	L	D	L	*	L	*	L	*
Energy - Crops	H	D	L	D	L	I	L	*	L	*
Energy - Fuelwood	H	D	H	I	L	I	L	*	L	*
Farm Mechanization	L	*	L	*	L	*	H	D	L	*
Food Science	L	*	L	*	L	*	L	*	L	*
Land Tenure	L	*	L	*	H	*	L	*	L	*
Nutrition	L	D	L	*	L	*	L	*	H	*
Women in Development	L	I	L	*	L	*	L	*	L	*
Other	H	D	H	I	H	I	H	*	I	D

\* 1985 Ranking of Demand: H = above average for bureau; L = below average for bureau.  
 1990 Projected Changes in Demand: I = increase; D = decrease; \* = same.

as a discipline and topic, because it, too, is a complex area with many different specializations, not the least of which is--or should be--the social sciences. The point that I wish to emphasize here is that the very nature of projects undertaken by A.I.D. requires effective interdisciplinary teamwork, especially in view of the fact that A.I.D. projects require work in a foreign culture, with economic, social and political systems acutely different from our own. The formation of competent interdisciplinary teams that represent the various technical assistance inputs envisaged by those designing the projects. This is an important objective of all of the MOU/PSG's and of all of the Strengthening Grant Programs.

Data in the final table address the type of work activity which the Agency expects to be associated with technical assistance in each area of project activity. The four types listed are:

- 1) science - direct use of highly specialized competencies for research;
- 2) institution building - development of generic educational, research, government administration or other public service institutions;
- 3) national policy advising - high level government policy advising in agriculture (pricing, marketing, etc. or more general public policy); and
- 4) project development - implementation of projects organized to solve problems that require interdisciplinary cooperation, and, in most cases, field work, such as irrigation schemes, watershed management and farming systems.

The data suggest a preponderant need for project development assistance. This is particularly true for the Near East and Africa regions. Direct research input needs in the Asia and Latin America/Caribbean regions, although less than institution building and project development inputs, are greater than those for the Near East and Africa regions. This probably reflects in part the considerable number of trained scientists in Asia and Latin America who create a demand for these projects and who anticipate collaboration with scientists funded under A.I.D. projects.

Obviously, not all of the technical assistance to be provided for A.I.D.'s overseas agricultural development programs will come from the universities. The private sector-consulting firms and Private Voluntary Organizations, international organizations, such as International Agricultural Research Centers, and government agencies have, and will

**Table 4: Projected Short Term Technical Assistance Use by Problem Topic and by Geographic Region.**

Problem Topic	Africa		Asia		Latin America/ Caribbean		Near East		Total	
	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990	1985→1990
Farming Systems	H	D	H	*	H	D	H	*	H	D
Irrigated Crops	H	*	H	*	H	I	H	D	H	I
Rainfed Crops	L	*	H	D	H	I	H	D	H	D
Seed Technology	H	D	L	*	L	*	H	D	L	D
Animal Health	L	D	L	*	L	*	H	D	L	*
Arid Lands Livestock	H	D	L	*	L	*	L	I	L	*
Nonarid Lands Livestock	L	I	L	*	L	I	L	I	L	I
Forestry	H	D	H	I	H	*	L	D	H	D
Soil Management	L	*	H	*	H	I	H	D	H	*
Water Management	H	*	H	*	H	I	H	I	H	I
Watershed Management	L	*	H	I	H	I	L	I	L	I
Ag Finance	H	D	L	*	H	*	H	D	H	D
Ag Planning	H	D	L	*	H	*	H	D	L	D
Ag Policy	H	D	H	D	H	D	L	*	H	D
Ag Research Management	L	*	H	I	L	D	L	*	H	*
Ag Vo Education	L	*	L	*	L	*	H	*	L	*
Extension/Diffusion	L	I	H	D	H	*	H	D	L	D
Farmer Organizations	L	D	H	*	H	*	L	*	L	*
Higher Ag Ed	L	*	H	D	H	*	H	I	L	D
Rural Dev Planning	L	D	H	*	H	*	L	*	L	*
Rural Infrastructure	L	*	H	*	H	*	L	*	L	*
Aquaculture	L	*	L	*	L	*	L	*	H	*
Energy - Crops	L	D	H	D	L	I	L	*	L	*
Energy - Fuelwood	L	*	H	I	L	I	L	*	L	I
Farm Mechanization	L	I	H	D	L	*	L	*	L	*
Food Science	L	*	L	*	L	*	L	*	L	*
Land Tenure	L	*	L	*	H	I	L	*	L	*
Nutrition	L	D	L	*	L	*	L	*	H	*
Women in Development	L	*	L	*	L	*	L	*	L	*
Other	H	D	L	I	H	*	L	I	L	I

\* 1985 Ranking of Demand: H = above average for bureau; L = below average for bureau.  
 1990 Projected Change in Demand: I = increase; D = decrease; \* = same.

**Table 5: Projected Needs for Long Term Technical Assistance Use by Problem Topic, Academic Discipline, Problem Topic, and Geographic Region.**

<u>Problem Topic/ Discipline</u>	<u>Africa</u>	<u>Asia</u>	<u>Latin America/ Caribbean</u>	<u>Near East</u>
<u>Irrigated Crops</u>				
Agronomy	x	x	x	x
Plant Science	x	x	x	
Horticulture	x	x	x	x
Entomology	x			
Soil Science	x	x	x	
<u>Rainfed Crops</u>				
Agronomy	x	x	x	x
Plant Science	x	x	x	x
Entomology	x			
Agroforestry		x		
Soil Science		x		
Horticulture			x	x
<u>Forestry</u>				
Forestry	x	x	x	x
Natural Resources	x	x	x	
<u>Water Management</u>				
Soil Science	x	x	x	x
Ag Engineering	x	x	x	x
Ag Economics	x	x	x	
Soc/Anthro/PolSci	x	x	x	x
Ex/Org/Education			x	
Agronomist				x
Other		x		x
<u>Soil Management</u>				
Soil Science	x	x	x	x
Ag Engineering	x	x	x	
Natural Resources		x	x	
Ag Economics		x		
Other			x	
<u>Watershed Management</u>				
Agronomy	x	x	x	x
Ag Engineering	x	x		x
Ag Economics	x	x	x	
Forestry		x	x	x
Natural Resources		x	x	

**Table 6: Relative Emphasis of Work Assignments by Problem Topic and Geographic Region.**

Problem Area	Africa				Asia				Latin America/ Caribbean				Near East			
	S	IB	NP	PD	S	IB	NP	PD	S	IB	NP	PD	S	IB	NP	PD
Farming Systems.....	10	20	10	60	20	30	10	40	20	30	--	50	30	10	10	50
Irrigated Crops.....	20	10	--	70	30	20	20	30	30	30	--	40	40	10	10	40
Rainfed Crops.....	20	10	--	70	20	30	10	40	30	25	--	45	40	10	10	40
Seed Technology.....	30	10	20	40	40	40	10	10	20	50	--	30	10	20	10	60
Animal Health.....	--	--	20	80	60	10	20	10	25	40	--	35	--	20	10	70
Arid Lands Livestock....	--	--	20	80	--	--	--	--	--	--	--	--	20	10	10	60
Nonarid Lands Livestock..	--	--	20	80	30	25	25	20	30	40	--	30	10	--	10	80
Forestry.....	10	55	10	25	20	30	10	40	20	30	10	40	--	25	25	50
Soil Management.....	10	20	--	70	20	30	10	40	20	30	--	50	--	10	10	80
Water Management.....	--	--	20	80	20	30	20	30	20	40	20	40	--	25	25	50
Watershed Management....	10	20	--	70	10	30	20	40	20	50	--	30	10	10	10	70
Ag Finance.....	--	20	--	80	10	40	40	10	--	50	10	40	--	100	--	--
Ag Planning.....	--	20	50	30	10	10	50	30	5	55	10	35	5	5	30	60
Agricultural Policy.....	--	40	40	20	--	30	40	30	--	40	40	20	--	20	60	20
Ag Vocational Ed.....	--	30	10	40	25	25	25	25	--	85	--	15	--	50	--	50
Extension/Diffusion.....	--	40	10	50	20	30	10	40	5	50	5	40	5	5	30	60
Farm Organizations.....	--	--	10	90	10	20	30	40	--	45	--	55	--	15	15	70
Higher Ag Education.....	--	90	10	--	25	25	25	25	--	85	--	15	--	50	--	50
Research Analysis.....	--	70	10	20	20	30	20	30	5	50	5	50	25	25	25	25
Rural Dev Planning.....	--	--	10	90	10	20	30	40	--	35	30	35	--	--	--	--
Rural Infrastructure.....	--	--	10	50	10	20	30	40	--	50	--	50	--	--	--	--
Aquaculture.....	--	--	40	60	25	30	15	30	10	30	10	50	--	--	--	--
Farm Mechanization.....	10	55	10	25	30	30	20	20	20	10	--	70	--	--	--	--
Food Science.....	10	30	60	--	10	30	30	40	10	30	10	50	--	--	--	--
Land Tenure.....	--	10	90	--	--	30	40	20	--	10	20	70	--	--	50	50
Nutrition.....	20	--	10	70	30	20	20	30	10	30	10	50	--	--	--	--
Renew. Energy/Crops.....	10	55	10	25	40	20	10	30	--	--	10	90	--	--	--	--
Renew. Energy/Fuelwood..	10	55	10	25	30	30	20	20	20	10	--	70	--	--	--	--
Women in Development....	--	20	40	40	--	20	50	30	10	30	10	50	--	--	--	--
Other.....	--	80	20	--	25	25	25	25	10	30	10	50	--	--	30	70

\* S - Science  
 IB - Institution Building  
 NP - National Policy Advising  
 PD - Project Development

continue to, engage in assistance programs, particularly in the project development area. Universities that are serious about involvement with A.I.D., should consider preparing their faculty and staff to undertake these types of assignments.

Conclusion:

We do not know at this time what the specific characteristics or numbers of future MOU's will be. We do know, however, that A.I.D. will continue to require substantial amounts of assistance in the form of technical expertise, research and training from Title XII institutions. We are prepared to provide you with resources in order to help you help us complete the task that led to the Title XII legislation - namely, to conquer the vestiges of famine and hunger that remain on this globe. We will also need your help in making the MOU a more effective instrument in support of this objective and, through demand profiles and other means, in improving the match between your capacities and A.I.D.'s work. Thank you.

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## TITLE XII: A NEW ORDER OF THINGS

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Speech Delivered by  
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### Introduction

When Title XII was legislated a decade ago, it didn't arrive as a full-grown tree with a stout trunk, leafy limbs and deep roots. It was a seed that needed careful nurturing by both the universities and A.I.D. Now it is a vigorous seedling that we continue to encourage as it grows.

To help that growth, we in A.I.D., together with our BIFAD colleagues, have borrowed some proven ideas and we've created some new innovations. You're all familiar with the many initiatives that have been used to keep Title XII alive and growing.

The legislation, itself, helped us to overcome some barriers and create a forward momentum where none had existed for many years. But the changes have been hard won. The critics have been many; the accolade: all too few.

Our experience with Title XII reminds me of an observation made by Machiavelli in The Prince:

"...There is nothing more difficult to carry out, nor more doubtful of success..... than to initiate a new order of things. For the reformer has enemies in all those who profit by the old order, and only lukewarm defenders in all those who would profit by the new..."

Yet even with the implicit constraints, Title XII has prevailed and we are making progress.

Let me now apply myself to the task of this panel and give you AID's current overview and prospective for Title XII.

## TITLE XII INITIATIVES

### Technical Support to Missions (TSMs)

Information about the technical support we are making available to missions, on a "retainer" basis, is being disseminated at Agricultural Development Officers Meetings, Regional Directors Meetings and Mission Directors Meetings. Initial interest in TSMs has been less than expected and has come primarily from Missions and Regional Offices in the Latin America and Caribbean region, as well as from two regional service units in Africa. In an effort to increase TSM-participation, we recently cabled our Missions encouraging them to take advantage of this technical support arrangement. At this time, TSMs have been arranged between:

- \* Costa Rica and the University of Florida;
- \* Dominican Republic and Texas A&M;
- \* Guatemala and Texas Tech;
- \* Ecuador and Utah State;
- \* RDOC (Regional Development Office/Caribbean) and MUCIA (Midwest University Consortium for International Agriculture);
- \* REDSO/EA (Regional Economic Development Services Office/East Africa) and MIAC (Mid-American International Agricultural Consortium); and
- \* REDSO/WA (Regional Economic Development Services Office/West Africa) and the Southeast Consortium for International Development.

The TSM arrangement seems to be particularly appropriate for regional offices because it is a mechanism through which they can easily access a great variety of technical assistance on a quick turn-around basis.

Interest remains high in the LAC region and requests for technical proposals are already out or will soon be out to Bolivia, El Salvador and Haiti. We hope that as time passes, other regional bureaus and missions will recognize the value of this relatively fast access to technical services and will take advantage of TSM.

### Memoranda of Understanding (MOU)

Since I will be one of the presenters on the MOU panel tomorrow afternoon, I won't use up all of my punch lines

on that subject today. Suffice it to say that individual MOUs have been signed with five universities and joint MOUs with four more. Discussions are underway with some 20 universities for joint MOUs.

Over the last two years, MOUs have enhanced many of the collaborations between AID and the university community. However, MOUs require a high level of agreement and commitment to work and each new cooperative arrangement has its own unique problems and challenges. During the MOU Panel tomorrow afternoon I'll discuss MOUs further, and explain how we propose to minimize or eliminate some of the major constraints and enhance the effectiveness of the MOU instrument in achieving shared objectives.

### CRSPs (Collaborative Research Support Programs)

There has been increasing recognition throughout A.I.D. of the positive value of CRSPs. This recognition has several dimensions:

- 1) the value of their joint character--involving U.S. university contributions in terms of financial as well as staff resources--and participation by developing country institutions; and
- 2) an increasing number of impressive accomplishments in the way of research results. At the same time, we believe there is a continuing need to focus some of the CRSP activities more sharply. Some A.I.D. field missions, probably a minority, continue to see CRSPs as competitive with bilateral programs. As the performance of CRSPs continues to show results, we would expect their image within A.I.D. to continue to improve.

### Joint Career Corps

The Joint Career Corps (JCC) also has been a valuable tool and has produced some notable successes during the last two years. To date, 17 faculty members from 16 institutions are participating in the program and are dealing with a variety of development problems such as irrigated agriculture and forestry.

The reverse JCC is also paying off and the five A.I.D. staff members who currently or will soon participate in that initiative are enthusiastic about the valuable new relationships they are fostering for themselves and the Agency, as well as the enhanced knowledge and ability they will bring back to A.I.D.

The Joint Career Corps was designed to attract college and university faculty members at mid-point in their careers. The JCC commitment involves many "prime time" years of a researcher's career.

The success of the Joint Career Corps program is best measured by the degree to which missions are satisfied with their current JCCs. We have had almost unanimous praise by mission directors of these university-loaned scientists. In several cases we have received requests for extension of the JCC overseas service tour. One mission director has made a forceful request for a four-year tour. While we have not approved this length of extension, the request does indicate the high degree of satisfaction with the JCC's service.

### Research and Technical Fellowships

We at A.I.D. recognize that, for a variety of professional and personal reasons, some scientists cannot make a long-range commitment of this kind. Consequently, we are seeking alternate means to harness the expertise of other researchers and educators on a one-time basis.

There has been some discussion of the possibility of seeking authorization for the Agency to grant Research and Technical Fellowships. Such a fellows program would encourage participation in international development of scientists and technologists who have an interest in overseas work, but who cannot at this stage of their careers make the long-term commitment which the Joint Career Corps requires. While we would anticipate broad interest of all faculty members in a fellows program, it would likely be of special interest to young scientists who could spend up to three years overseas without formally committing themselves to further involvement. Senior faculty members who are nearing retirement also might find a fellows program attractive.

These Fellowships would not have the continuity that is such a valuable part of the JCC and other cooperative arrangements. However, they will give A.I.D. greater access to members of our scientific and technological community and would provide unique opportunities for short-term faculty involvement in international work. This, in itself, would be particularly valuable at this time. Let me explain why.

### THE CURRENT CHALLENGE

#### Generating Substance

A.I.D.'s visible activity is the overseas programs.

Most people outside the Agency--Congress, the-person-on-the-street, etc.--don't have the foggiest notion how we generate the substance of those programs. To the outsider I'm sure it looks like the process is the problem. Indeed, processes should be and are changed and improved over time. But, from the inside we know that a much less visible activity--research to find solutions for developing-country constraints, and mechanisms to successfully transfer those solutions to the countries in need--is what really can make a difference.

To assure that research opportunities are fully realized and integrated into the Agency's development programs, A.I.D. must have access to a large number of scientific and technical personnel. Furthermore, those who provide scientific and technical expertise must, in effect, be hybrids. That is, they must be up-to-date in their training and experience. And they must also have a sincere interest in international development and the inclination to use their talents to further development assistance efforts.

Where does the Agency turn to obtain the expertise needed to carry out its mandate to generate and transfer improved technologies? Current budgetary and policy constraints make it impossible for A.I.D. to employ, on a continuing basis, the number and quality of scientific and technical personnel needed to do its job. In fact, the necessity for direct-hire employees to focus on the process of initiating and managing development projects leaves them all too little time to keep themselves up to date on the substance of what they are doing. Consequently, mechanisms such as the JCC program complemented by something like a comprehensive fellows program must be used to provide the scientific and technical enhancement needed.

### HBCUs

Another Title XII activity that is just getting underway will also help fulfill our scientific and technological needs. This is our program to more fully involve the Historically Black Colleges and Universities (HBCUs) in our efforts. This HBCU program focuses on the seventeen 1890 Land Grant institutions and Tuskegee Institute as excellent sources of expertise for our work in developing country agriculture. We expect that the 1862 Land Grant institutions will work with the 1890 HBCUs to help facilitate this involvement.

Some HBCUs have a long history of involvement with development assistance through A.I.D. and A.I.D.'s predecessor agencies. We are now increasing our attention to these institutions and their unique potential. HBCUs have expressed great interest in involvement, particularly in Africa

and in the Latin America and Caribbean region. In addition to the participation of HBCUs in MOU arrangements, we have initiated a small research grants program. This will stimulate HBCU faculties to get more involved in international research in the fields of agriculture, health and nutrition. It will also encourage significant HBCU linkages with the Agency's overseas missions.

### Agricultural Research and Faculties of Agriculture in Africa

As we are all aware, conditions have worsened considerably in Africa during the last few years. Food constraints have been exacerbated by years of drought and rapid population growth. In an effort to impartially spread assistance over the many countries on that continent, donor assistance has been much less focused and effective than in other regions. Consequently, fewer major solutions have resulted.

To meet the African Challenge, the Agency is currently developing a two-pronged approach. First, we expect to join with other donors in long-term efforts to strengthen agricultural research programs in a few select countries of Africa. Second, we would mount a companion effort to assist the long-term development of six to eight quality agricultural faculties in selected African universities. Both efforts would be characterized by sharp focus on the highest-priority development issues and on carefully selected areas.

Africa needs research to produce rapid, positive change such as was produced by the green revolution in Asia and parts of Latin America during the past 30 years. We propose initially to focus most of our support on a series of long-term research networks concerned with eight to ten high priority food commodities. In turn, this support will be focused primarily on countries with a combination of need and potential for accomplishment. The research networks will require support and technical backstopping for participating countries. They will also require network coordination and major training programs to provide the necessary national technical expertise. We are envisaging that this effort will be long-term (at least 20 years) and that it will require inter-donor coordination.

The key role for U.S. universities in these research efforts is obvious. They will be called upon to train researchers for each network and to supervise extensive thesis research. They will also be asked to cooperate with national programs and international agricultural research centers in providing technical coordination and backstopping. (Let me add parenthetically here that we have high expectations for our proposed support of linkages

between research undertaken in Title XII universities with work undertaken in international centers. We believe such linkages will enhance the work of both sets of institutions.) By focusing our resources on a limited set of research networks we hope to reduce duplication and increase the cost effectiveness of the efforts. Our goals are to find effective solutions to economic development constraints in Africa, while at the same time developing the research and teaching potential in country institutions.

African nations that are not directly involved in the research will receive much less direct support. However, they will benefit from the results of research that is done elsewhere and will be able to take advantage of the increased educational potential that will be available in neighboring countries.

Turning now to the university-building process, we are eager to help the Africans benefit from successful experiences in Asia and Latin America. We hope to work with them to identify a small number (6-8) of existing universities or colleges with significant agricultural faculties and with marked potential for development. The institutions would be located in a variety of agricultural areas that have a recognized capacity for growth.

Just as was done in Asia and Latin America in the 1960s and early 1970s, we would work with the universities in Africa to develop long-term plans (20 or more years) to improve the quality and increase the size of these agricultural institutions. Our goal would be to help them develop into quality institutions of higher learning capable of giving training up to the M.S. degree level.

To carry out the development, we would support collaboration between the African institutions and selected U.S. universities. We would seek the cooperation of other donors to help support these university-building efforts. Preliminary discussions are already underway with the World Bank in this regard.

There is a major role for Title XII in this African agricultural research and faculty development endeavor. Because of their particular experience both in Africa and with limited-resource, rural agriculture in the United States and elsewhere, HBCUs will play a significant role in this program.

### Conclusion

The HBCU initiative, the proposed Research and Technical Fellows program and the research networks and university building in Africa are new branches for our Title XII

seedling. Through these mechanisms our tree is growing and thriving.

We look forward to the cooperation and creativity that we will experience together as we move forward.

Thank you.

**FIGHTING HUNGER AND PREVENTING FAMINE:**  
**THE NEXT TEN YEARS**

Benjamin F. Payton  
President  
Tuskegee Institute

Thank you very much for inviting me to participate in this 10th anniversary discussion and review of the Title XII program. I sometimes think it is unfortunate that we have developed the bureaucratic shorthand of referring to activities by numbers rather than key words. Perhaps if we consistently referred to Title XII as the "Famine Prevention Program," it would serve to remind us of our very critical mission to end famine and prevent hunger in the world.

In enacting Title XII of the Foreign Assistance Act in December, 1975, Congress used clear language:

"The Congress declares that, in order to prevent famine and establish freedom from hunger, the United States should strengthen the capacities of the United States land-grant and other eligible universities in program-related agricultural institutional development and research,... should improve their participation in the United States Government's international efforts to apply more effective agricultural sciences to the goal of increasing world food production, and in general should provide increased and longer term support to the application of science to solving food and nutrition problems of the developing countries."

This is a clear mandate: "to prevent famine and establish freedom from hunger." Acknowledging the complexity and intractability of the problem of hunger, I cannot help but be struck that today in 1985, the tenth year of this legislation, we are still so far from solving these problems. Let us use the occasion of this 10th anniversary to find ways to make this famine prevention program succeed.

One section of Title XII calls for action "to build and strengthen the institutional capacity and human resources skills of agriculturally developing countries..." I am particularly challenged by this element. I see institutional development as a key area in which the Title XII institutions--and particularly the 1890 institutions--can play an important role in the next decade. I had very striking first-hand experience in this respect during a two-week period I recently spent in Zaire as leader of President Ronald Reagan's

## Agricultural Task Force to Zaire.

One evening I visited the home of a professor at the University of Zaire at Kinshasa. Many of his friends and colleagues who gathered there had been trained in some of our finest land-grant institutions. They described many problems:

- buildings urgently need major repair and renovation;
- faculty morale is low because of inadequate or unpaid salaries;
- there does not appear to be an adequate plan for future development of universities

After talking to these persons and to government officials, businessmen, farmers, and extension agents throughout Zaire, the Task Force recommended major restructuring of teaching, research, and extension in Zaire. We urged the Government of Zaire to plan for viable functioning institutions of higher learning, with agriculture built into the curriculum.

This is just one example of a problem existing in Africa and in other parts of the developing world. In past decades, AID and other international donors have worked with universities and research institutions of Asia and Latin America and have realized considerable success. We cannot allow another decade to pass without focussing comparable and even greater efforts on building up the universities and research institutions on the continent of Africa.

This is the challenge. What resources will we have to meet this challenge? AID's 1985 Title XII report states that in fiscal years 1985 and 1986, Title XII programs are expected to account for about \$400 million of institution-building activities in agriculture, rural development, and nutrition. However, our nation now faces a very grave budget crisis. I understand that this crisis will have a very serious impact on AID and on its ability to fight famine and hunger. AID will be particularly restricted in its ability to hire full-time technical specialists. This means, in part, that they will be looking even more to the Title XII institutions to help provide manpower to carry out these important tasks.

This says to me that in the coming years we, in the 1890 universities, must redouble our efforts to produce French-speaking, Swahili-speaking, and Portuguese-speaking agricultural economists, agronomists, nutritionists, and other specialists. It means that we must be forceful and innovative in providing effective language training facilities for our faculties and students. We must make imaginative use of our high

school and undergraduate counseling services to stimulate our students' interest in economics and see that they get all of the mathematics required to perform effectively in the field. We must dispel the attitude found among some of our young people that agriculture is an unglamorous area. They should be made aware of the considerable opportunities for well-paid employment, international travel, intellectual challenge, and an opportunity to serve.

In the coming years I would like to see more of our graduates working with the World Bank and the International Monetary Fund, with our private sector agricultural enterprises, and with the Agency for International Development. I want to see more of our faculty participating as design team members, working with private voluntary organizations, and heading up major technical assistance projects.

This goal can be realized only through support from the highest level of leadership in our institutions. We, as Presidents, will have to play an even greater role in letting our faculty and our students know the very high priority we place on the language training, technical and scientific training, and all of the other elements that go into preparing us to increase our participation in international activities.

In this regard, I would like to recognize and commend the very fine program being carried out by the National Association for Equal Opportunity in Higher Education (NAFEO) in conducting workshops, international travel and other activities designed to increase the participation of historically black institutions in AID activities. This program can certainly play an important role. Our institutions need to let AID and NAFEO know that we value this assistance and would like to see it continued and strengthened.

Many of our schools have already participated in the strengthening programs and are moving on to work jointly with other universities through Joint Memoranda of Understanding (MOU). Presidents of 1890 institutions have stated to me their interest in working through the Joint MOU program. This program and all of the other AID programs are important mechanisms. In all that we do, however, I hope that we will keep in the forefront of our consciousness our simple but difficult Congressional mandate: to prevent famine and to fight hunger.

Title XII universities can have only one goal for the next ten years. That goal is to exhaust every resource we have to make certain that 1995 does not find on the African continent or anywhere in the world the mass starvation we now see. I believe the key to progress over this next decade is a strong focus on the development of indigenous

institutions and the continued training of personnel to man these institutions.

**A DECADE OF TITLE XII**  
**WHERE ARE WE?**

William E. Lavery  
President  
Virginia Polytechnic Institute & State University  
and  
Chairman  
International Affairs Committee of National Association  
of  
State Universities and Land-Grant Colleges (NASULGC)

Title XII, Section 297(A) of the International Development and Amendment to the Foreign Assistance Act of 1961 as amended and approved by the Congress in 1975, is recognition of the increasing interest in and success of international public service programs by this country's state universities and land-grant colleges. The case for such international public service remains a strong one. These programs serve broad, humanitarian needs and promote international peace and stability. They also serve our national interests by strengthening the research, teaching, and public service activities of our own colleges and universities and by advancing our national economic and political interests both domestically and abroad. I know this audience need not be told that the international development programs of America's land-grant institutions is one of the great success stories of our time.

Title XII provided legislation and funding to enable land-grant and other eligible universities of the United States to strengthen their capacities in agricultural institutional development and research, to prevent famine and to establish freedom from hunger abroad. The program made possible by Title XII focuses on applying more effective agricultural sciences to assist in solving food and nutritional problems of the developing countries.

The legislation was a step towards helping U.S. universities and especially land-grant universities, achieve a special role, a partnership, with the federal government in the conduct of foreign technical assistance programs. The universities believe that their special capacities in human resource and institutional development are critical to the sources of such U.S. programs. Title XII was regarded as official recognition of this enhanced role and a means towards its achievement.

After a decade of activity under Title XII, definite, clearly identifiable improvements have been made; innovative

programs have been formulated and executed and certain improved arrangements are in place. On the other hand, there also are some disappointments in expectations, and in changes in the conduct of aid programs which have led to a concern with present arrangements under Title XII.

It is probably timely to assess the successes and the shortfalls of this very significant program, as such assessments can provide guidance for adjustments in the future.

As I indicated, there are many Title XII successes.

One is the Board for International Food and Agricultural Development. BIFAD is a solid achievement. For the first time there is an organization and operating office within AID to assist with matters concerning universities and to promote and facilitate their participation in U.S. foreign assistance programs. BIFAD filled a void that existed since the establishment of Point Four after World War II. It provides valuable information services regarding AID initiatives and programs and makes critical intercessions on behalf of the university community. Blessed with outstanding leadership, BIFAD and its staff have worked quietly and diligently on behalf of university interests.

Another success is the Collaborative Research Support Programs (CRSP's). The CRSP has emerged as a highly successful means of securing effective cooperation among U.S. universities and institutional counterparts in nations of Asia, the Middle East, Africa, Central and South America. It is essentially an arrangement in which CRSP scientists and personnel design and conduct research (and research training) in the U.S. and cooperating nations on important agricultural commodities/enterprises/resources of mutual interest and value: such things as beans and cowpeas, sorghum and millet, tropical soils, peanuts, and small ruminants. Funded by U.S.A.I.D., managed by a leading U.S. university, and directed by co-principal investigators from collaborating institutions. The CRSP's are beginning to produce significant benefits to the nations involved, including the U.S. The CRSP's have mobilized hundreds of U.S. university scientists, thousands of dollars from U.S. universities and significant amounts of local currencies from cooperating nations, as well as in kind contributions, in support of joint projects. Functioning, cooperative regional and global networks are in place which expedite the exchange of materials and information. Enduring ties and relationships between individual scientists are being forged which are likely to persist long after the demise of the CRSP's and AID.

A third success is the strengthening international development capacities of American universities. Under

Title XII, U.S.A.I.D. has provided sixty-one university strengthening grants. These grants have been very helpful to universities involved and accelerated the rate of building their capacities and enabled them to participate more actively in international development. While the University Strengthening Grant Program has not achieved all of the goals originally envisioned, it has been one of special successes of Title XII.

As successful as these programs have been--and I emphasize that Title XII is a success story--there is always room for improvement.

Some feel that the goal of securing a partnership relationship with U.S.A.I.D. has not been achieved; perhaps they think it was an "impossible dream," an unrealistic dream. At this point, some are discouraged and feel that the real partnership envisioned by those who drafted the Title XII legislation has not happened to the extent we would like. Similarly, there are those who feel the Joint Career Corps (JCC) Program which held so much promise has not been established at the level envisioned. There unquestionably is a need for a greater spirit of cooperation on both sides, and we must work at that.

There also remains much to do in internationalizing U.S. universities and linking their domestic and international programs. Too often, international agriculture goes in one direction: technical assistance of our faculty to those in the developing world. This too often promotes a dichotomy between "we" and "they". The communications must be in two directions. We must not only do institution-building overseas but let our international experience and international students contribute to our own institution-building at home. The experience of our faculty overseas can do much to enrich our own universities, our communities, and our states. Let me give you some examples from my own university of how this two-way communication can work.

Virginia Tech has had two farming systems research and extension (FSR/E) projects in Virginia. The FSR/E methodology originated in the developing world, and the principal investigators for the Virginia projects drew on their international work in dealing with limited resource farm families to work with Virginia farmers. In turn, the two projects in Virginia led to experience that was shared in the international arena through workshops in the Gambia and work with the Rockefeller Population Council and the U.S.A.I.D. Farming Systems Support Project. In Virginia the farming systems work has been done in collaboration with Virginia State University, the historically black university, an institution also involved with farming systems work overseas, and with the Virginia Cooperative

Extention Service. The international has strengthened the domestic and the domestic has strengthened the international.

We have had similar experiences in teaching. Building on our involvement in international agriculture and human resources, we at Virginia Tech have developed or modified courses to include a focus on international development. Together with courses already available, we will offer, beginning in the fall, an undergraduate concentration in international development for international studies majors and are providing minors in international development for other colleges such as agriculture. None of this could have been accomplished had we not had faculty involved overseas with development.

Such curriculum development constitutes institution-building at home based on our work in the third world.

Another example can be cited in Extension. The women in development movement is an active force among international development practitioners and policy makers and among nations of the developing world. It has spawned a vast literature which is only now being looked at for its domestic implications. At Virginia Tech and elsewhere in the USA, many of our home economics extension personnel are considering women-in-development literature to be able to apply its theories and field ideas to domestic programs. Again there is an enriching link between our programs at home and those abroad.

In any program as large as this, there are always other problems and shortfalls. Some complained, arguing that U.S. government procurement regulations hindered making progress in developing countries. Changes in procedures, reductions in field staff and decentralization--especially in U.S.A.I.D.--are cited as other problems. There are those who are disappointed in U.S.A.I D. funding of university contracts.

I mention these problems and "shortfalls" in a positive spirit. Title XII is one of the real success stories among our government programs. Much progress has been made in achieving Title XII goals and objectives in its first decade. At the same time, large challenges remain ahead. We face those challenges with a positive outlook, confidence and enthusiasm.

**PROJECT MANAGEMENT SYSTEMS:**  
**The Application of New Technology Systems to**  
**International Programs**

Peter Hartmann  
Director of International Programs  
Florida A&M University

Let me begin by thanking Tom McCowen for the exciting opportunity to participate in this AUSUDIAP conference. It is most appropriate that we are discussing the topic of "Application of New Technology Systems to International Development" in this AUSUDIAP conference where the theme is "The Decade Ahead".

I shall address this topic from the perspective of a user in the administration of International Programs on campus. It may be helpful to examine first exactly what functions are carried out in an international programs office. Secondly we shall look at some established uses of Microcomputers. Finally, we will take a closer look at a specific application.

**Functions - International Programs Office**

We may, for convenience, group the functions of an international programs office into five categories as depicted in Figure 1.

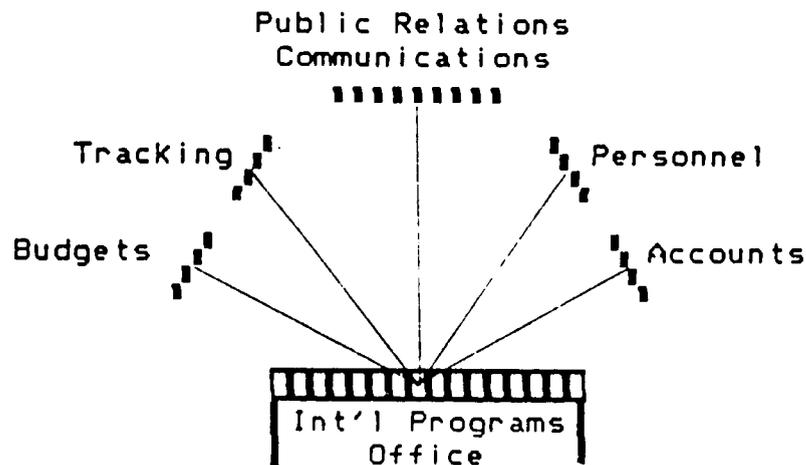


Figure 1

1) Public Relations and Communications

Here we can include such items as correspondence, newsletters, reports, proposals and workshop materials, etc.

2) Tracking

This function involves any type of activity that needs to be closely tracked. Two good examples of such activities are participant trainee information and procurement data.

3) Personnel

Most of us do not have to deal with this category as it falls under the jurisdiction of the Personnel Department. We may still find it necessary to do some specialized record keeping of faculty beyond our own staff, such as the need to maintain data on your core faculty. Their resume and particularly data needed to fill the Biographical Data form.

4) Accounts

Project accounts continue to be an important yet difficult function of an international programs office. Sometimes different sets and different accounting formats are necessary to meet the requirements of our institutions, state government, funding agency and field operations. The computer provides a useful tool in carrying out this function.

5) Budgets

Someone once said that budgeting was the second pastime of an International Programs Director, the first being worrying. We seem to budget, budget and budget again. The microcomputer is an excellent candidate here.

Functions - Microcomputer

In like manner, we can also group the functions that a microcomputer can do. Figure 2 presents five categories. I should point out that these categories represent a very limited set of functions. However, they are the most established and most widely accepted functions of the microcomputer. In our case here they also represent perhaps the most immediately relevant functions. Computers are good at processing WORDS, DATA, crunch NUMBERS, CHAT or talk with each other and do other SPECIAL functions.

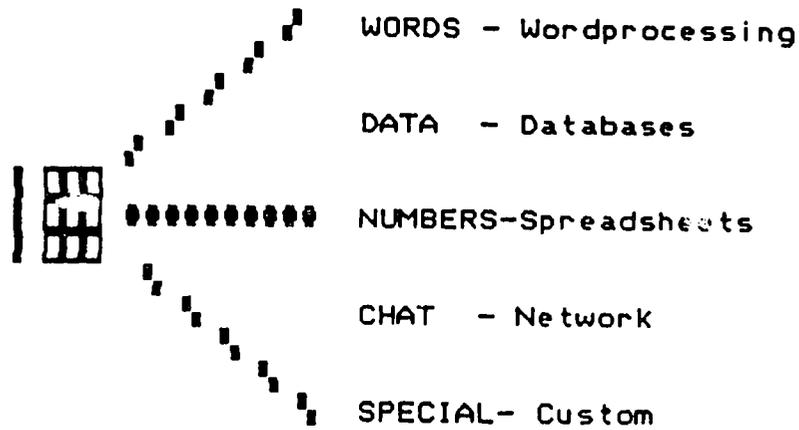


Figure 2

Words - Wordprocessing

Not too long ago the Selectric Typewriter was the order of the day. Today its the Wordprocessor. It is very helpful in performing some of the work in the Public Relations and Communications Group (Figure 3). The difference between the two is just incredible. With a typewriter a document had to be written out on paper, then typed. The turnaround time normally was about a day or so. The typed copy was then reviewed, changes made and the document retyped, that was another day or so. If you had a good typist that was the end of it, but many times it wasn't. The finished document looked so good you sent your president a copy. The president liked it, he would like to use it at the Regents meeting tomorrow morning. However, he wants paragraph four for the introduction and your introduction deleted. On the typewriter you are looking at a late nighter, but on the Wordprocessor 30 to 40 minutes!

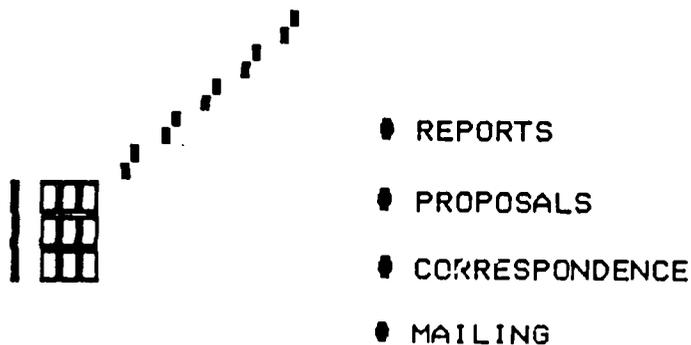


Figure 3

The new generation of Wordprocessors can perform wonderful things. They do your mailing lists, check your spelling including AID accronyms, generate indexes and table of contents and even send your communication via phone lines.

### Numbers - Spreadsheets

Electronic Spreadsheets basically convert your computer memory into an electronic workpad with many cells. The power of it is that each cell remembers not only its own content but also its relation to other cells.

Budgets: Standard budgets such as the Offeror's Cost Proposal and your own institution's budget format can be programmed into the spreadsheets and used over and over. Spreadsheets have drastically reduced the drudgery of budgeting and revising budgets.

Decisions: Questions such as 'what happens to my budget if the state approves a 6% pay raise instead of the 5% we planned for?' are instanteously answered. In this way the computer is a tremendous aid in making decisions that are based on your finances.

Spreadsheets as summarized in Figure 4, can also be used to keep ACCOUNTS, TRACK INFORMATION, and do some STATISTICAL work.

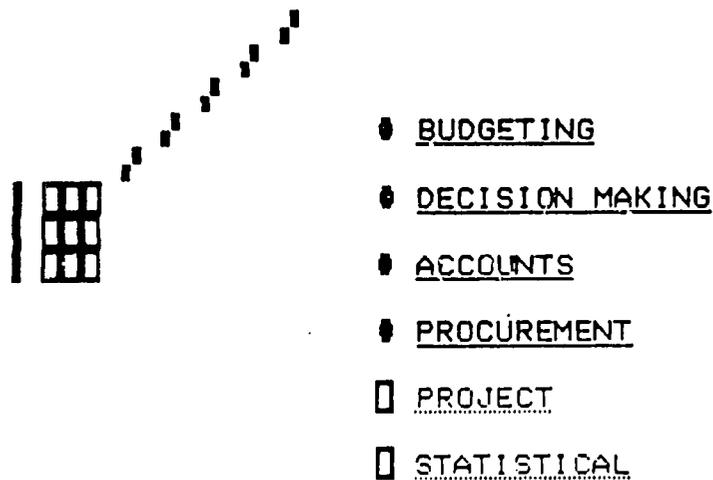


Figure 4

## Data - Data Processing or Management

Here we are referring to programs that allow you to manage large amounts of information and to manipulate and generate different kinds of reports of the information. Most common applications are in the Tracking Group of functions (Figure 5).

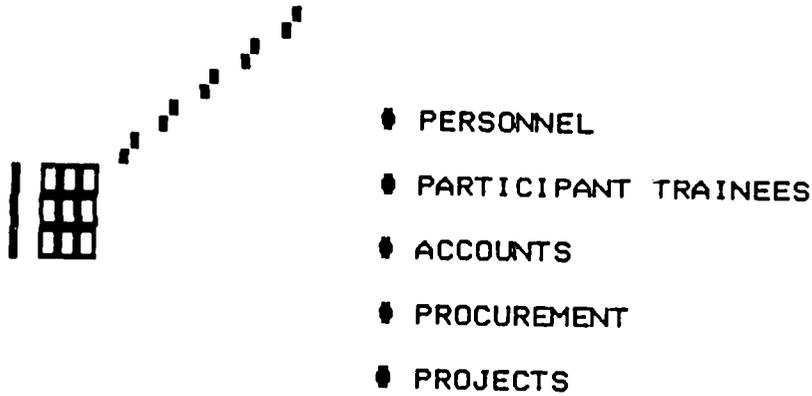


Figure 5

In our last procurement activity, for example, we had to procure over 2300 items from over 21 vendors in three different countries. Imagine trying to keep track of all the information in such a case which is quite common in procurement contracts. Our first reaction to a procurement contract used to be one of panic, as depicted in Figure 6.

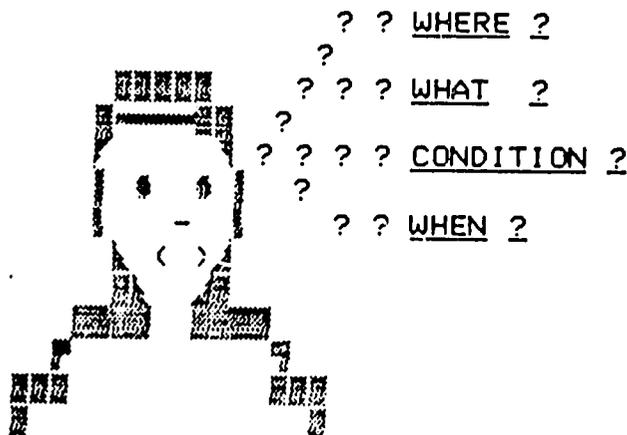


Figure 6

Finally, we resorted to the Microcomputer. Using a Relational Database Program we had a specific application developed to manage the information in this procurement activity. Figure 7 gives you an idea of the structure of the program.

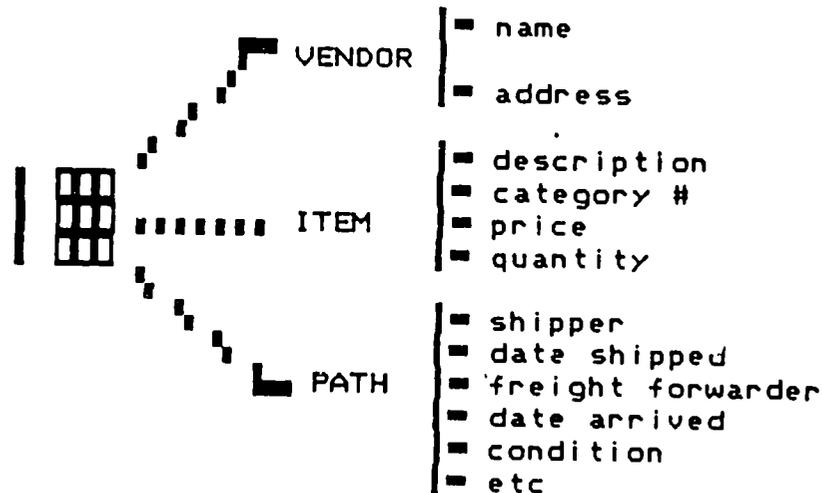


Figure 7

We programmed the Micro to handle information about the VENDOR, the ITEM to be procured, including information on its specifications for procurement. Finally we needed it to track the item's PATH as it moved from VENDOR to final destination.

The program allows us to track this information and also to interrogate it. For example, one might be interested to know how many items still have not arrived. How many and which particular items arrived damaged? Instead of physically pouring over 2300 items to get the answers, one would ask the Database to provide this information very quickly.

Database Management Programs are very suitable in managing different kinds of data. They are excellent also in generating reports of all kinds based on the information in the database. Of particular relevance to us here would be data on PERSONNEL, PARTICIPANT TRAINEES, PROCUREMENT, and ACCOUNTS.

## Chat or Networking

This function or capability of microcomputers is not yet as widely utilized in our profession, but it can be a tremendously helpful capability and one that we shall certainly be hearing more about. I shall not address the issue here as Sam Johnson has already addressed this topic from the perspective of field operations and Jim Carmon will examine the topic further from an institutional perspective.

## Special - Customized or Special Programs

The microcomputer can do many other functions, handling satellite data, graphics, monitor lab equipment, etc. You can have customized programs written to handle many special needs. This presentation is one example of a special application. For this presentation we have hooked up a portable microcomputer to a video projector. In this way we have managed to skip completely the whole process of accessing information from reports or elsewhere and the preparation of slides or overheads.

## Conclusion

A number of activities or functions of an international program's office lend themselves very well to some established microcomputer applications. Three software packages particularly SPREADSHEETS, WORDPROCESSORS, and DATABASE MANAGEMENT can be readily applied to assist us in performing our responsibilities. This assistance can be obtained at relatively low cost with little or no programming skills, yet their contribution to productivity is great indeed.

## PROJECT MANAGEMENT SYSTEMS:

### Application of New Technology Systems to International Programs View from the Field

Sam H. Johnson, III  
Assistant Professor of Agricultural Economics  
University of Illinois

The availability of relatively low-cost, but extremely powerful microcomputers has significantly changed the atmosphere on development projects in less developed countries (LDCs). No longer is it to be automatically expected that research and technical output from long-term overseas staff will be less professional than that of their colleagues back on campus. The power of the 1970's mainframe computer is now readily available for 1980's development projects.

Yet, the availability of this type of hardware places a new burden on both the long-term staff and on the support staff back on campus. The purpose of this paper is to examine the nature of that burden and to develop some suggestions for increasing the efficiency of use of microcomputers on development projects. The first section briefly describes various areas of applications that are particularly amenable to microcomputers. Section two and three address hardware and software concerns and section four points out some major training requirements. The final section discusses campus backstopping and presents suggestions for improving use of microcomputers on development projects.

#### Microcomputer Applications

The Project on Microcomputers in Development at Stanford University's Food Research Institute has, broadly speaking, identified three different microcomputing environments within which microcomputers can be applied. Using their typology these can be defined as:

- 1) the planning and budgeting field,
- 2) the area of administration and control,
- 3) research

Although Stanford lumps word processing in the planning and budgeting field, it has such wide applicability it appears that the fourth area of microcomputer application should be word processing. The vast majority of microcomputer applications can be encompassed within these four categories. Consequently, this paper will concentrate on the hardware,

software and training requirements needed to use microcomputers for:

- 1) word processing,
- 2) planning and budgeting,
- 3) administration and control and;
- 4) research

### Word Processing

Experience with a number of agricultural development projects that have introduced microcomputers has shown that invariably word processing has been the area of application that has taken off first. This is in contrast to expectations, as the microcomputers are usually purchased with research and statistical applications in mind. Yet, for a number of reasons these areas lag while word processing seems to be the obvious need that is first filled by the introduction of microcomputers.

Often the necessity of producing documents in English or another 'foreign' language is one of the major driving forces but once introduced, the capabilities of word processing to write, rewrite, revise and print out new versions proves invaluable. In contrast to other programs, where it seems to be most efficient to start with a simpler program and progressively move toward a more complex one, word processing appears to be a field where groups that are most productive start with a sophisticated package and slowly grow into the full use of the software. Groups that start with a simple word processing package quickly reach the limits of its capability. They are hesitant to change yet are usually frustrated by the inherent limitations of the software.

### Administration and Control

The second area of application that finds ready acceptance is that of control. Very quickly project staff realize they can use the microcomputer to help them maintain better control over such activities as vehicle mileage, overtime payments, fertilizer usage and warehouse inventories. These are perennial problem areas and administrators are overjoyed when they realize that microcomputers can, with a limited amount of demands on staff time, allow administrators to gain control in these areas. The administrative field is characterized by the need to manage and manipulate large sets of data. At the initial stages, this is often accomplished using inventory and personnel packages, but later on generally requires the use of more versatile, data-base management packages that can be programmed for specific applications.

## Planning and Budgeting

Both for actual projects and for proposed projects, planning is an area that has benefitted from the availability of microcomputers on development projects. It is in this area that the 'spreadsheet' programs have proven their worth. As the most readily available type of microcomputer program, and also perhaps the most easily transferrable, spreadsheets have provided a natural tool for analyzing alternative scenarios. These so-called "what-if" computations allow a wide range of assumptions and levels of inputs to be rapidly simulated. The latest spreadsheets also have the ability to produce graphics so graphical presentations can be developed directly off the spreadsheet without having to reenter the data. Also, using the power of the programming language incorporated in the newest spreadsheets, it is possible to build macro templates that can be used by secretarial staff to enter data and carry out complex calculations.

## Research

Microcomputers provide the ability to analyze complex data sets at isolated locations. They are particularly good for situations where the researcher needs to interact with the data and try different types of models to determine which one has the most explanatory power. This type of analysis requires more computer time than the normal batch type of mainframe statistical analysis but it provides a more robust type of analysis and in the end is likely to produce results that are more useful for the project.

Prior to the widespread introduction of machines that can address more than 64 Kb, statistical analysis on large data sets was extremely difficult. However, now with the standardization of machines that have 256 Kb, and in many cases 640 Kb with hard disk storage devices, microcomputers with one of the available statistical or optimization packages can handle all but the largest national data sets. In fact, at this stage microcomputer power may have exceeded the quantitative capability of many of the researchers.

## Hardware Concerns

In a field as dynamic as the microcomputer revolution, where technology is literally changing every six months, it is almost impossible to keep track of what technology is available in the market. This is a minor problem for on-campus microcomputer users but is a major concern for off-campus, overseas development projects. Even as campus support staff do their best to identify what the needs of project staff are, and will be in the future, they have to recognize that the technology they are ordering today

is not the latest technology of tomorrow. Yet, is this necessarily bad?

Microcomputer users on development projects have to be concerned both about operation of the equipment and about maintenance and repair. The latest 32-bit system with its 3.5 inch disk drive is not very useful if no maintenance facilities are available and if the only diskettes available on the market are 5.25 inch. Instead of spending inordinate amounts of time trying to locate and purchase the latest technology, campus support staff need to identify equipment that is standard and has some type of maintenance support in the area in question.

Even more importantly, they need to make certain that the equipment purchased will interface and work together. Buying a portable computer because of its ability to work on 220 volts and then buying an uninterruptable power supply (UPS) that only works on 110 volts is self defeating. Or buying a UPS that supports a maximum of 200 watts to backup a machine that draws 400 watts is frustrating at best and, at worst, a disaster if the machine and/or the UPS burn out. Yet, both of the above examples are real world cases that illustrate what can happen when on-campus staff do not invest the time to make certain that the equipment purchased has, in fact, the proper technical specifications.

Obviously, power concerns are one of the major areas where on-campus staff have to be involved. On projects where the power is 220 volts, 50 hertz compared to the U.S. 110 volts, 60 hertz the microcomputer equipment purchased either has to match the power or the power has to be changed to match the equipment. Either process is a viable alternative but they both have positive and negative aspects. With the discounts offered on U.S. campuses the cost of microcomputer equipment is often 50% less than the cost is for the same equipment at a dealer outside of the U.S. This argues strongly for buying it on campus and then shipping it to the project site. There are three major problems with this approach:

- 1) Equipment purchased in one country generally has no warranty in a second country and, thus, the equipment voids its warranty as soon as it leaves the U.S. Plus, the local dealer feels no responsibility to support the equipment since he made no profit on the sales.
- 2) Equipment purchased in the U.S. is usually 110 volt, 60 hertz and therefore must be used with a transformer. Also, as the U.S. uses a NTSC T.V. signal and other countries use PAL or other

standards local monitors will not work with U.S. purchased computers.

- 3) High technology equipment that is to be exported out of the U.S. has to obtain a special clearance from the U.S. Department of Commerce. This clearance can take from three weeks to three months to obtain.

In one case, an international center in Sri Lanka ordered equipment through a U.S. university in order to take advantage of the large discounts. After six months the center has yet to receive its equipment even though the money was deposited when the equipment was ordered. Ironically, the same equipment is available in Singapore at prices that were 30% more but now, due to regular price reductions, are the same as the prices paid. However, in many cases microcomputer equipment is not available locally or USAID purchasing rules and regulations make it almost impossible to purchase through a local dealer. Also, in many cases new dealerships for microcomputers have just been established and the quality and timeliness of service is yet to be proven.

Even if the microcomputers are purchased locally, are power switchable or the power supply can be converted, the unreliability and fluctuations in power supply can cause major problems for microcomputer users on development projects. Almost invariably it is necessary to provide some type of surge protection to protect microcomputers from electrical spikes and surges that seem to be endemic in most LDCs. Again, it is not easy for on-campus staff to be certain what type of equipment is required. In one recent case, a U.S. campus staff member ordered surge protectors that use fluctuations in cycles away from 60 hertz as the triggering device. Needless to say, when the equipment was placed in operation in a country that has 220 V, 50 hertz power, it was totally unusable. This is, hopefully, an isolated example but it illustrates that on-campus staff have to invest the time to research the equipment before ordering and that requests from the field require interaction between field and on-campus staff.

### Software Concerns

Obtaining good recommendations about software are extremely difficult. This holds true on campus, but is even more true overseas. A recent microcomputer applications workshop at the International Rice Research Institute (IRRI) in the Philippines identified a mechanism to screen and evaluate software as the first priority for microcomputer users in the third world. A development project that has an active on-campus microcomputer group would seem to have

a mechanism to minimize this problem, yet experience indicates that even this does not necessarily mean the requirements of the field team will be met.

For example, recently a project in French-speaking West Africa requested that their campus staff provide them a data-base management program that they could use to categorize French language bibliographic holdings. Support staff selected and purchased a program that would not support the special French language diacritical marks, nor would it easily exchange files with the word processing program that both units use. This latter point is critical; a program that cannot exchange files easily is not only frustrating but is also potentially dangerous. If the one program disk is damaged, the project data may be locked in a format that is not accessible. Compatibility and transferability are critical concerns for software and have to be two of the major criteria used when selecting software.

It may perhaps seem extraordinary but it is necessary to stress that software must work on the machine for which it is purchased. This is probably the biggest mistake that is made by campus staff. A UNDP funded project in India is still waiting to use its word processing system because the software purchased by the UNDP was for the wrong machine. Similarly, an economics research unit in Indonesia is unable to use its microcomputer for statistical analysis because the on-campus unit provided the 'latest version' of a statistical package which, in contrast to the 'old 192 kilobyte (Kb) version' required 440 Kb of memory. As the unit in Indonesia only had 256 kb of memory the version will not run until they either upgrade their machine or obtain a copy of the old version. Even more frustrating is to provide a software package, such as a word processing package, that does not support the printer that is available to the field unit.

Another frequent mistake is to provide software that is far too sophisticated and complicated for the level of the users and even for their requirements. Frequent examples of this are found in the selection of data-base management packages and statistical programs. While dBase-III may be one of the most powerful software packages available it is not very useful for a technician that wishes, for example, to build a simple inventory program to keep track of spare parts. A dedicated, menu-driven inventory program is usually far better at the early stages of the project. In most cases this also holds true for statistical packages. SPSS-PC is as powerful as the mainframe version but it is also equally as complicated to learn. A slightly less sophisticated but easier to use package is a far better means of introducing staff and cooperators to statistical analysis. As long as the data files that are developed

can be exported later on it is best to start with a package, preferably a menu-driven one, that can be learned quickly rather than one that requires intimate knowledge of the program before the user can even start to enter data.

### Training

Productive use of microcomputers on development projects requires a large amount of hands-on type of training. This training is required for long-term overseas staff, local staff, local counterparts and, in many cases, for on-campus staff. In addition to formal training there is also a need for staff to have sufficient time on the microcomputers for them to develop confidence and proficiency. It is to be expected that some staff will progress faster than others and, at some point, it may be necessary to formally recognize this fact by designating certain individuals as computer specialists in the different application areas.

Dating back to the mainframe computer there is often a tendency to try to restrict access to the microcomputers. This tendency manifests itself in an over-emphasis on security and also is seen in the usual practice of locking the program manuals and disks away. Clearly, this is self-defeating as competence on the microcomputer is only developed by use. All of the staff must be encouraged to use the machines not just during formal working hours but during off-hours as well. Even if additional staff have to be hired to ensure availability of the microcomputers it is a worthwhile investment and should be made gladly.

Formal training activities need to be organized at a number of different levels. One of the most critical, but often overlooked levels, is that of the electrical technician. It is a very worthwhile investment to train at least two technicians at a minimum to be able to clean, adjust and diagnose. Even better would be training to the chip level where they can identify system problems and replace defective chips when necessary. This level of expertise is not that complicated and can be obtained in a month by a competent electrical technician that has prior microcomputer experience and in two months by a technician that has no prior experience with microcomputers.

Training for local and cooperator clerical staff is an important activity that has to be emphasized. This type of training can be organized by long-term staff, by on-campus short term staff and, in more and more cases, by local, private (and public) sector organizations. Often the need for this formal training is ignored with the implicit feeling being that the local staff will learn 'on-the-job'. Obviously, given enough time this can occur, but experience indicates that an initial formal training

exercise is a much more efficient means of bringing staff up to a higher level of expertise. In some cases this training may only require three or four days, but it has to be well focused and include a large amount of time for hands-on experience. Such training as learning a formal computer language like FORTRAN, BASIC or COBOL, which is the usual first step for learning to use mainframe computers, is not the type of formal training that is needed for the microcomputers. Instead, the training should be in an application area, learning to use a specific software package, and must have the objective of producing a particular set of skills.

Microcomputer training for researchers, both local staff, cooperators and in some cases, for long-term staff, also needs to be recognized as a major requirement for effective use of the microcomputers. Again, this training should be addressed to a particular software package or packages, although, the disciplinary areas of application may be very broad.

Given this breadth of application, formal training requires a specialized set of skills that is often difficult to locate and identify. The mobile training course in MSTAT, an agronomic research management package, organized by Michigan State University, is one example of the specialized type training that is available. Similar specialized training is also available for other software packages at Asian educational institutions such as the Asian Institute of Technology (A.I.T.) and at the international agricultural research centers such as IRRI. However, there is still a need for more mobile courses for training in statistical software packages such as SPSS-PC and SAS as well as training in agronomic, research and project management packages.

### Recommendations

In order to address the needs that have been identified in this paper, project staff and on-campus staff must work very closely together. Of particular importance is the necessity of having similar hardware setups both on-campus and in the field. This allows campus staff to test both software and hardware for compatibility prior to shipment to a project. A significant degree of frustration, and resentment, will be eliminated if campus staff can always be certain that software and hardware shipped to the project staff will work when it arrives.

In line with the above recommendation, it is also necessary for the on-campus staff to have one individual that is identified and responsible for all microcomputer backstopping. This individual must be knowledgeable not

just about microcomputers in general but about the microcomputer setup and applications that are specific to the project. In most instances this means the individual needs to visit the project at least once a year and has to be actively involved and in correspondence with the project staff on a regular basis. Here, it is probably important to emphasize that, in general, this individual will not be a computer science specialist but will be a knowledgeable user that has disciplinary training pertinent to the project. Also, it must be recognized that technical backstopping is a professional activity and, therefore, the responsible individual should be allocated time for this work and be given credit for his/her expertise.

Finally, it is a fact of life that even with perfect planning there are going to be problems. In some instances these will entail software and disk failures while in other instances the failures will be related to hardware. In either case it is important that on-campus staff move expeditiously to solve the problem and keep field staff notified about the process so they can plan their work to coincide with the expected time of arrival of the repaired component or the replaced software. Often, given the relatively low cost of most microcomputer components, it may be more time efficient to purchase and dispatch a new one immediately rather than wait for lengthy repairs. But whatever the decision, correspondence with field staff to keep them informed about the status of the equipment is critical.

## SOME THOUGHT ON BUILDING DEVELOPMENT ASSISTANCE NETWORKS

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### Introduction

I am pleased to have this opportunity to share my views on building development assistance networks. As a member of this panel I will briefly review my involvement with research networks, highlight what I perceive as elements of successful networks, and discuss some of the unique problems facing us in the U.S. who are working with international agriculture research networks.

### Background

In my short professional career I have had the privilege of being associated with four research networks.

I spent four years working with a developing country coordinated research program, the All India Coordinated Rice Improvement Project (AICRIP) headquartered in Hyderabad, India which works with more than 100 research organizations throughout India. The next four years were involved with a discipline oriented informal network of rice plant pathologists coordinated from the International Rice Research Institute (IRRI) in the Philippines. Approximately 30 pathologists in 20 countries cooperated on several research projects. The subsequent six years were spent organizing and participating in the multi-disciplinary International Rice Testing Program (IRTP) which was funded by UNDP and headquartered at IRRI. The IRTP network has approximately 700 rice scientists from 300 stations in 75 countries. For the last three years I have been director of the International Soybean Program (INTSOY) at the University of Illinois where the International Soybean Variety Experiment (SVEX) trial program has cooperated with scientists in 132 countries since it was started in 1973. INTSOY has cooperated with a number of countries in establishing soybean utilization programs--most notably India, Sri Lanka, and Peru.

My experience with these research networks has made me a firm believer in the important role they can play in development assistance. At the same time, however, there are a number of essential ingredients to make them effective and without them, networks may not be worth the investment they take in time and money.

## Definitions, Types, and Role of Networks

Although Webster's Dictionary gives several definitions for network--none of them relate directly to the use of the word as we are discussing it in this session. The closest definition may be as follows: "an interconnected or inter-related chain, group or system i.e. of secret agents, of alliances or of beliefs". Although this does not precisely define our agricultural research networks, they do tend to have a little bit of all of these.

Plucknett and Smith<sup>1</sup> report that there are more than 100 formal international agricultural research networks currently operating. "International nurseries", the systematic exchange and testing of germplasm of various crops are the most prevalent type of networks. All International Agriculture Centers (IARCs) coordinate nurseries as an integral part of their research and development program. Other networks range from tackling agronomic problems, developing agricultural machinery, examining socio-economic constraints to crop production, learning about mechanisms for resistance in cattle to disease and developing new ways to use biotechnology to increase crop production in the LDCs.

The international research networks of the IARCs have many roles. The primary role is to involve and use the expertise of the national and international scientists in solving problems of mutual interest and, at the same time, provide the institute scientists ways to do research in different environments and cultural conditions. A critical mass of research capability is developed. The networks permit research personnel to work collectively on problems that individual scientists or national programs cannot do alone. Thus, limited financial and manpower resources are efficiently used in strengthening national programs. An especially important aspect of the networks is the ability to rapidly generate, test, adopt, and transfer new technology from the researcher to the farmer through the interaction of scientists, extension personnel, and farmers, which is made possible by training, workshops, and joint travel-study programs. Thus, the networks have the potential to serve a dual role--they provide lead research and also serve as an extension network for the results obtained.<sup>2</sup>

## Principals for Building Agricultural Research Development Assistance Networks

Since the IARCs have used the research network concept very successfully, I think it is appropriate to first review some of the reasons for the overall success of the IARC system.

Brady has outlined the major reasons for the IARC success as follows:<sup>3</sup>

- 1) Independence of political influence
- 2) Mission orientation
- 3) Proper blend of international and national activities
- 4) Staff and program continuity
- 5) Training and education opportunities
- 6) Strengthening of ties between LDCs and DCs
- 7) Strong international support

When we in the U.S. university community review the above characteristics of the IARCs, we can clearly see that we operate under considerably different circumstances than the IARCs. Therefore, we have a more difficult task to establish and operate agricultural research development assistance networks than do the IARCs. However, it is important to remember that a number of the factors listed above also apply to successful agricultural research networks.

From experience at U.S. universities and the IARCs, a number of principals have clearly evolved as being critical to building successful networks. Among these are the following:

- 1) Sharply focused research agenda - The problem to be worked on must be well defined. A realistic research agenda must be drawn up specifically to solve the problem of the participating developing countries and to help them improve their research capabilities and increase food production. Activities like germplasm testing of crops are well suited to networks. Many activities, on the other hand, are not well suited.
- 2) Strong mutual interest of network participants - Networks can be effective only when individual cooperators have a self interest in putting time, effort and resources into the program because they know they and their country will benefit from the network activities. Resources such as trained personnel, land, buildings, and time are limited for most cooperatives in LDCs. However, scientists who have a strong self-interest in the network usually can find necessary resources.
- 3) Flexible outside funding - Outside funding is a prerequisite for starting a network and for providing support for a number of the activities. This is especially true in the LDCs where foreign

exchange is scarce. International travel and the purchase of selected equipment is possible only with outside funds. Care must be taken, however, not to use outside funds to pay participants for conducting research, that must come from local sources as a sign of the commitment to the partnership.

- 4) Setting up advisor/working groups - A desirable format for network organizations includes working or advisory groups consisting of leading scientists in the participating national programs, relevant program scientists from an international center or U.S. university, and internationally known experts working in the program area. Advisory group members should represent the various component views of the program. Where networks are worldwide, regional groups may be created.

A working or advisory group should meet at least once a year to: review and evaluate the previous year's activities, discuss significant findings that will have cross-country implications, develop plans for the coming year, and chart the network's long-term strategies and objectives.

- 5) Planning, reviewing, and training opportunities for participants - Cooperating scientists must also be involved in developing network plans and reviewing progress at annual workshops or monitoring tours. Equally important is the opportunity to participate in training programs to help upgrade the expertise of those in the network who need it. Workshops, training programs, and monitoring tours should usually take place in the LDCs. Participants from the LDCs can often learn more by observing each other's successful research than from observing that in DCs.

- 6) Strong communications component - Quick, reliable communication is essential to keeping in touch about network logistics as well as sharing research results and future research plans.<sup>4</sup> A newsletter can be very helpful for larger networks. Funds for telex, telephones, air mail, air freight, and electronic mail and frequent visits by the leadership are a necessity.

- 7) Efficient leadership - Network leadership is of paramount importance. The leader must have the respect, confidence and trust of participants from a professional standpoint as well as personally. The leader must provide enlightened leadership

by encouraging high quality research which brings benefits and recognition to the participants' country, research program and to him individually, as well as to the collective network. The IARC's provide coordinators for networks they participate in. The coordinator must travel to various sites frequently to be conversant on the local problems and research activities.

- 8) Strong research base to support network activities - The institute coordinating the network must have a dedicated group of research scientists who devote a good share of their time to conducting research of interest and importance to the network. They must develop new technology to be tested in the network and follow up on research leads generated from network activities. Many of the IARC programs are organized to provide strong support to networks. In general, we in the U.S. university system are not organized to provide this type of support.

### Constraints We Face in the U.S. University

I would like to make a few comments on some of the constraints we face in trying to organize agricultural research networks.

- 1) Lack of financial support - Funds for conducting international agricultural research by U.S. universities are far too limited. The "democratic system" of giving a small piece of the action to every university further prevents the development of "centers of strength" in development assistance. Since networks require substantial funding for overseas activities, they are difficult to organize and run efficiently.
- 2) Lack of flexibility - U.S. universities do not have the flexibilities of the IARCs because of not only a lack of funds, but also the type of funds. The bureaucracy of getting major financial support for networks requires time and effort, but also has built in political restrictions which prevents a free and open exchange.
- 3) Lack of commitment - Most universities lack a strong commitment to international development activities. Naturally the primary goal of the universities is to serve their state or the U.S. in general. Most individual faculty members at U.S. universities must work towards tenure and therefore, do not have an interest in participating in the

international development projects. As a result, programs or development assistance networks frequently are operated with the interests of those in the LDCs as being secondary.

### Conclusion

In spite of these rather serious constraints, I still believe the U.S. university system has a lot to offer in development assistance. The question we must ask ourselves is how we can work together to get congress to allocate more funds for developing assistance networks, how we can provide more flexibility and efficiency in using funds, and how we can blend strong commitment with the strong capabilities of selected U.S. university projects which will truly help those in the LDCs help themselves through appropriate technology.

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## CONSIDERATIONS FOR NETWORK DEVELOPMENT TO SUPPORT U.S. TECHNICAL ASSISTANCE

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Network arrangements are considered to augment technical assistance for agricultural technology development in third world countries. Donor agencies now promote the development of networks for researchers and educators for purposes of mutual support and information exchange among peers from countries with related concerns. This paper will address the nature and needs for successful network relations, the role for those networks and the experience of the Farming Systems Support Project (FSSP) as a network.

### What is a Network?

Common interests, concerns, opportunities and/or missions provide the reasons for systematic group interrelations that are the basis for a network. The degree of affiliation suggests a range of formality from casual networks to structured ones with distinct membership and carefully organized events. Networks are "fueled" by common interests but "lubricated" by communication. Susan Harris with CIAT has written a cogent statement in a recent paper, "Information Services: An Essential Mechanism in the Communication with National Institutions", which explains this role of information and communication. Harris writes "Information, transferred through communication, interconnects all the elements of the scientific research community, helping it to function as a network or system instead of as a heap of disconnected parts". (1)

### Networks: Opportunity or Fancy?

Several questions come to mind as enthusiasm mounts for more international and interinstitutional cooperation in technical assistance.

- 1) Will network collaboration achieve sufficient positive results to offset the time and information exchange costs associated with network organization, management and communication?
- 2) Are the U.S. Universities, USAID and International Agricultural Research Centers exploiting the potential for mutual institutional support to technical assistance programs in the third world countries?

- 3) Are the potential mechanisms for augmenting network actions to support U.S. technical assistance programming fully exploited within BIFAD and the University/AID system?
- 4) Will networking simply occur or must such interactions be manipulated?

### Expectations of a Network

Networking activities provide insights for the development process through observation of the experience of others from research and institutional change. Thus, an obvious benefit of a network is that it allows institutions to leapfrog development problems by building upon the experience of others and thereby not be required to "re-invent the wheel".

A disadvantage in network communication is where conditions are so dissimilar that the learning experience, when applied in another setting, is not functional. This situation can cause more cost and delay than if the problem is resolved directly within the original setting. Evolution may be the best instructor in some situations even when repetition is involved.

In an attempt to promote networks where conditions or experience are dissimilar, there may be a gap in communication. When this happens there is little hope of a functional learning experience. Networks that evolve naturally are not likely to face this problem; those that are promoted or encouraged from outside interests run the risk of creating an artificial setting for a network with little chance of surviving. Networks must ultimately support themselves. Outside interests can facilitate their formation and support the principles underlying the networks.

### Network Development Principles

A network assumes a character of its own and in each case network interactions are accompanied by a set of principles. For successful network development and operation by agricultural development scientists, some principles to consider are that:

- 1) Peer experience exchange is desired.
- 2) Researchable problems can be addressed and peer interaction to follow will provide usable results.
- 3) A commonality exists in the problem sphere and more than one institution or individual can interact in solving that problem.

- 4) Experience is available to be shared or can be developed collectively, and in a specialized way, such that it can be shared.
- 5) The collection and sharing of experiences of participating parties will help those parties achieve more than they would operating alone.
- 6) The marginal cost (financial, time, opportunity) associated with gathering experience from other institutions is sufficiently offset by benefits to merit that interaction.
- 7) Peer interaction is supported and sanctioned by higher authority in the respective countries/ institutions sharing a common concern.
- 8) Peer capability and interest is relatively equal.
- 9) Communication barriers, including those of language and discipline, can be overcome such that experience can be communicated.

#### Network Development Criteria

Consideration must be given to the process of encouraging networks based upon criteria of need and also potential results. Need alone is not a sufficient condition.

Development of networks revolves around at least the following criteria:

- 1) A well-defined problem focus or common interest.
- 2) Sufficient and sustained support to provide for continuity over a period of time necessary to achieve technology development and transfer resulting in problem solution.
- 3) Sufficient flexibility to allow for redefinition of the problem and scope of activity as solutions and new hypotheses appear.
- 4) Well established ground rules that nurture differences in procedural methodologies for problem resolution.
- 5) A common language base including the professional jargon and the spoken idiom used within the network.
- 6) Time horizons that accommodate costs and participation needs.

- 7) Legitimacy as recognized and institutionalized within the governmental and administrative hierarchy within which the network activity is to be established.
- 8) Sufficient autonomy such that the peer groups can establish rapport with their associates and clientele so that problem resolution will be extendable.

#### Network Support: Technical Assistance

How can university and AID-supported entities such as the CRSPs, the FSSP and other support projects contribute to the networking process and network development? Given the principles and criteria previously stated, how much should we do, how much can we do, and what can we accomplish in support of successful network interrelations? Must we first operate a successful technical assistance network to successfully support third world networks?

#### Research and Support Networks

The CRSPs, and IARCs, as networks and network support systems, provide research coordination on priority and recognized problems. Exchange of CRSP and IARC results contributes to reduction of agricultural production constraints and/or realizing opportunities previously beyond normal reach. Furthermore, these entities provide training and information exchange opportunities to strengthen the research base through common concerns and response oriented linkages. While problem or commodity-specific, the IARC and CRSP programs address constraints that have origins in both the biological and human spheres as they relate to successful technology development.

Similarly the FSSP operates as a network and a network support system, through its mandate. It provides support for a training base through farming systems materials and training unit development, through preparation of trainers, and by support to USAID Bilateral contractors. Technical assistance support identifies and prepares teams for short and long term assignments, and coordinates efforts among donors associated with training and networking programs within the general scope of the FSSP. The project provides network support and assistance by linking donor activities at the national level where overall systems programming demands a concerted effort. Network assistance legitimizes program development within the political and institutional structure through training and workshop activities where various levels of the government and peer groups participate. Another form of FSSP network support is its communication support to various AID assistance entities and recipients

through newsletters, documentation programs, networking papers and the distribution of annotated bibliographies.

Experience suggests it is essential that technical assistance entities work successfully as a series of networks if they expect to achieve interaction among third world agricultural development scientists. Technical assistance and attendant funds can influence inter-country scientific linkages and directly support the formation of or existing networks. Where the linkage is strong between a technical assistance contractor and the host government institution, linkages between technical assistance contractors or between various countries often are weak. These linkages can be fostered, supported and promoted through networks. If they are, when the technical assistance linkage is severed (for whatever reason), the recipient institution or host country can be in a stronger position because of the established networks. Bilateral contractors, donor funded projects and programs, have an opportunity to contribute by accelerating the evolutionary process of network activity. This role is one of facilitating the ability of the scientific research community to interact through the formation of linkages.

#### The FSSP Case

Several examples might be given of network linkages among technical assistance entities. I am very familiar with one. The Farming Systems Support Project, as an extension of Title XII concepts supports BIFAD programs through twenty-one Title XII universities and four consulting firms (Figure 1). The FSSP addresses program management and related concerns through administrative coordinators who are members and participants in such organizations as AUSUDIAP and NASULGC.

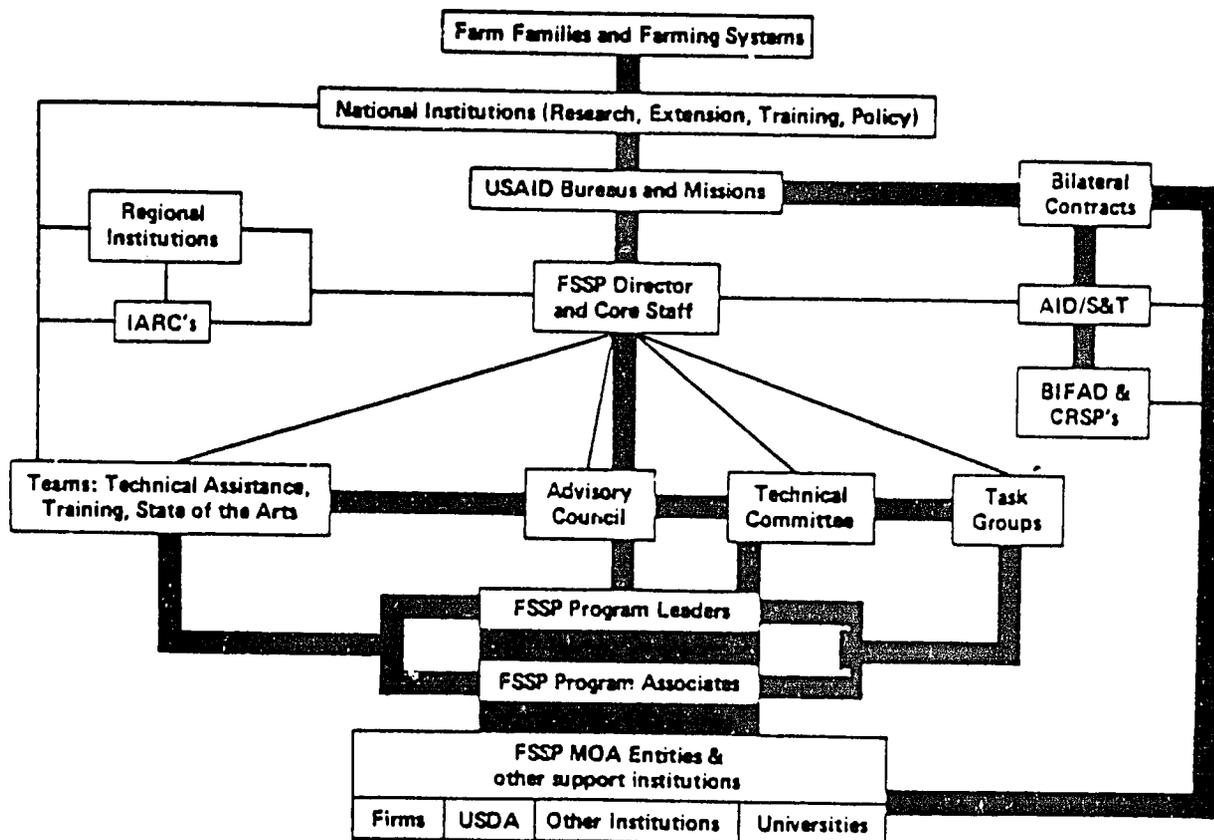


FIG 1. FSSP Organizational and Response Structure

FSSP specifically provides for coordination and mutual support among the support entities to USAID programs depicted in the objective framework presented in Figure 2. FSSP works with many of the major universities who are participants in the CRSP program and thereby provides on campus opportunities for exposure to and training with the farming systems perspective. A workshop held at CIMMYT on farming systems with ICRISTAT and the Sorghum Millet CRSP is an example. The FSSP and CRSPs can expand this activity in the future.

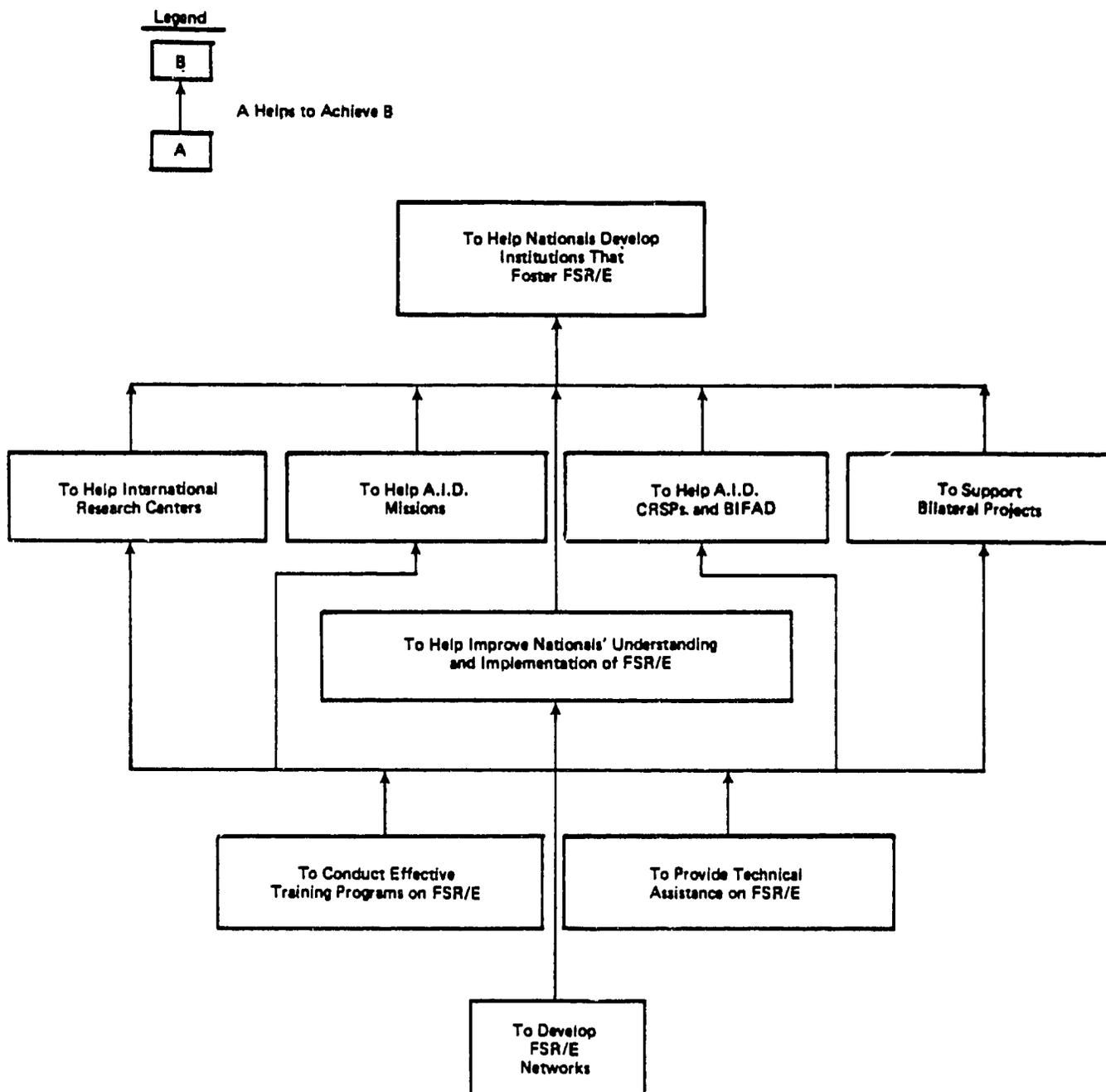


FIG 2. Primary FSSP Program Goal/Objective Framework

FSSP joins the IARC's to complement linkages with national programs through adaptive research networks and training programs. FSSP works with the programs of CIMMYT, IITA, ILCA, and IRRI, and additional opportunities are possible with ISNAR, ICRAF, CIP, and CIAT. Regional centers and organizations are points of FSSP interaction such as CATIE, (center for Tropical Agricultural Research and Training), and PRECODEPA (Cooperative Regional Potato Program) in Central America, SAFGRAD (Semi-Arid Food Grain research and Development Program) and WAFSRN (West African Farming Systems Research Network) in West Africa, ARFSN (Asian Rice Farming Systems Network) and SUAN (Southeast Asian University Agrosystems Network) in Asia.

The research activity of a CRSP provides a natural linkage for networks throughout a very specific problem orientation. The more general nature of FSSP support, within the farming systems context, suggests addressing the whole farm system and concepts associated with support to technical assistance for the research and extension linkage, in a broad sense. Thus, the FSSP as a network must address multiple concerns leading from, through, and out of technical assistance training and institutional development where the mandate includes commodity, cropping systems, mixed crop livestock, and family farm systems concerns.

Whether it is through the CRSPs, the FSSP, or the technical assistance projects, where the research and extension focus is to address constraints within the system, FSR/E demands a capability to organize and respond to those constraints in a manner that can successfully place problem solutions back into the farming system. Thus, as the farm system includes a network of linkages between production and management activities within the farm family, U.S. technical assistance must include network linkages among scientists and institutions bringing unique components to bear on the overall system of research and development in agriculture.

Specific network support activities of the FSSP include:

- 1) A process (the FSSP structure) through which support entities and others can link together to strengthen networks in the developing world.
- 2) Establishment of informal U.S. based bilateral contract networks to address regional problems in technical assistance through the participation of national counterparts.
- 3) A basis for institutional linkages and development particularly in the university sphere with respect

to institutions such as the University of Zimbabwe, the University of Cameroon, the University of Los Banos, Philippines and Edgerton College in Kenya.

- 4) An advisory and technical support mechanism through the FSSP technical committee with U.S. and regional representation.
- 5) An FSSP developed farming systems research inventory of projects supported by all donors and national governments. Communication between projects is possible and emerging.
- 6) Training through domestic workshops where inter-university support can evolve in shared preparation for technical assistance assignments.
- 7) Training-of-trainers assuming that all technical assistance projects and training activities are associated with a learning process either through degree courses, short courses, or informal in-service activities. Trainers may effectively utilize network support and contribute to those networks.
- 8) A training unit development base for trainers to use in the development of courses designed to fit specific country needs. This mechanism can be utilized by U.S. and third world universities to develop their own training unit materials and to train trainers.
- 9) A handbook for briefing and debriefing technical assistance teams as a device to maintain a memory and resource for technical assistance work.
- 10) A computerized bio-data system for rapid technical assistance team identification, for location of various short-and-long-term assistance personnel and for identifying evaluation teams.
- 11) Establishment of an evaluation panel concept where individuals from various entities might serve as a pool from which an external evaluation panel may be drawn to work with specific bilateral contracts. This would provide continuity throughout the contract life heretofore unavailable through the AID evaluation process.
- 12) An activity reporting framework whereby returnees from technical assistance assignments with the FSSP and support entities can post specific results in a short data base managed summary. This resource can be called upon easily for technical assistance preparation and communication on a given problem area or for a given country.

- 13) Technical support for state-of-the-art reconciliation between the Asian-based agroecosystems research and farming systems research via the auspices of the East-West Center, Hawaii.

### Development of Networks

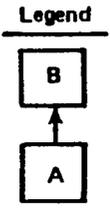
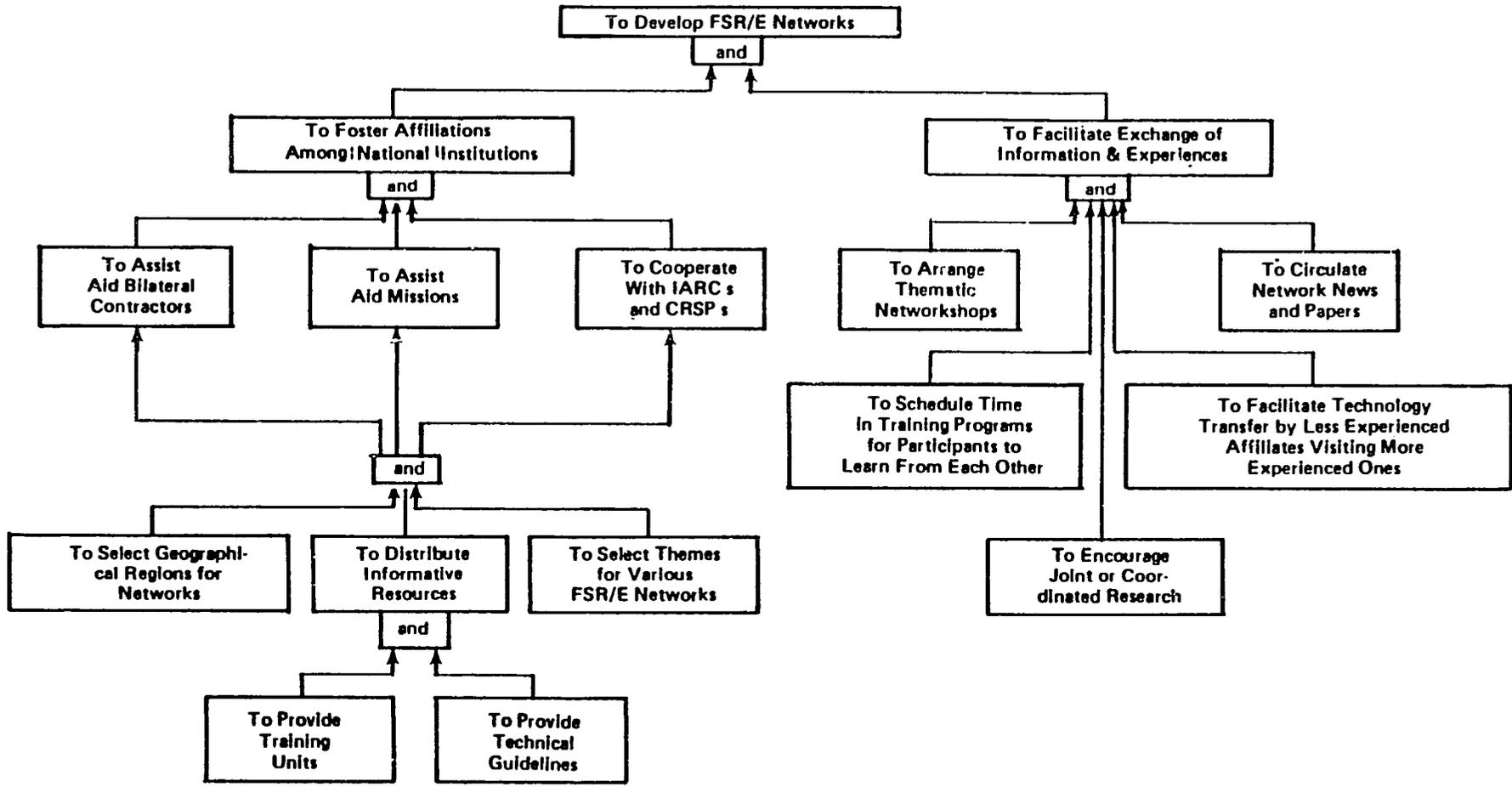
The FSSP is responsible primarily for "networking". That is, the FSSP desires to stimulate peer interaction and technology exchange for agricultural research and extension. To the extent possible, appropriate formal or informal networks may evolve or can be stimulated to meet specific needs. The FSSP objective to develop FSR/E networks is rooted in several basic causal objectives (Figure 3).

This objective oriented framework may be viewed as a basic structure for the inclusion of the principles and criteria for networks set forth above.

Numerous network cases could be presented. I will follow briefly a recent experience of the FSSP in networking among livestock systems researchers in West Africa. The concern is to reduce constraints to improved production in mixed crop and livestock systems. A commonly considered hypothesis is that animal traction can enhance food crop production in Africa as it has in other regions of the world.

Contributions to the emergence of a potential network in West Africa of mixed crop and livestock systems researchers are numerous (2). ILCA and other international centers have provided a basis for addressing the question through targeted applied research activities. An FSSP task force involving university, consulting firm and IARC input proposed a strategy for better understanding the state-of-the-art in this important area. As many as 60 percent of the farms producing food crops in Africa utilize animals in some way. The donor cycle in support of livestock is declining again but the systems issues should not be overlooked.

The Kansas State University/FSSP symposium in 1983 focused on livestock systems. Several workshops in West Africa (Burkina Faso, Gambia) further specified need on the part of West African researchers for interaction. Numerous working papers, professional exchanges, and newsletter articles and informal communications further contributed to an emerging dialogue. A livestock task force was created within the FSSP and their report on the state-of-the-art provided recommendations for further activity in this area.



A Helps to Achieve B

FIG 3. FSSP Network Development Program Objective Framework.

In April 1985, a "workshop" was held in Togo for West African participants to address needs in mixed crop and livestock research from a farming systems perspective. The demand for a regional workshop on animal traction and FSR/E arose from concern expressed by participants in previous FSR/E training activities that too little attention in FSR/E was placed on mixed crop and animal systems in West Africa. USAID Togo offered to host the workshop for participants from Gambia, Senegal, Burkina Faso, Sierra Leone, Ghana and Togo. From that workshop plans were made for periodic network meetings and a general research/information exchange agenda was set. Enthusiasm runs high for the activity because the limited number of isolated research and extension people in this problem area now have an emerging peer association for mutual support.

In conjunction with ILCA, the FSSP is holding a workshop in Ethiopia on livestock in mixed farming systems to offer guidelines for future research in this area. The ultimate success of these networking activities will depend upon appropriate and useful technology development results to assist farmers, continuity among participating research and extension people, a flexible network structure that continually recognizes that the ultimate client is the farmer and sustained local and regional financial support for the network.

### Conclusion

The potential for increased inter-institutional linkages and support among technical assistance and research institutes is extensive. BIFAD can provide strengthened linkages in particular among universities and thereby strengthen the total system with which universities interface. AUSUDIAP can encourage more program-oriented linkages among universities to support the AID technical assistance system. The network connection between international centers and national research institutions needs further attention through various networks that can be strengthened by bilateral contract technical assistance programs. The IITA experience in Cameroon shows considerable promise.

The agenda for technical assistance, in a bilateral context, needs to be raised to a network context. Every scope of work for bilateral technical assistance along with every international center commitment to regional activity should spell out a network support mechanism while maintaining the integrity of support to unique national programs and problems.

Success in U.S. technical assistance will come by being able to consider the entire research and extension system regionally and in a given country. Serious commodity

and problem oriented constraints must be extracted from the farm system, resolved and returned through an adaptive approach that places the improved technology back into context for the farmer. The degree of fundamental research specialization needed to address these constraints is such that collaboration with the adaptive research and extension system that serves the farm system is imperative.

The network of support required to address this multi-faceted problem must be more than that proposed solely for the third world recipient environment. Support services such as CRSPs and IARCs must have a mode for interaction--networking if you wish--that addresses vertical or problem/commodity concerns as well as horizontal or systems and holistic linkages. This will not simply happen. Through networks such as that emerging from the FSSP and the CRSPs, BIFAD has an opportunity to help AID and the universities achieve the illusive goal of meaningful and lasting technical assistance.

#### Notes

(1) Susan C. Harris, "Information Services: An Essential Mechanism in the Communication with National Institutions". Communication and Information Unit, Centro Internacional de Agricultura Tropical (CIAT), Apartado Aereo 67-13, Cali Columbia.

(2) Susan Poats, et al., "Togo Networkshop Report", FSSP, 1985.

**BUILDING POLITICAL AND FUNDING SUPPORT FOR**  
**INTERNATIONAL AGRICULTURAL DEVELOPMENT**

William P. Flatt  
College of Agriculture  
University of Georgia

I am really a substitute today for L.S.U. Chancellor, Rouse Caffey, who was scheduled to give this presentation. Last week I was called and asked to pinch hit and substitute for Rouse Caffey, and I didn't hesitate a minute. I knew that Rouse and I had a lot in common--mostly in appearance. He is built just about like me--short and fat. I went to the doctor and he said, "Bill you have furniture syndrome." I said, "Doc, what in the world is furniture syndrome?" He said, "Your chest is in your drawers".

Although our physical appearance is similar, Rouse's knowledge of international programs is far greater than mine. He has travelled widely and has actively participated in international research programs. My experience has been primarily as the Legislative Chairman of NASULGC Division of Agriculture. The Title XIV task force, which I chair, included international programs in the recommendation for the 1985 Farm Bill.

Larry Apple and I were in Washington, D.C. recently making our presentation to the House in support of Title XIV of the 1985 Farm Bill. Larry put the matter of the farmers' problems in perspective by stating that international markets were the key issues affecting the profitability of U.S. agriculture. Larry had been representing the international programs during the development of Title XIV, and I think you will be proud of the outcome. Both the House version and the Senate version strongly emphasize international programs. I think that an international emphasis will be in the 1985 Farm Bill, if they ever get around to passing it.

We recently had an opportunity in the area of public relations that could affect the attitudes of millions of people of Georgia. It came about as a result of the concern on the part of the Atlanta television media about starvation in Ethiopia. We have had a long time close working relationship with personnel at Channel 2, WSB-TV. They wanted to do a different angle on starvation in Africa and they inquired about what Georgia personnel were doing about solving the problem of starvation in the underdeveloped countries. Personnel in the College of Agriculture of The University of Georgia are actively involved in several areas

of Africa, including Burkina Faso (formerly Upper Volta). Dr. Darl Snyder went there with a team of the television personnel to film what was happening. In addition, one of the most respected people in Georgia, Dr. Glenn Burton, an ARS-USDA Plant Geneticist and an Alumni Foundation Distinguished Professor of Agronomy went with them to show the research he has been doing there in cooperation with faculty at the University of Ouagadougua. Dr. Burton's pearl millet and some strains of bermudagrass he developed have great potential there. About five of the former students at The University of Georgia College of Agriculture are in Burkina Faso. They are now back in Africa putting into practice what they learned about ways to improve the plight of their people. In addition to the show being delivered as prime time news for a week, they had so much good information and they received such a good response from the public, that they presented an entire hour program on a Saturday. As a result of that people all across this state, the citizens of the state, the farmers, the people in all classes of life had an opportunity to see that The University of Georgia was doing something to help the plight of these people.

Rouse Caffey and I have another thing in common, and that is in our roles at our respective institutions. Our titles are different, but our jobs are the same, and that is to administer the research, teaching and extension programs in agriculture in our respective states. Each of us goes about it in a different way. Each of us has the responsibility though to relate with the people of the state--the ones that are really responsible for providing the support for our programs. In Georgia, over 70 percent of our funds come from taxes paid by the people in the state of Georgia. In fact if you add the internal income that is generated by sale of agricultural products generated as a by product of the research, it would exceed 70 percent. A large share of the federal dollars that are coming back to us were paid by taxpayers in our respective state. So we feel that we have a responsibility to let the general citizens as well as the legislators, know what we are doing with the tax money we receive, and how are they benefitting as a result of it. Legislators are just like anybody else, they want to know, "what have you done for me lately." We have some strong supporters in the legislature. In spite of the fact that two-thirds of the people in Georgia now live in the metropolitan, urbanized area (mainly Atlanta), we're still a rural state. We still have influential rural legislators, and a strong House Agriculture and Consumer Affairs Committee, that is concerned about commercial agriculture. They work to see that the College of Agriculture gets its fair share of funds and that we use those dollars to benefit the farmers of Georgia, the agribusinesses of Georgia, and the citizens of Georgia.

Rouse and I both work with the leadership within our college, and we take pride in telling others about the success stories resulting from the research and extension programs in our respective states. The 30 to 50 percent return per annum resulting from investments in agricultural research and Extension is impressive, but we try to localize that and tell them how it is in Georgia--how they are benefitting from it directly.

In Georgia, we have a fishing trip once a year with the Chairman of the House Agriculture and Consumer Affairs Committee so that we have a chance on a very informal basis to discuss the total programs. He usually invites the Director of the Experiment Stations, the Director of the Cooperative Extension Service, the Director of Resident Instruction, the Dean, the President of The University and a few other folks to come along. In the past people like United States Senators, or the Chairman of the Board of Regents, and the Chancellor of the University System were included so that we could talk about problems related to agriculture. That is the informal type of approach to encourage open communications. The reason I am mentioning this is that the best way to handle communications problems is one on one. Mass media--television, newspapers, etc., set the tone and inform people about what is being done. However, appropriations are another, more complex matter and close working relationships are of utmost importance.

Georgia produces more peanuts than any other state in the union and this past year we produced over 50 percent of them. The level of production was about 3,400 pounds of peanuts per acre. We have a very strong peanut commodity commission and they support our agricultural research. A few years ago, we became interested in participating in the International CRSP program on peanuts, as well as one on beans/cowpeas. Darl Snyder helped to set up meetings with the House Agriculture Committee Chairman, the Chairmen of the Commodity Commissions on Soybeans, Peanuts and various others to talk about broadening our base of operations and becoming involved in international programs. This would help us to do a better job of helping the people in the state of Georgia as well as assist developing nations. The ground work was laid then, and we got a commitment of the full support of that entire group.

That was the beginning. Later Georgia was chosen to lead the \$9.85 million peanut CRSP program for peanut research. The Athens Banner Herald wrote it up as a big news item with a headline that said "100 MILLION DOLLARS", instead of \$9.85 million. Then it got editorialized in another newspaper and further exaggerated to a BILLION DOLLARS!! It was misinterpreted that AID was spending a billion dollars to develop competition for the Georgia

peanut industry. All of a sudden a \$9.85 million program over a five year period for several cooperating states was expanded to a billion dollar competition for Georgia peanut farmers! Had it not been for the ground work that had been laid prior to the misleading publicity, and had it not been for the fact that the Georgia legislators and peanut farmers had an innate trust in The University of Georgia, we would have had a full scale rebellion. We tried to correct the misinformation on an individual basis as well as through mass media. Broadus Browne, Director of Agricultural Experiment Stations when this happened, utilized the Agricultural Communications Division personnel, particularly Terri Blackwell, to prepare and distribute news releases putting it straight but without being defensive. He emphasized the fact that Georgia peanut farmers will benefit from the program. Introductions of new and improved peanut germ plasm could result. Better ways to control insects, diseases, and weeds, and ways to cope with drought could be learned. Also we can develop markets in developing countries by having people that ordinarily do not include peanuts in their diets learn how nutritious and delicious they are. Broadus did a good job of turning the adverse publicity around.

Nyle Brady called me at home one morning about all this upheaval over the peanut CRSP. He inquired if we were in trouble with our legislators because of the international peanut program. My response was that we have not lost any state funds, and we have no indication from any of our congressmen or senators of any opposition to our involvement in international programs. A summary of our state appropriations over the past decade would indicate that we have fared quite well. The Agricultural Experiment Station appropriations would have been affected if the problem were real. In fiscal year 1972-73 the state appropriation was \$6.4 million; it was \$9.7 million in 76-77, \$18.2 million in 1981-82, and this year (FY 1985-86) the appropriation for the experiment station is \$27.2 million. The Cooperative Extension Service state budget was \$6.1 million in 1972-73. The state appropriation was \$8.9 million by 1976-77, \$17.8 million in 1981-82, and the state appropriation for FY 1985-86 is \$27.0 million. If there had been any real backlash as a result of the peanut CRSP it would have been reflected in terms of interfering with our relationship with the state government leaders.

Our 1985 annual report will include some of the research and Extension results from our involvement in international programs. I am optimistic that our clientele, including farmers and legislators will be pleased with the progress that is being made--on their behalf.

**UNIVERSITY INVOLVEMENT IN INTERNATIONAL AGRICULTURAL  
DEVELOPMENT ACTIVITIES:  
IMPORTANT ISSUES FOR PUBLIC EDUCATION**

Earl Kellogg  
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Introduction

Direct involvement in international agricultural development is a relatively new set of activities for most Land-Grant Universities. Intensive participation in these programs dates back no earlier than the 1950s for most institutions and many were not heavily involved until the 1960s or 1970s. These periods of involvement are generally less than 30 percent of the life of most Land-Grant Universities.

Because Land-Grant Universities are traditionally sensitive to state and national clients' needs and concerns, it is only natural that discussions would occur with these clients about university involvement in international agricultural development activities. Because of the relative newness of these activities and recent economic difficulties of farmers, the discussions related to the appropriateness of these activities are both relatively recent and increasing in intensity.

At a result of these discussions, certain questions or issues are being raised that should be addressed. In this brief presentation, I will enumerate questions that seem to be of interest to the public regarding international agricultural development and universities' involvement in these activities. In particular, the focus will mostly be on the evidence that is being developed regarding one of the questions or issues that seems important to many. That question is: If Land-Grant Universities help developing countries increase their domestic agricultural production, won't that have a negative impact on U.S. agricultural

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<sup>1</sup>Speech given at the 1985 Annual Meeting of the Association of U.S. University Directors of International Agricultural Programs, Athens, Georgia, May 31, 1985.

<sup>2</sup>Associate Director of International Agriculture and Professor of Agricultural Economics, University of Illinois.

exports to these countries? This question seems to be an important issue for farmers, farm organization leaders, university agriculture administrators, and persons in USDA and AID. To build solid political and funding support for university involvement in international agricultural development activities, this issue and several others must be addressed.

### Observations and Issues of Interest

During the past four years, I have had an opportunity to discuss international agriculture development activities with various public and private groups in the U.S. A set of observations and issues in which people have an interest has emerged from this experience. These questions or issues need to be addressed if public education programs relating to international agriculture development activities are to be effective. Briefly, these issues and observations are as follows:

- 1) In talking with the public about international agricultural issues, one should be prepared to discuss industrial countries' agricultural trade and policy issues as well as questions relating to agricultural development in developing countries. It seems people are better informed about foreign country policies that affect U.S. agriculture than about why nations like Japan and those in Europe do what they do. There is little understanding in the U.S. about the rationale for agriculture policies and actions of competitors and customers.
- 2) There still seems to exist a fundamental lack of understanding regarding the reality and complexity surrounding the world food situation. Why are millions of people hungry while the U.S. has surplus agricultural production is a question often asked. "If they would let us, we could feed the world" kind of attitude still prevails among many people.
- 3) There are major concerns about the mixing of political and military objectives with our agricultural assistance efforts. I am surprised by the strength of this concern among people with whom I have talked. Food embargoes, export limitations, military aid meshed with agricultural assistance are troublesome to many.
- 4) Another common question involves people wanting to know what kind of actions, strategies, and particular activities are most effective for U.S. involvement in international agricultural

assistance. What mixture of aid in terms of food aid, commodity research, assistance with policy changes or agricultural university development is appropriate for developing countries?

- 5) What are the major international agencies and how are they related to each other? How do these affect American agriculture? These questions reflect a general lack of knowledge by many Americans of our own bilateral aid agencies as well as of multilateral agencies. The World Bank actions in agriculture seems to be of concern to many.
- 6) What kind of actions are most effective for small organizations to undertake as they participate in agricultural development activities? Church groups and private voluntary organizations are very interested in this question. They perceive their role as being different than government agencies but many people are not clear on how these smaller agencies, which they may support, can be effective.
- 7) The most often asked question is: "What can I, as an individual, do to make a difference?" We need to be able to answer that question in development education programs.
- 8) The last question and the one I want to address more fully is: By having Land-Grant Universities help developing countries increase their own agricultural production, won't this mean these countries will reduce their agricultural imports from the U.S. and further aggravate the bad situation in which American farmers find themselves.

### Agricultural Assistance and U.S. Agricultural Exports

There are several reasons why steady improvement in the economies of developing countries are important to people in the United States. Humanitarian motivations cause many to be concerned about providing economic opportunities for people of developing countries so they may improve their levels of living above mere existence. In addition, it is felt that political instability, unrest and rising global violence and terrorism that affects Americans are partly due to economic problems in developing countries. Security and peace for Americans depend in part on peace and stability in the developing world. However, theoretical or solely emotional "it is good to do" arguments will not be sufficient for addressing the concerns of many people

about agricultural assistance. They want to see the evidence, data, and analysis related to the effects of agricultural development assistance on U.S. agriculture.

Part of the concern about agricultural assistance stems from the increased influence that international phenomena have on American agriculture as reflected in the rapid increase in the value of U.S. agricultural exports and imports since 1970 (Table I).

**TABLE I. VALUE OF U.S. AGRICULTURAL EXPORTS & IMPORTS  
1960, 1970, 1984 FISCAL YEARS**

<u>Category</u>	<u>1960</u>	<u>1970</u>	<u>1984</u>	<u>1960-1984 Percent Increase</u>
	-(Million Dollars)-			
U.S. Agricultural Exports	4,628	6,958	38,010	721
U.S. Agricultural Imports	4,010	5,686	18,910	372

Source: ERS, USDA U. S. Foreign Agricultural Trade Statistical Report (various years)

While most are aware of the increases in U.S. agricultural exports, not so well recognized is the increase in agricultural imports - many of which are commodities being produced in the U.S. Therefore, the U.S. has become an important customer for the agricultural exports of several developed and developing countries.

Not only have agricultural exports increased rapidly, they have become a more important component of farm income. In 1983, U.S. agricultural exports were 49 percent of the gross national product of the farm sector - double the importance 13 years earlier (Table II).

**TABLE II. VALUE OF U.S. AGRICULTURAL EXPORTS AS PROPORTION  
OF FARM SECTOR GROSS NATIONAL PRODUCTION**

<u>Category</u>	<u>1960</u>	<u>1970</u>	<u>1983</u>
	-(Million Dollars)-		
1. U.S. Agricultural Export Value	4,628	6,958	34,771
2. GNP of Farm Sector	21,400	28,600	70,800
3. (1) as % of (2)	21.6%	24.3%	49%

Source: ERS, USDA - U. S. Foreign Agricultural Trade Statistical Report (various years)  
U.S. Department of Commerce - Statistical Abstract of the United States 1982-83.

Further evidence of the importance of exports to American agriculture is the proportion of various commodities exported (Table III).

**TABLE III. EXPORT SHARE OF TOTAL U.S. PRODUCTION OF SELECTED COMMODITIES, 1982**

<u>Commodity (units)</u>	<u>Production</u>	<u>Export</u>	<u>Export Share</u>
Wheat (thousand bushels)	2,808,737	1,525,000	55%
Cotton (thousand bushels)	11,963	6,263	53%
Rice (100,000 lbs.)	154,216	67,500	44%
Soybeans (metric tons)	60,677,000	24,522,081	41%
Soybean Meal (metric tons)	24,235,000	6,448,873	27%
Corn (thousand bushels)	8,397,000	2,050,000	25%
Soybean Oil (metric tons)	5,462,000	918,409	17%

Source: USDA: Agricultural Statistics 1983 and American Soybean Association Soya Bluebook, 1983.

Over the past several years, these exports have increasingly gone to developing countries. As shown in Figure I, the proportion of U.S. agricultural exports going to these countries has increased from 30 percent in 1976 to 46 percent in 1982. Within this time period, the value of U.S. agricultural exports to these countries increased by 17 percent per year. Therefore, developing countries are among the most promising growth markets for U.S. agricultural exports while Europe and Japan are probably not the growth markets that they once were. On a commodity basis, less-developed countries are of varying but substantial importance to U.S. farmers as export markets (Table IV). Therefore, it is understandable that farmers would be concerned about actions that might reduce the growth of exports to these developing countries.

**TABLE IV. PERCENT OF SELECTED U.S. AGRICULTURAL COMMODITIES EXPORTED TO DEVELOPING COUNTRIES FISCAL YEAR 1983**

<u>Commodity</u>	<u>Developing Market Economies</u>	<u>Centrally Planned Developing Economies</u>	<u>Total</u>
Grains and Feeds	53	11	64
Wheat and products	70	14	84
Rice	74	0	74
Corn	37	13	50
Oilseeds and Products	25	4	29
Soybean meal	22	5	27
Soybeans	17	4	21
Soybean oil	86	13	99
Cotton	40	5	45
Animals and Products	45	8	53
TOTAL AGRICULTURAL EXPORTS	40	6	46

Source: ERS, USDA - U.S. Foreign Agricultural Trade Statistical Report - FY1983, March, 1984.

Although agricultural exports to developing countries have increased in the past several years, total U.S. agricultural exports have recently decreased from \$43.8 billion in 1981 to \$38.0 billion in 1984. There are three major reasons why this has happened.

- (1) The exchange rate of foreign currencies for U.S. dollars has increased. For example, it now takes 32 percent more German marks to buy one U.S. dollar's worth of U.S. goods than in 1981. A recent USDA study<sup>3</sup> concluded that the stronger dollar cost the United States about \$6 billion in lost farm exports over the two-year period 1981-83.
- (2) Some U.S. domestic agricultural policies tend to result in U.S. agricultural commodities being priced above world prices. This is obviously not good policy if one wants to encourage agricultural exports in a competitive world economy.
- (3) Total world agricultural trade has decreased since 1980 because of reduced economic growth in many countries and increased indebtedness of many developing countries. Shane and Stallings have estimated that the debt problem alone has led to a loss in potential export sales to developing countries of up to 20 percent.<sup>4</sup>

None of these major reasons for declining United States agricultural exports has to do with increasing agricultural production in developing countries which is one of the objectives of U.S. universities and AID collaboration. From 1981 to 1984, developing country per capita agricultural production has essentially remained constant. Therefore, in the aggregate, increases in agricultural production within developing countries has not caused the decline in U.S. agricultural exports since 1981.

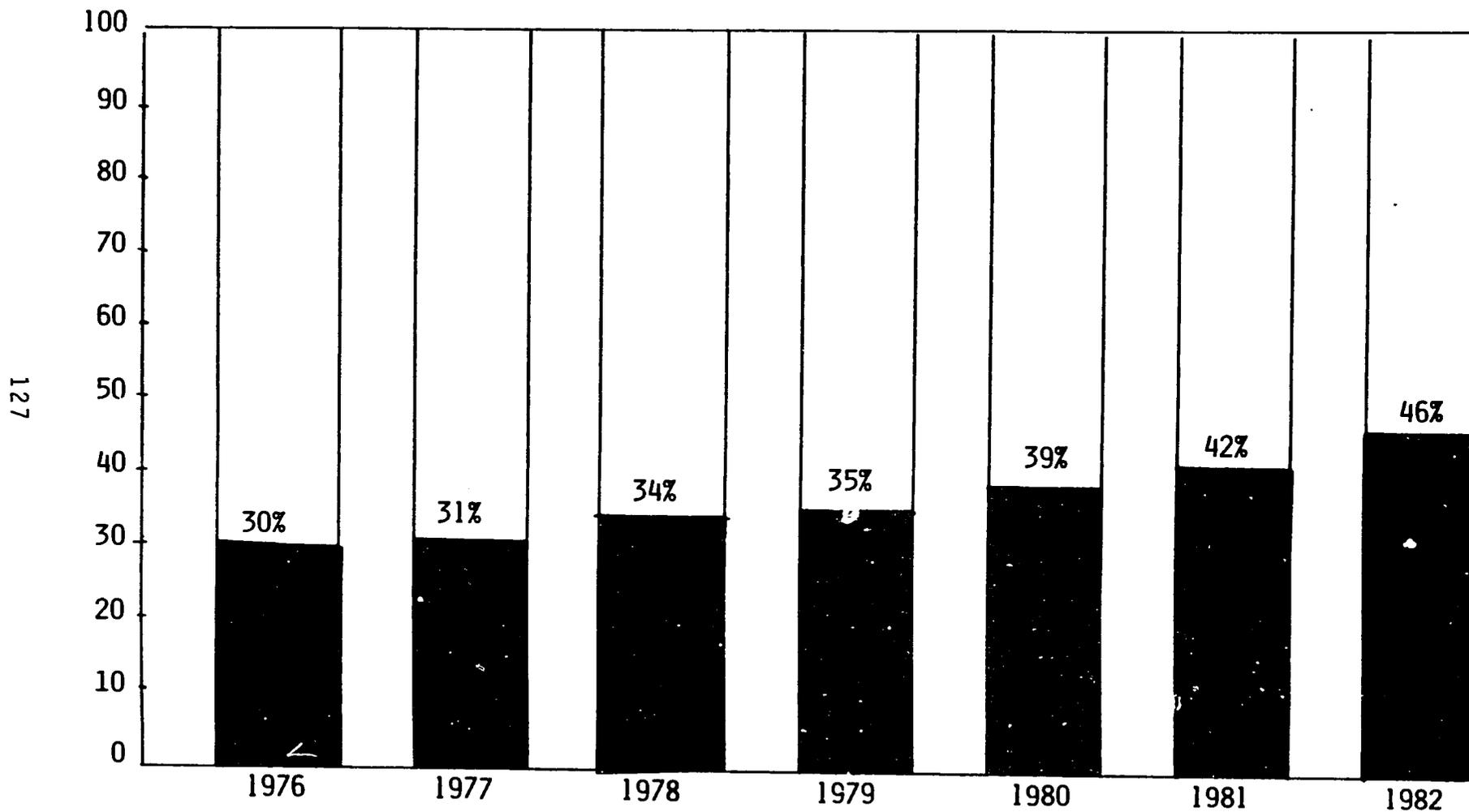
The possible consequences on U.S. agricultural exports of increased agricultural production in developing countries

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<sup>3</sup>Longmire, Jim and Art Mory. Strong Dollar Dampens Demand for U.S. Exports, Foreign Agriculture Economic Report No. 193, Economic Research Service, U.S. Department of Agriculture, December, 1983.

<sup>4</sup>Shane, Matthew and David Stallings, Financial Constraints to Trade and Growth, The World Debt Crisis and its Aftermath, Foreign Agriculture Economic Report No. 211, U.S. Department of Agriculture, ERS, December, 1984.

PERCENT OF TOTAL U.S. AGRICULTURAL EXPORTS TO LESS DEVELOPED COUNTRIES FISCAL YEARS 1976-1982



U.S. AGRICULTURAL EXPORTS TO THESE COUNTRIES GREW BY 17% PER YEAR FROM 1976-1982.

SOURCE: ERS, USDA - U.S. Foreign Agricultural Trade Statistical Report, various issues.

may differ depending on whether one is concerned about specific commodity exports to specific countries or aggregate U.S. agricultural exports to developing countries in general. Theoretically, increases in agricultural production in a developing country may have negative and/or positive effects on U.S. agriculture exports to that country. Negative effects on U.S. exports would occur if the domestic production of a commodity would increase more rapidly than the domestic demand for that commodity or if the country would increase the exports of a commodity that would compete with U.S. exports.

Positive effects on U.S. agricultural exports of an increase in a developing country's agricultural production would occur if:

- 1) the induced income increase of rural and urban people caused demand for agricultural commodities to increase faster than supply; and
- 2) foreign exchange would be created by increased exports of certain commodities and used to increase imports of U.S. agricultural commodities.

The developing countries with their expanding populations are clearly becoming important clients for U.S. agricultural products because their consumers spend a significant amount of their increasing incomes on food. However, the ability of these countries to import more agricultural products will be constrained by a lack of foreign exchange and the slow pace at which their per capita incomes are rising. But if domestic agricultural production in these countries does increase, these constraints will ease somewhat.

We are thus confronted with an apparent paradox: to become more important customers for U.S. agricultural products, many developing countries may have to increase their own domestic agricultural production. Because many people in developing countries obtain their incomes from farming, agricultural production must increase in order to improve the incomes of that broad segment of the population. Using much of that larger income, these people will then be able to improve and diversify their diets.

Often, too, increased domestic agricultural production helps the nonagricultural sector in developing countries to grow more rapidly, thus stimulating the demand for agricultural products there as well. Development in this sector may boost the export of nonagricultural products and help alleviate the need to import similar goods. Both of these results serve to improve the availability of foreign exchange.

## Results of Various Studies

Increases in agricultural production in developing countries may entail increased production of some commodities that do not directly compete with U.S. agricultural exports. Most of these countries are in tropical or sub-tropical zones where the commodity mix of agricultural production is somewhat different from the U.S. In these cases, increases in developing countries' agricultural production (which may involve only a few commodities) can lead to agricultural exports of these commodities and increased agricultural imports from the U.S. Evidently, this has occurred in Malaysia. As reported by Lee and Shane,<sup>5</sup> Malaysia has developed into a consistent net exporter of agricultural products but also an ever increasing market for U.S. agricultural exports. From 1967 to 1983, Malaysia has increased its imports of food, feed grains, and oilseeds (primarily soybeans) from a wheat equivalent basis of about one million metric tons to almost 2.4 million metric tons.

The U.S. itself is another example of a country that has become a net exporter of agricultural products and a growing market for agricultural exports of other countries. Brazil shows a similar pattern. It has become an increasingly significant net exporter of agricultural products and a significant importer of grains; importing, on average,<sup>5</sup> about four million metric tons of grain per year since 1978.

As stated by Lee and Shane,<sup>5</sup> these examples indicate that economic development in the developing countries along comparative advantage lines is not competitive with, but generally complementary to, U.S. agricultural export interests. In some cases, developing countries' comparative advantages may exist in the production and export of certain agricultural commodities. Even as agricultural exporters, developing countries may also be good markets for U.S. agricultural exports.

Import demands for specific agricultural commodities may decline in specific countries if they significantly increase their own production of agricultural products they have been importing. Therefore, the question of whether increases in domestic agricultural production in developing countries affects their imports of U.S. agricultural commodities is an empirical question.

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<sup>5</sup> Lee, John and Mathew Shane, "United States Agricultural Interests and Growth in the Developing Economies: The Critical Linkage," paper presented at the National Planning Association Food and Agriculture Committee Meeting, Denver, ERS, USDA, May, 1985.

What is the relationship or correlation between increases in developing countries' domestic food and agricultural production and their imports of agricultural commodities? A USDA study<sup>6</sup> showed exchange rates and indebtedness problems had much more negative impacts on U.S. agricultural export volume than other factors. The study also showed that increased foreign wheat production did have a significant negative correlation with U.S. wheat exports but increased foreign coarse grain production has a significant positive correlation with U.S. coarse grain exports. Therefore, for certain commodities in the short run, substantial increases in domestic production may cause less of that commodity to be imported into that country.

Lon Cesal of USDA has indicated in several publications<sup>7</sup> that economic growth in developing countries is important to U.S. farmers and consumers and that recent declines in the growth rate of these countries has had negative impacts on U.S. exports. Because the economic health of these countries is so closely tied to agriculture, increases in agricultural production may be necessary to increase their economic growth which is fundamental to becoming good customers for U.S. agricultural exports.

To further analyze the relationship between increases in developing countries' domestic agricultural production and their agricultural imports, data from 92 developing countries were divided into four equal groups of 23 by the rapidity of increases in per capita food production between 1970 and 1980. Per capita agricultural imports were compared between Group A countries - rapid increases in per capita food production from 1970-1980 and Group D countries - those with the least rapid increases in per capita food production for the 1970-1980 period. Countries were eliminated which had populations of less than one million or less than 30 percent of their total active population in agriculture. This left 18 countries in Group A and 13 countries in Group D. Calculations were made on per capita imports of all agricultural commodities, corn and soybeans from 1970 to 1980 for each country group. The results are given in Table V.

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<sup>6</sup>This USDA study was reported in the June 1984 issue of the Farm Journal Extra - Outlook Section, page 5.

<sup>7</sup>See Lon Cesal's paper on U.S. Agricultural Trade and Developing Countries: Options and Issues, 1984 Agriculture Outlook Conference and also see ERS USDA Farmline Vol. VI, No. 3, March 1985.

**TABLE V. PER CAPITA CHANGES IN AGRICULTURAL IMPORTS FROM 1970 TO 1980 IN TWO GROUPS OF DEVELOPING COUNTRIES**

<u>Category</u>	<u>Per Capita Changes In:</u>		
	<u>Total Agricultural Imports</u> ( <u>\$</u> )	<u>Corn</u> ( <u>kgs</u> )	<u>Soybeans &amp; Products</u> ( <u>kgs</u> )
Group A - Developing countries with the most rapid per capita food production increase (18 countries)	46.52	15.57	6.14
Group D - Developing countries with the least rapid per capita food production increase (13 countries)	34.60	7.9	1.72
Percent Difference Between Group A and Group D	34.5%	97.1%	257%

This data indicates that countries with the most rapid increases in their own per capita food production also increased their per capita agricultural imports more rapidly than did countries with slow growth in their per capita food production. Bachman and Paulino arrived at a similar conclusion when analyzing data between 1961-1965 and 1974-1976. They said:<sup>8</sup>

"It appears that the traditional net exporters to developing market economy countries need not worry about expansion of food production in the rapid food production growth countries. Although the proportion of consumption coming from domestic production generally increased, net imports of staple foods also increased. Net staple food imports per year in these countries rose 2 1/3 times between 1961-1965 and 1974-1976; actual import levels grew by 87 percent while exports increased by 53 percent."

Further analysis of the relationship or correlation between developing countries' increases in per capita food production and changes in per capita agricultural imports is being done using regression analysis for 77 developing

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<sup>8</sup>Bachman, K. L. and L. A. Paulino, Rapid Food Production Growth in Selected Developing Countries: A Comparative Analysis of Underlying Trends: 1961-76, International Food Policy Research Institute Research Report No. 11, IFPRI, Washington, D.C., October, 1979.

countries.<sup>9</sup> This analysis incorporates time series and cross-sectional data on changes in per capita imports of agricultural commodities as correlated with changes in domestic per capita agricultural production, per capita income, concessionary food aid, and special drawing rights in the International Monetary Fund.

Over 13 different multiple regression equations were estimated using different variables and sets of developing countries with the following general results. In no estimated equation were results obtained that showed a negative coefficient significantly different from zero for the correlation between per capita agricultural production in developing countries and their per capita imports of agricultural products. At this point in the analysis, there is no evidence to suggest that increases in developing countries' per capita agricultural production is negatively correlated with their aggregate per capita agricultural imports. In six estimated equations, the coefficients for the relationship between per capita increases in agricultural production and agricultural imports were positive and significantly different from zero. That is, in several cases, increases in per capita domestic agricultural production had a positive correlation with increases in per capita imports of agricultural products in developing countries.

Several case studies are also being done to illustrate the correlation between domestic agricultural production in various developing countries and changes in their agricultural imports over time. Brazil is often discussed as a developing country whose own increases in agricultural production has had a negative influence on U.S. agricultural exports. From 1970 to 1983, Brazil's agricultural production increased by 66 percent - a rapid rate by international standards. During this same time period, the increase in per capita agricultural production was 21 percent. What happened to U.S. agricultural exports to Brazil during this time of rapid increases in agricultural production in Brazil?

<sup>9</sup>This analysis is the subject of a thesis being written by Richard Kodl at the University of Illinois. The final results will be available in the fall of 1985.

**TABLE VI. COMPOSITION AND CHANGES IN U.S. AGRICULTURAL EXPORTS TO BRAZIL, 1970-72 to 1982-84**

<u>Export Category</u>	<u>Average of 1970 Through 1972 (Thousands of U.S. current dollars)</u>	<u>Average of 1982 Through 1984 (Thousands of U.S. current dollars)</u>
Government-supported	48,798	1,300
Commercial	27,935	470,037
TOTAL:	<u>76,733</u>	<u>471,337</u>
Government-supported exports as percent of total:	64%	0.3%

Source: ERS, USDA - U.S. Foreign Agricultural Trade Statistical Report, various years.

During the 1970-1984 period, the quantity of U.S. agricultural exports to Brazil increased by 8.7 percent per year while the value of these exports grew by 16.3 percent per year at the same time Brazil was increasing its agricultural production rapidly. In addition, the proportion of total U.S. agricultural exports to Brazil that were government supported changed from 64 percent in 1970 to 0.3 percent in 1984. U.S. exports to Brazil of wheat and wheat products, corn and corn products, and even soybeans and soybean products increased rapidly during this time of rapid Brazilian agricultural growth (see Table VII).

**TABLE VII. U.S. AGRICULTURAL EXPORTS OF SELECTED COMMODITIES TO BRAZIL, 1970-72 AND 1980-82**

<u>Commodity Categories</u>	<u>Average of 1970-72 -Thousands</u>	<u>Average of 1980-82 of U.S. \$ -</u>	<u>Average Annual Change (Percent)</u>
Wheat & Wheat Products	41,453	451,991	27
Corn & Corn Products	304	153,607	86
Soybean & Soybean Products	996	34,607	43

Source: ERS, USDA - U.S. Foreign Agricultural Trade Statistical Report, various years.

Brazil's imports of our agricultural products increased on the heels of their improved domestic agricultural production which contributed to the development of the non-agricultural sector and to the increased availability of foreign exchange. It is clear that Brazil became a competitor of the U.S. in one agricultural commodity - soybean product exports to the rest of the world. However, the increase in Brazilian imports of agricultural commodities from the U.S. was quite rapid during this same time period.

A similar case study was done for the Republic of Korea - South Korea. From 1970 to 1983, Korea's agricultural production increased 60 percent - one of the more rapid increases in agricultural production among developing countries. The increase in per capita agricultural production was 27 percent over the same time period. Did this large increase in domestic agricultural production cause a reduction in Korea's agricultural imports? Table VIII gives the value of U.S. agricultural exports to the Republic of Korea for the early 1970s to the early 1980s.

**TABLE VIII. COMPOSITION AND CHANGE IN U.S. AGRICULTURAL EXPORTS TO THE REPUBLIC OF KOREA, 1971-73 AND 1982-84**

<u>Export Category</u>	<u>Average of 1971-1973</u> (Thousands of U.S. Dollars)	<u>Average of 1980-1983</u> (Thousands of U.S. Dollars)
Government Supported	171,418	-
Commercial	197,070	1,711,990
TOTAL:	368,488	1,711,990
Government Supported Exports as a Percent of Total	46.5%	0%

Source: ERS, USDA - U.S. Foreign Agricultural Trade Statistical Report, various years.

The value of U.S. agricultural exports to Korea increased by 15 percent annually while the quantity increased by 6.7 percent per year. In addition, U.S. government-supported exports to the Republic of Korea declined as a percent of total exports from 46.5 percent in 1971-73 to zero percent in 1982-84. Therefore, the same pattern emerges, with rapid increases in domestic agricultural production, agricultural imports continued to grow.

For Brazil, Korea, and many other developing countries, U.S. agricultural exports to these countries increased rapidly during the same period that their own domestic agricultural production was increasing rapidly. This was true even when inflation effects were removed from the export data.

By contrast, one can look at a developing country with slow increases in agricultural production. Sierra Leone experienced an increase in total agricultural production of only 21 percent from 1970 to 1983 - about one-third of the growth in agricultural production in Brazil and Korea. Per capita agricultural production in Sierra Leone was 11 percent less in 1983 than in 1970. Given this poor record of domestic agricultural production growth, one might have anticipated that U.S. agricultural exports to Sierra Leone would have increased rapidly. Table IX gives the value

of U.S. agricultural exports to Sierra Leone for the early 1970s to the early 1980s.

**TABLE IX. COMPOSITION AND CHANGE IN U.S. AGRICULTURAL EXPORTS TO SIERRA LEONE, 1970-72 and 1981-83**

<u>Export Category</u>	<u>Average of 1970-72</u> (Thousands of U.S. Dollars)	<u>Average of 1981-83</u> (Thousands of U.S. Dollars)
Government Supported	1,209	4,309
Commercial	<u>2,354</u>	<u>1,929</u>
TOTAL:	<u>3,563</u>	<u>6,238</u>
Government-Supported Exports as a Percent of Total:	34%	69%

Source: ERS, USDA - U.S. Foreign Agricultural Trade Statistical Report, various years.

The value of U.S. agricultural exports to Sierra Leone increased by 5.2 percent per year while the quantity decreased by 2.5 percent annually. In addition, government-supported exports to Sierra Leone increased as a percent of total exports from 34 percent to 69 percent from 1970-72 to 1981-83. In this case, slow progress in improving domestic agricultural production was accompanied by declining agricultural imports in real terms and an increasing proportion of U.S. agricultural exports being supported by government actions.

It appears, therefore, that in the intermediate term increases in agricultural production in developing countries do not have a negative impact on aggregate U.S. agricultural exports to these countries. In certain cases in the short run, some developing countries may reduce their imports of specific commodities as their production of these commodities increase. However, the evidence points to a positive correlation between increases in agricultural production and increases in agricultural imports in developing countries.

#### Summary

Developing countries continue to be the best potential growth markets for U.S. agricultural exports. To realize this potential, they must achieve economic growth that results in increased per capita incomes and foreign exchange availability. Because of the size and economic importance of the agricultural sector in developing countries, it must contribute to this economic growth. In addition, developing countries must be able to export products in which they have a comparative advantage. To accomplish this growth in income and exports will require that developing countries

obtain capital and technical assistance for agriculture and other economic sectors. If growth and development are achieved, developing countries can continue to be important customers for U.S. agricultural exports.

For a number of reasons, then, improving agricultural and food production in developing countries is important to U.S. interests. These efforts benefit people living in poverty, improve the chances for world peace and stability and also contribute to the long-term prosperity of American agriculture.

**REMARKS AT THE ANNUAL MEETING OF AUSUDIAP**  
**ATHENS, GEORGIA**  
**MAY 31st, 1985**

Dr. E. T. York, Jr.  
Chairman of the Board for  
International Food and Agricultural Development

I am delighted to be here among so many friends and colleagues of long standing. I have been quite impressed with the manner in which AUSUDIAP has evolved over the years and with the leadership and direction which you, collectively, are giving international programs in agriculture in U.S. universities.

In considering this assignment, I thought it might be more meaningful if I would ask some of you to suggest some issues that you were concerned about rather than to rely on what I would think you might be interested in. So I called Howard Massey with the idea and he graciously asked several of you to give me suggestions--which you have done--and for which I am most appreciative.

I should add that some of your responses might not have reached me since, in the last four weeks, I have been involved in separate trips to Africa and Europe with only a couple of days in my office in between. Consequently, I have had to bring together some thoughts for this meeting in the seat of a Boeing 747 during this travel. And if I appear to be suffering a bit from "jet sag" today, it is for good reasons because I didn't arrive here from Rome until late last evening.

I am very sorry to have missed the sessions yesterday and also regret to have to leave after the luncheon to get back to Florida for a commencement ceremony tomorrow. Your program is addressing some matters of major import, and I shall look forward to getting a report of the total meeting.

Now let me turn to some of the issues raised in the comments I have received. In several instances those who responded went beyond merely suggesting topics for discussion and have aired some of their frustrations with the AID-university relationship represented by the Title XII program. However, I am glad that they did, because this should give us the basis to focus on some of the key issues which need to be addressed.

One person suggested that some of the initiatives started under Title XII "are being compromised to the point where they warrant close examination." This person then made several points:

- 1) "The Joint Career Corps (JCC), when stripped to its essence is nothing more than an IPA arrangement under a new acronym. The original concept of a Joint Career Corps was a far more comprehensive arrangement for providing bona fide career opportunities for interested university faculty in working through both the Agency and the home university in international agricultural development activities."
- 2) "The Memorandum of Understanding and the associated Program Support concept are now on their way to being bastardized into a social engineering device rather than a means of enabling Title XII universities to more fully mobilize their resources for participation in the several activities involved in external assistance to the agricultural development process in or in the interest of the developing countries."
- 3) "The 'Joint Venture' emphasis currently being given to university alliances and university/private sector alliances, are being pushed to the extreme. While there are obviously some cases in which such alliances make a great deal of sense, there are a great number of activities in which the single institution approach would be far more efficient and capture the 'responsiveness' associated with the total responsibility being placed on the back of a single institution."
- 4) "Last, but not least, is (the fact that)...only 27 per cent of the AID budget allocated to ARDN projects specified as Title XII initiatives is in support of projects under contract to Title XII institutions. This might well be more important than all the above. It certainly is contrary to the intent if not the letter of Title XII."

Another respondent made this comment: "Presently the pattern of decentralization at USAID has been likened to an octopus with each tentacle having its own power. The decisions and actions by country missions and mission directors vary so that it is becoming extremely difficult and nonrewarding for universities to be involved in international development contracts. Experiences at this institution have been that even our contract with the Agency may not hold up if the Mission Director so wishes to interpret it differently."

Let me add that I think this matter of continuity of AID's commitment to longer term development efforts is a matter of tremendous importance which needs to be addressed.

Now let me share with you another series of comments which seem to reflect a very serious disillusionment with the entire Title XII process and a lack of confidence in AID's good faith in dealing with its implementation:

"In September 1985 I will have been learning about and observing the development of Title XII program activities for ten years. My feeling today as it was early on...is that AID intended to and has systematically and by design moved to emasculate the original intent of the legislation. With the possible exception of the CRSP projects, the regular AID organization has effectively bound up and essentially strangled the involvement of larger numbers of U.S. universities in in-country projects. With few exceptions, the so-called 'old boy' network is still strongly favored. Creativity in the development of proposals and effective implementation of the strengthening grants has been hampered by AID-Washington. There has been frequent interference along with inconsistency and changing of signals on AID requirements. I have talked to many of my colleagues and have yet to find one that has much of a positive nature to say about this phase of the Title XII program. To me the MOU situation that has been laid on us by AID-Washington is simply the next step in gaining tighter and more complete control. The MOUs further prostitute and emasculate Title XII initiatives. Therefore, I am convinced that two-thirds of Title XII is gone--dead! I look for the next step to be a carefully planned effort to gain total control over the CRSP process. When that happens the task of eliminating Title XII will have been completed and achieved.

Now let me comment briefly. I would be the first to say that the Title XII program has, by no means, achieved its ultimate potential, and that AID-university relationships have not always been what might be desired. However, I have great difficulty in relating to the harshness of such criticism of AID and to the apparent conclusion that the Title XII program is, for all intents and purposes, on its deathbed.

But I would hasten to add that if there are sentiments like these among the members of AUSUDIAP, I think it is well to have them aired. And I intend to share these comments with the leadership of AID so that they might realize the intensity of some of these feelings. For obvious reasons I shall not reveal the source of the comments.

Perhaps one reason I have a somewhat different perspective on this issue is the fact that my involvement with AID goes back a bit further than most of yours--indeed for the better

part of the last 25 years. I am of the very strong opinion that AID-university relations are far better today than they have ever been at any time before in history. And I am confident that the Title XII program has been a significant contributor to such improved relations.

Furthermore, I can never recall when the development philosophy and program emphasis within AID have been more closely attuned to those of the universities than in the last four years. As you know, institution building, technology transfer, human capital development, etc., are all areas of major program emphasis in AID today.

Such emphasis has been a part of the development "theme song" of universities over the years. In fact, the current development philosophy of AID is so close to that of the university community that some of the oldtimers in the Agency have suggested that the current AID leadership has, in effect, become a captive of the universities.

I don't think there is any doubt but what the Title XII program has made a significant contribution to the current philosophy within the Agency. The Administrator is, of course, an alumnus of BIFAD and I am confident that his service on the Board helped shape his attitudes towards development which are reflected in the Agency's philosophy and program emphasis today. Furthermore, the BIFAD has constantly stressed the need for such emphasis in its contacts with the Agency and Congress, often reinforcing the administration's position with some who may not fully share this philosophy.

But even with these more positive relations and greater accord on development philosophy, some of you are saying that the original hopes and aspirations for the Title XII program have NOT been fully realized. And I would agree. But, on the other hand, I think that substantial progress has been made and that there is a sound basis for further advances.

Perhaps it depends upon our perspective--whether we view the glass as being half full or half empty. I like to look positively upon it as being half full--indeed, fuller than it has ever been--and still filling!

I hope that most would agree that strengthening grants, MOUs, CRSPs, and other major Title XII initiatives have all had worthy objectives. If these initiatives have not fully achieved their objectives, the important thing is that we all continue to work to improve them and, in so doing, continue to fill the glass.

At the end of the last fiscal year, September 30th, 1984, AID had obligated \$31,451,000.00 for strengthening grants.

Obligations for FY-85 would add another 6.1 million, making a total of approximately 37.5 million dollars over the last year or so. Based on the evaluation of these grants conducted under the auspices of BIFAD, I believe we can say that our universities have substantially strengthened their international dimensions and capacities to do international work as a result of this support. And this has been beneficial to these institutions, irrespective of whether these grants ultimately result in AID contracts or not.

My impression is that the CRSP programs are working well and are making significant contributions both to U.S. and Third World programs and to the overall objectives of AID. Certainly, the funds going into CRSP programs have benefitted participating universities' research efforts as well as served AID's objectives.

I share fully the frustrations which many have expressed about the failure to come to closure on the MOU issue. But the difficulty in perfecting the mechanism for handling MOUs, does not suggest to me that the concept be abandoned with AID using for other purposes the several million dollars, annually, tentatively committed to go to universities through this program. I have difficulty in understanding how MOUs "further prostitute and emasculate Title XII initiatives" as suggested. The intent has been for MOUs to further strengthen the Title XII effort by providing those universities involved in AID programs some stability in funding and a better basis to sustain a strong international development program capability with resources that go beyond those generated through AID contracts.

Perhaps the greatest sense of frustration being expressed by some of you grows out of the feeling that AID is not using universities in implementing country programs to the extent that many believe that the Title XII legislation intended. If only 27 per cent of the AID budget for agriculture, rural development, and nutrition goes to Title XII institutions, as someone suggested, it is not surprising that one might question whether AID was adhering to the spirit and the letter of the Title XII Act. If this is true, one might also question whether the commitments made in the Joint Resolution signed by the Administrator of AID and the Chairman of BIFAD in 1981 are being met.

As you may recall, that Joint Resolution contains the following language: "AID recognizes that U.S. universities are a special resource and intends to make every effort to involve and utilize them fully and completely in accord with the Title XII amendment." There is no ambiguity in that language. To what extent is it being met? That is a reasonable question and one which BIFAD intends to pursue with the Agency.

We should recognize that there is some difficulty in determining just what projects should logically be classified as Title XII initiatives. But I would add that there is little doubt but what there continue to be a number of Title XII-type initiatives under contract to non-Title XII institutions, in situations where universities would appear to have some comparative advantage.

One significant reason for this, I am sure, is the fact that there are some personnel in the Agency who are still negative towards university involvement in AID programs. I don't believe, however, that there are nearly as many today as in the past and I believe that attitudes, generally, are improving. Nevertheless, some continue to have these sentiments and they influence decisions to involve universities in AID programs.

A Mission Director in Africa recently commented to me that he has, in the past, been quite opposed to involving universities in AID contracts because of some earlier bad experiences. He referred to an institution building program in one country which anticipated close ties with the contract university and the developing country institution. Yet not one of the long-term personnel assigned to the project came from the university; all had been recruited elsewhere--contributing, in his opinion, to the failure of the program.

When this Mission Director assumed his present assignment however, he found another institution building project where the university involved had staffed the project with some of its best personnel including a former dean as Chief of Party. The Director recently told me: "This program has caused me to change my attitudes about involving universities, because this has, indeed, been a good experience."

This and similar experiences suggest that nothing--including the Title XII legislation itself--will contribute more to AID's involvement of universities than a record of good performance by our institutions.

For the last year or so, BIFAD has become more involved in the evaluation process--in an effort to determine what contributes to effective performance by universities in AID contracts. We are doing this in an effort to try to build upon the experiences of others so that future efforts might be more productive and mutually beneficial. In this process, we asked the Agency to indicate some of the major problems which have been encountered in AID-university contract programs in the past.

Originally, I thought I might discuss some of these problems as perceived by the Agency. However, it might be more meaningful to share this information with each Title XII

institution in a written summary so that it might be studied in greater detail in your continuing effort to strengthen and improve your international program capabilities.

The important point is that there are undoubtedly legitimate concerns being expressed by both parties to this partnership. I would hope that all concerned could treat these expressions of concern as constructive criticism, and that each party could, to the extent possible, work towards removing the basis for the concerns.

Now let me return to the letters received in response to Howard Massey's request. These have contained some extremely thoughtful and helpful suggestions concerning possible actions by BIFAD and recommendations for improving and strengthening the relationship with AID. Time does not permit a detailed discussion of these suggestions. But let me propose that these ideas be incorporated in a more comprehensive treatment of this issue. May I be more specific.

This year marks the tenth anniversary of the passage of the Title XII legislation. The theme of this conference, "The Decade Ahead," is, therefore, most timely. This tenth anniversary provides a good opportunity to take a careful, introspective look at the program and see what can be done to improve its effectiveness over the next ten years. I can't imagine a better group to take the leadership in developing and reflecting university views on this matter than AUSUDIAP. Accordingly, BIFAD would be most grateful if you would assume this responsibility. If AUSUDIAP is willing to do this, you might wish to set up a special committee or panel to be concerned with a possible agenda for the second decade of Title XII. We plan to ask AID to do something similar--to suggest a "Second Decade" agenda which would be most meaningful from the Agency's perspective.

With such input, BIFAD would have an excellent basis to take these ideas and formulate a meaningful agenda for the next ten years.

Let me mention one other effort with which I would like to request AUSUDIAP's active involvement. Over the years, many have lamented the fact that there has been no strong constituency to support our nation's foreign aid program in Congress. Today, however, there are a number of groups interested in foreign aid which are having significant inputs--if not on the total amount of AID appropriations--certainly upon how the appropriations are used. Influential defense contractors are attempting to get more of the total AID appropriations allocated for military purposes. Furthermore, various interest groups are getting more AID funds allocated for such things as health and population programs--at times

at the expense of agricultural programs. PVOs have succeeded in getting a certain percentage of AID budget earmarked for their use--and other groups have been successful in securing further earmarking of AID appropriations.

But who is primarily concerned with food, agriculture, hunger and malnutrition programs; who is trying to see that these problems receive an appropriate share of available resources? There is a great opportunity and need for the agricultural leadership of Title XII institutions to give direction to such an effort. BIFAD would welcome an opportunity to assist in this, working in close cooperation with the two national associations, NASULGC and AASCU. But the obvious potential of such an effort rests with the active involvement of interested universities in each state. So I hope that this is something that can soon be developed in cooperation with the ongoing legislative program of the Division of Agriculture in NASULGC and with the appropriate group in AASCU.

Finally, I have asked for your assistance in developing a Title XII agenda for the next decade. What about the opportunities for carrying out such an agenda--what will be the climate--the demands for Title XII activities over the next decade?

Last November representatives of several member institutions of this Association were involved in a visit to India to observe the system of agricultural universities developed over the last 25 years with U.S. AID assistance. Upon our return, I was reporting to Administrator McPherson on the significant contributions which these institutions, modeled after U.S. land-grant universities, are making to the development of agriculture in that great country. At the time of our meeting, Mr. McPherson was involved almost around the clock every day in coordinating the African food aid program. I commented to him that if there had been an institution building program in Africa over the last 25 years, comparable to that in India, he and others would not be nearly so concerned with food aid for that continent today. He agreed and said that what we obviously need are more Cameroon type projects in Africa. He was referring to a project AID is funding in Cameroon in which a Title XII institution is helping to develop a national agricultural university in that country modeled after a U.S. land-grant institution.

Administrator McPherson suggested that BIFAD assist AID in considering the development of a network of agricultural universities for the African continent similar perhaps to those institutions in India. This is now being pursued with potential participation by the World Bank and possibly members of the European economic community which have special interests in Africa.

I recite this incident to emphasize that Africa must receive major attention over the next decade and longer with heavy emphasis on training and the development of the agricultural institutions concerned with education, research and extension. This has significant implications to Title XII institutions which obviously have resources and capabilities to contribute substantially to this development.

But future opportunities for such involvement are not limited to Africa. Asia, for example, has far more hungry, poverty ridden people than Africa. Furthermore, there will be tremendous demands made on agriculture worldwide over the next 10 to 20 years. This is evidenced by the fact that by the year 2000, the world cropland base is expected to expand only 4 per cent; population, on the other hand, will increase by some 40 per cent. Where there was approximately one acre of arable land per person worldwide in 1975, there will be only six-tenths of an acre per person by the year 2000.

This means that each acre must be farmed more intensively, relying upon significantly improved technology-based production practices. Strong, effective research and extension programs and increasing numbers of well-trained personnel will be required to achieve this greater productivity. The science-based agriculture which will be required will demand more and more Title XII type initiatives in our foreign aid effort.

Another factor which suggests even greater opportunities and needs for university involvement in our development assistance programs is the fact that the numbers of agricultural professionals in AID continue to decline. BIFAD has continually emphasized this problem, pointing to the importance to AID maintaining sufficient agriculturally trained personnel to carry out its responsibilities. Today, for example, with agriculture representing approximately 50 per cent of the development assistance budget, agricultural professionals in the Agency account for only about 5 to 8 per cent of the total personnel. This means that AID must increasingly turn to outside sources of technical personnel to help implement its programs. U.S. universities have such professional resources along with a comparative advantage in giving leadership to many of the types of programs needed to further develop the science-based agriculture which will increasingly be required in the developing world.

There is no question but what the Title XII program has a tremendous challenge in its second decade. We look forward very much to your assistance as individuals, and collectively as an association, in developing and carrying out programs to meet this challenge.

It has been a real pleasure to be with you.

## MEMORANDA OF UNDERSTANDING--A FIELD VIEWPOINT

Keith Sherper  
Director  
Office of Technical Resources (AID)

I have been asked to present some views from a field perspective on the application of Memoranda of Understanding (MOUs). However, having just returned from nearly four years in the field, posted to Sudan, it appears that the application of MOU activities has barely started in many countries. In the case of Sudan which, by the way, has Africa's largest AID assistance program by far, little was known or understood about MOUs. In part, this is probably due to the fact that the MOU/PSG process is relatively new in its implementation.

I would like to discuss the MOUs, and aspects of our assistance that relate to them, with some emphasis on the African situation--for a couple of reasons. One is my recent experience in the field there and my current position in the Africa Bureau in Washington. The second reason is Africa's projections for U.S. university technical assistance requirements are somewhat at variance with other regions.

How does or would a country mission manager view MOU activities? Well, in most cases it is too early to say. But let me try to convey some points that might come to his or her mind for consideration. It is important to keep in mind that a mission director only sees one leg of the elephant. Field personnel often have little or no idea of the U.S.-based activities supported through an MOU arrangement. Four principal questions are particularly relevant as one reviews the prospect of field participation in a Memorandum of Understanding.

1) **Will the technical assistance supplied through MOUs fit into the AID program?**

Often a mission director will have a short term view as to his needs and that of his program with regard to carrying out the overall country strategy. In his or her typical four-year tenure in a country, the director wants to achieve some kind of measurable change. It might consist of a significant production advance or policy change or training impact. In attempting to achieve this, he will naturally look to his project portfolio as the bread and butter means to meeting his program goals. Since a mission and its leadership is graded on accomplishments, he is looking for tangible results. Technical

services under an MOU arrangement may be seen as valuable, but not necessarily critical, to meeting country program objectives. The philosophy behind MOUs is to foster longer-term capacity development at the U.S. university, so the MOU time horizon may lack consistency with that of the mission's.

2) **Are the MOU supplied services going to be supportive of project aims?**

Our agency has been admonished by the I.G. auditors to relate Program Support Grants (PSGs) to on-going and immediately foreseeable contract activities. From a field point of view, this implies that technical assistance under MOUs needs to somehow augment or complement the project portfolio, present or planned. This might include studies, evaluation or design work. In the case of on-going projects, the question arises as to why the necessary technical services were not included in the project itself if indeed this is an important activity. It is likely that MOUs can provide important and relevant resources to meet specific mission needs, but much more work must be done to facilitate and match resources with needs. Since the first priority of MOUs/PSGs is not to provide mission support, a careful job of tailoring field services is especially important.

3) **Another activity???**

AID/Washington has been urging its field missions to better manage their programs. This is translated into fewer new project starts, greater delegation of authority to the field, concentration in fewer sectors and less scatteration of activities. It includes not only country-level bilateral projects, but also centrally-funded activities--this means S&T-supported efforts. MOUs would fall into this latter category. When I arrived in Sudan, there were about 25 country-level projects. Then add to that 17 Washington-funded family planning activities, 2 health, 2 CRSPs, 2 energy, 2-3 other agricultural activities, etc. Each takes time and adds to mission workload, just to monitor what goes on, if nothing else. More often than not, a mission director will review his portfolio in an attempt to reduce management units, and if there is a graduate student under an MOU placed at the university or another institution which is not the project counterpart agency, you can guess the priority that activity will receive.

Never mind how useful the study or research he or she is conducting. What appears totally logical to AID/Washington or the university may not be seen from the same perspective as from an operational field vantage point.

4) **Are there preferable alternatives to government institutions?**

Here I am not referring to educational institutions. In the past 10 to 15 years, little headway has been made in making the extremely weak institutions in Africa sufficiently strong enough to sustain basic development activities without substantial continued donor assistance. (Of course there are exceptions). For example, we help build a ministry's extension system by training its personnel, providing commodities, etc., but often it does not have the wherewithal to continue working at a viable level after the project. This kind of situation is repeated over and over in project after project. So at the country level, there are efforts to look elsewhere to find different mechanisms for sustained development. One manifestation of this is increasing emphasis on trying to engage the private sector. Local contractors, sometimes jointly with American institutions or firms, do have the capability to carry out certain types of essential development activities. For instance, we are seeing more examples of seed multiplication and distribution being handled by private businesses. If private entrepreneurial initiatives have relatively better success, I suspect that we will see more movement in that direction, at least in some areas. Obviously, there is and will be a continuing role for Title XII institutions. But the nature of that role might need to shift a bit. Assisting missions to analyze and seek approaches to dealing with the institutional issues, especially in Africa, could be a valuable and desired contribution of MOU activities.

It is clear that MOUs provide for much more than sending individuals overseas. Indeed, the bulk of PSGs and university matching funds may be used for on-campus language training, conducting seminars, creating special library collections, etc. Yet, it is in the developing country where MOU activities are given life as far as the mission is concerned. To the extent that MOUs deliver services to the field, it is essential that USAID missions understand the underlying rationale for MOUs including their reasons for being. It appears that we still have an unfinished job in informing country missions about the intent, purpose and approach envisaged in MOUs/PSGs.

Now I would like to turn to the point regarding the projected decline in the use of Title XII technical assistance by African missions.

The intent of the demand profile was to provide an analysis of anticipated needs for technical assistance in 1990. The trends showing decreasing demands for technical assistance are in agreement with the Africa Bureau strategy and accurately reflect four emerging factors.

- 1) **Geographic Bureau Data:** The estimated quantification is based on anticipated Africa Bureau ESF and DA resources only and not on technical assistance funded by AID/W centrally-funded projects. Likewise the trends reflect this same criterion. Despite the fact that we draw heavily on S&T projects, e.g. CRSPs, and intend to continue to do so, they are not counted here.
- 2) **Technical Assistance:** Africa Bureau countries continue to have, even on a declining trend, the largest anticipated need for long-term technical assistance when compared to the other geographic bureaus--40% of all of the agency's requirements by 1990 (45% in 1985).
- 3) **Larger and Fewer Projects:** The conditions throughout sub-Saharan Africa are resulting in fewer yet larger projects. Management load is more directly proportional to number than to size of projects. The estimated 28 new starts in FY86 for all of the development projects in the Bureau compare with about 50 in FY85 and 70 in FY83. Agricultural projects represent only a portion of these. This decrease reflects an effort to improve program management over the 1000 activities, including 600 bilateral projects now on the books. Further, there will be a more concentrated focus of activities, such as commodity-specific agricultural research. In order to carry out the Bureau's efforts to obtain major policy reforms, large increments of non-project assistance are increasingly utilized. Instead of relying entirely on outside help, we are assigning AID personnel on a short-term basis to do much of the analyses. For example, in the case of the Economic Policy Initiative, we call on AID's own economists to do a substantial portion of the work with missions.
- 4) **AID Strategies:** With reduced personnel budget levels and consequently the need to assist countries with fewer AID direct-hire staff to carry out program management responsibilities, the trend may

be toward more program and less project assistance. Beyond this, the Africa Bureau has an especially heavy programmatic workload in responding to the drought and a number of extremely weak economies. Naturally, this affects the conditions under which AID must deliver assistance.

Building upon the Strengthening Grant experience, MOU/PSGs show signs of evolving into a second generation of enhancing university capabilities in international development, one which is more directed and specified. The demand profile is a good beginning which should help to serve in laying out AID's technical assistance requirements through the balance of this decade. By identifying these needs, hopefully they will guide university decisions on allocating PSGs and matching funds toward preparing recipient institutions for priority development projects and activities. In this early dawn of MOUs, those institutions which have grants underway are to be commended on their staying within the framework and parameters intended for the Memoranda.

**THE TITLE XII MEMORANDA OF UNDERSTANDING**  
**EXPERIENCE AND FUTURE TASKS**

James Collom  
Associate Director  
International Programs in Agriculture  
Purdue University

Just 10 years ago Congress passed the legislation creating Title XII of the Foreign Assistance Act. This legislation incorporates several major conclusions, stated in its opening paragraph as follows:

The Congress declares that, in order to prevent famine and establish freedom from hunger the United States should:

- 1) Strengthen the capacities of U.S. land grant and other eligible universities in programs related agricultural institutional development and research.
- 2) Improve their participation in the U.S. government's international efforts to apply more effective agricultural sciences to the goal of increasing world food production.
- 3) Provide increased and longer term support to application of science to solving food and nutrition problems of the developing countries.

Title XII has been described as "an extraordinary challenge for the launching of a new kind of global partnership" between AID and the land grant, sea grant and other U.S. universities.

A number of initiatives including joint career corps, TSM, etc., have been developed to begin the implementation of this global partnership. While the CRSP program does seem to be working well, many of the others have not developed as well as expected. At this stage of Title XII, however, it is clear that the MOU is central to, if not vital to this partnership. J. Eriksson's analogy of the tree is appropriate --we do have some healthy branches and some weak ones. I consider the MOU as the critical trunk of this tree which defines and supports the overall partnership with AID. Thus it is critical that we examine this program, assess it and debate its future over the next decade.

## Development of the MOU

The concept now called Title XII Memoranda of Understanding grew out of a series of discussions and studies which occurred in the first five years of Title XII. By 1979-80 it was clear that several problems were constraining both universities and AID from mobilizing more effectively the resources of U.S. universities on behalf of developing nations. Several major conferences at that time focused on these problems. BIFAD staff report No. 1 entitled "Toward More Effective Involvement of Title XII Universities in International Agricultural Development" discussed the problems and presented recommendations to both Universities and AID. Several of these recommendations were incorporated in the development of the MOU program. Substantial debate and negotiation occurred as the MOU program was created. The most optimistic among us worked toward a "Hatch Act" type arrangement to cover international program funding. The reality turned out to be far less ambitious. By 1982, the concept of the MOU was clear. Three types of MOUs were specified:

**Type I - Manpower Specific - Single University**

**Type II - General - No specific manpower commitments  
Single University**

**Type III - Joint - Manpower specific, involving a  
large experienced university and  
a smaller institution.**

Initial trial Type I MOUs were signed with the University of Florida, Purdue University, Colorado State University, Utah State University and Washington State University. The first joint MOUs have involved Oregon State University and Tuskegee as well as Michigan State and North Carolina A&T. Others including Minnesota and Lincoln University are being developed. No Type II MOUs have been developed, nor do they appear likely at this point. The specific commitments of manpower to overseas projects has become the subject of greater focus by AID, thus, reducing the rationale for Type II MOUs. It is equally unclear whether other Type I MOUs will be created.

## Status of the MOU Program

The MOUs which are now in place constitute agreement between AID and the universities on a set of rather noble goals including:

- a) To establish a framework for a collaborative relationship and understanding between AID and

the University

- b) To provide guidelines for joint planning and implementation of Title XII programs
- c) To facilitate development of an efficient and effective long term partnership between the University and AID
- d) To provide a forward planning mechanism which projects the levels and kinds of services for long term participation in AID programs.

These initial MOUs contain some significant and valuable features from the viewpoint of an AID/University partnership. These include:

- a) Annual roll-forward to ensure a steady five year forward planning and commitment.
- b) Specific commitment by the University of the level and type of staff involvement which it is willing to sustain in AID programs.
- c) Commitment by the University to follow policies and practices to encourage staff involvement.
- d) Commitment by AID to provide in a separate agreement a program Support Grant in an amount equal to 10% of the annual three year average of AID business up to \$300,000.
- e) Agreement to allow accumulation of Program Support grant funds across years.
- f) Agreement to permit use of program support funds to sustain the agreed upon employment levels committed to AID programs, if necessary.

At the time the initial MOUs were negotiated it was anticipated that the program would contain other valuable attributes. Over time, some of these have disappeared, substantially diminished or never been implemented. These significant losses to the MOU program include the following:

- 1) The Registry of Institutional Resources in which each MOU university invested hundreds of hours and which was to serve as a basis for matching university resources to AID needs, has been abandoned by BIFAD and AID.

- 2) The Indefinite Quantity Contracts provided in each MOU have not yet been implemented, and current discussions question the eventual utility of this element.
- 3) The agreement by AID to use its best efforts to provide the university with alternative programs and project opportunities has been virtually eliminated by increasing emphasis on wide open competition in AID procurement for projects.
- 4) The emphasis on forward planning for university involvement in Title XII programs has disappeared under the influence of reduced AID demand for technical assistance, and reduced influence of BIFAD and Title XII mechanism on procurement for AID contracts.

Each of the Type I MOU institutions has recently completed with AID a review of activities to date under the MOU and program support grant. This review has provided me with several observations on the status of the MOU. As I make the following comments, I want to point out that the MOU is now very critical to Title XII. The current approach of AID and BIFAD is to phase out all strengthening grant programs as MOUs are developed with their accompanying PSGs. With this step Title XII in so far as it constitutes a partnership between AID and universities will consist about exclusively of two elements--the Collaborative Research Support Program and the MOU Program.

The following appear to constitute issues important to the future of the MOU program and thus to the future of Title XII.

- 1) The MOU has become absorbed by and limited to the program support grant concept. As the MOU concept was being developed, a government review of the Title XII strengthening grant program resulted in heavy criticism of AID's failure to manage the program and of certain kinds of activities of universities using those funds. On the other hand AID had committed itself to providing such funds to universities as a significant activity of Title XII. Universities felt strongly about the need for such funds. Political heat developed over the strengthening grant funds. The MOU offered AID a unique solution--an agreement that universities no longer needed strengthening, were prepared to staff AID programs and provision of continuing funds to universities under the more acceptable program support grant. The advantages are obvious.

BIFAD, AID and universities have joined forces to eliminate the ill-reputed strengthening grant program and maximize the move to PSGs. The attention and the drive to achieve this end has now overshadowed all other MOU purposes. The PSG "tail" is not only wagging the "MOU" dog, it has taken its place. Logical decision making on the structure, purpose and function of the MOU and the partnership it is to create with AID has become impossible in the light of and in the heat of the strengthening grant/program support grant problem.

- 2) The MOU concepts and BIFAD mechanisms for involving universities have been overpowered by the competitive procurement thrusts. During the five year period that the MOU has been developing, AID has been subjected to increasing pressure by congressional moves to ensure competitive procurement for governmental purchases. While the impetus for such pressure has been related to hardware purchases and largely results from problems with governmental bureaus other than AID, the Agency has responded vigorously. Thus, while the MOU concept implies greater reliance on BIFAD/Title XII mechanisms for less complicated procurement, and implies AID's best efforts to ensure MOU institutions program opportunities, the Agency cannot live up to those commitments. While continuing to use "best efforts" language in the MOU, AID is frank in admitting that while the University must be prepared to demonstrate and defend its "best efforts", AID may be unable to ensure an MOU institution any particular access to AID programs.
  
- 3) The MOU does not address the issue of the overall role of universities in conducting Title XII programs. During the past five years, as the MOU concept was developed and implemented it has become increasingly clear that AID relies upon universities to conduct only a small portion of Title XII programs. Recent estimates indicate that less than 30% of all Title XII programs are being implemented by Title XII universities. Current activities in AID and BIFAD suggest that a very large number of universities may soon be enrolled as either Type I or Type III MOU institutions. There is no commitment contained in any of the existing MOU language to assure any increased role in AID programs for this pool of institutions. In fact, it appears that the large focus of attention by AID, BIFAD, and universities on the MOU program and its accompanying PSG funds

may be distracting us from the far more critical question of the overall role which universities should be playing in Title XII. The Title XII program in total is large enough and important enough to properly absorb the best efforts of a large pool of MOU institutions. For whatever reason there is not enough attention being paid to ensuring that the entire set of Title XII problems become the focus of vigorous efforts by the entire pool of Title XII institutions. Neither AID nor BIFAD have the management staff to address this problem under current arrangements.

- 4) The MOU does not facilitate University response to critical AID needs. The recent MOU reviews included as AID's explanation of demand for university services, tables showing an overall reduction in demand for technical assistance efforts, both long and short term from 1985 to 1990. This surprising projection shows an especially significant reduction in both long and short term technical assistance demand in Africa. Thus, while we move towards a larger number of MOUs and a greater number of committed and prepared universities we project a decreased demand for technical assistance. While several factors are involved, it does seem that part of the explanation is clear. The projection given us does not represent needs of developing countries but rather AID's ability to manage technical assistance given proposed staff reductions. Thus at the same time that increased analysis on research, technology development and institution building in Africa are being proposed, AID's available technical expertise and ability to manage such programs are being further reduced. Title XII and the MOU program were intended to increasingly bring universities into partnership with AID to prevent such problems. The MOU as structured today provides no mechanism to assist the Agency in resolution of this problem.

#### Future Tasks

It is time to reassess the MOU program. We need to first reconsider its purposes and its potential role in Title XII. Experiences and problems to date have demonstrated shortcomings and weaknesses. If Title XII is to achieve its important goals it must be based on far stronger mechanisms than that which the MOU now represents. Open debate and innovative thinking will be required. The following changes are suggested by the observations above:

- 1) Reevaluating and restructuring of the MOU and PSG relationship. The political pressure to eliminate the strengthening grant program, and the pressure to create Type III MOUs is resulting in unacceptable approaches to management of this program. Some institutions appear to be denied opportunities to participate in the PSG Program while a greater number of MOUs are being proposed than AID is prepared to use. Logical procedures for deciding how many are needed and who should be included do not seem to exist. Some logical way to continue strengthening grants and/or achieve program support grants is essential and not all universities should be pushed into MOU type arrangements to achieve such. The number of institutions getting MOUs and the entire rationale for use of program support grants is now being determined by efforts to minimize the expenditure of PSG funds at the current level. Separation of and rational analysis of these two issues is critical to pursuing improvement of both types of activities.
- 2) Incorporation of a cooperative agreement for technical support. Both AID and MOU universities need the underlying partnership arrangements. Universities need continuing long term AID activities and AID needs increased access to technical resources if Title XII goals are to be accomplished. Some of this can be achieved by replacing the current IQC concept with a cooperative agreement to provide technical support to a specific Mission. In this model, the agricultural development staff of a particular mission would be permanently enhanced by the presence of one or more university staff on long term assignments and numerous short term assignments of that university staff on design, evaluation and technical resource type activities. The university would become a source of technical and scientific information and would constitute a data base and memory for AID. This approach should be more effective than that currently in use in the TSM program and could be easily implemented.
- 3) Reevaluation of procurement policies. The way in which the congressional mandates on federal procurement are being implemented by AID creates a major barrier to achievement of the goals of the MOU program and Title XII. It is time to reevaluate this issue and seek solutions. There are opportunities within the regulations which could facilitate Title XII procurement especially under the MOUs, which are not in use. AID will

need our help if these are to be exploited. Title XII institutions must understand this problem better and develop greater unity in our approach. We may be required to organize the political support around Title XII which would enable AID to respond to this problem. I recommend that the AUSUDIAP contractual relations committee take on this critical issue as an important part of its agenda in the year ahead.

- 4) Development of Joint International Agricultural Development Faculty Appointments. (JIADF) In earlier discussions of the scope of the MOU, a proposal was made to create in each MOU institution a certain number of JIADF positions. Each of these would be committed to long term efforts to address a particular problem area on behalf of AID and the LDCs. Such positions would involve research on campus and in developing countries, study of the pertinent issues, publishing, advising AID missions and programs, training U.S. and LDC scientists, and provide technical support for AID in-country programs. Long term assignments overseas would alternate with time on-campus. It is interesting to note that Congress is currently considering a "Technical and Research Fellows Program" for up to 150 Fellows to work with AID. It appears as though the objectives of that program could be very effectively met by implementation of the JIADF program within the context of the Memoranda of Understanding as earlier proposed.

There are no doubt numerous other options for improving the MOU program. What is needed now is broad recognition that the program as now conceived is inadequate and the development of sufficient will to debate, analyze and improve upon it before the current deficiencies begin to seriously threaten the entire Title XII effort.

**INTERNATIONAL AGRICULTURAL PROGRAMS**  
**PEER REVIEW**  
**OBJECTIVES AND PROCEDURES**

J. T. Scott  
Director of International Programs  
Iowa State University

**Introduction**

From time to time, universities, and specifically the chief executive officer of agriculture, feel the need for reviews of International Agricultural Programs. AUSUDIAP has put in place a mechanism and process to perform such reviews.

**Objectives**

Peer reviews are offered to assist in evaluating and encouraging excellence in International Agricultural Programs. The main purpose of the reviews is to serve the expressed needs of the cooperating institutions in improving International Agriculture on their respective campuses. The review will encompass all or part of the University's International Agricultural activities (e.g., student participation, institutional building overseas, organizational structure, etc.). A Peer Review Committee will organize review teams and carry out comprehensive review programs for universities and assist them in their planning for improvement as requested.

**Finances**

All on-site costs, travel expenses of each review team, and the review team honoraria are paid by the institution being reviewed. The honoraria are set by the Executive Board of AUSUDIAP.

**Frequency of Review**

Programs are reviewed at the discretion of the Chief Executive Officer of Agriculture at the institution requesting review. The request for the review is to be made by the CEO to the Secretary/Treasurer of AUSUDIAP, indicating the scope and criteria of the review as well as preferred dates for the on-site visit. The information is forwarded to the Chairperson of the review team.

## Selection of the Review Team

Nominations for members of the Review Team are to be made by the Peer Review Committee which transmits the nominations to the institution. Upon approval of the CEOA of the institution, the Review Team is appointed. If the institution objects to review team members, substitutions are made until a satisfactory group has been appointed. The chair of the individual review team shall be a member of the AUSUDIAP Peer Review Committee. The Review Team will consist of at least three members, including the chair.

## On-Site Visit

On-site visits are made during the academic year. A local administrator, usually the Director/Coordinator of International Agricultural Programs, is assigned the responsibility for making all local arrangements for the review and to work with the review team leader in planning and conducting the review. A fairly rigid schedule during the site visit will help assure maximum opportunities for the institution from the visit.

During the on-site review, it is expected that the team will visit with university and agriculture administrators, department personnel, and students to gain assessments from several perspectives.

Oral presentations during the on-site visit should begin with a statement of philosophy and objectives of the institution's International Agricultural Programs efforts and its adherence to the "Principles" on International Agricultural Programs adopted by NASULGC. Subsequently the strategies for achieving the goals/objectives should be stated. During this session, past and current programs should be presented, but the bulk of the time should be spent on future directions.

The institution should discuss ways in which existing activities can be improved. They should also discuss new thrusts or areas where they anticipate allocating resources in the future. The review team can act as an experienced, but impartial, advisor in such sessions. Its members can be facilitators of internal communication. Participants in presentations to and discussions with the review team are determined by the local administration.

## Report

The report of the review team is due to the institution approximately six weeks after the on-site visit. The draft report goes through the Chairperson of the International Agricultural Program Peer Review Committee before being

forwarded to the Chief Executive Officer of Agriculture of the reviewed school. The reviewed school has an opportunity to correct any misconceptions in the draft within 30 days of receiving the report, and should return the draft report to the Chairperson of the Review Team. The final report is the responsibility of the Chairperson of the Review Team. This report will not be distributed or made public other than by the institution reviewed.

### Self-Study

The institution to be reviewed is required to complete a self-assessment prior to the site visit. The report of the self-study and relevant background information should be sent to members of the review team one month before the site visit.

The review, and consequently the self-study, may be for a specific aspect of an international agricultural program or a comprehensive review of the entire international program. The scope of the review, including the self study, must be agreed upon at the time of the request for the review. The self-study should include background information on the program under review, current programs, new thrusts or areas for future allocation of resources.

### Benefits

The institution is the major and the direct beneficiary from the review. All international agriculture professionals will benefit because of the improvements brought about and because of the perception that the profession is determined to strive for excellence. Potential employers of international agriculture professionals, contractors with our universities, and the users of our services at home and abroad should also benefit.

## PEER REVIEW COMMITTEE

The Peer Review Committee is a creature of AUSUDIAP and therefore reports to the Executive Committee of AUSUDIAP.

The Peer Review Committee will make an annual report to the Executive Committee of AUSUDIAP at the time of AUSUDIAP's annual meeting. The annual report starting in 1986 will provide:

- 1) The names of institutions to be reviewed in the upcoming academic year;
- 2) The names of institutions visited during the past academic year (Information about individual institutions reviewed is not to be distributed).

**PANEL DISCUSSION**  
**PEER REVIEW OF INTERNATIONAL AGRICULTURAL PROGRAMS**  
**AUSUDIAP**

Francille M. Firebaugh  
Assistant Provost  
Ohio State University

The decision by the Association and its Executive Committee to have a committee to examine peer review of international agricultural programs signals a certain level of maturity of the association and a sense of confidence on the part of institutions. Review of programs by peers can be very threatening or very encouraging, very useful to not very useful, and relatively costly to less costly.

The final aim of self-study and peer review is to encourage excellence in international agricultural programs. Along the way there is an opportunity to assess the strengths and weaknesses of the program, and to meet other goals which the institution might have.

Self-study is a critical part of preparation for peer review and may well be the key to the process. We at Ohio State like many of your universities have had a program review process in place for a number of years and self-study has been a part of that process (OSU).

**TRANSPARENCY 1**

**Self Study**

Increased awareness of participants  
Basis for peer review and planning  
Internally motivated  
Commitment of unit  
Appropriate participants  
Sensitive to linkages

The purposes of a self-study are to increase the awareness of "program participants concerning what they are doing and what they think they ought to be doing"; "to provide a basis for later steps in peer review processes by communicating, via a written report, facts about the program and about the perceptions of the participants" (Arns and Poland:279). Self-study processes should precede and be the firm foundation for all planning efforts (Kells:440).

Self-study should be internally motivated, should have commitment from the leadership of the unit, and should include representative, appropriate, and useful levels of

participation by members of the various segments of the academic community, and in the case we are addressing today, participation by members of the various segments of the international program within the university (Kells:442). Kells suggests that self-study and review processes that are seen as useful and which involve the community are likely to be more effective than if they are in response to an outside agency (Kells:442). The process which we have proposed is premised on that idea--the institution through the Dean of Agriculture must request the review--AUSUDIAP does not request that an institution have a review.

The self-study committee should create a report which can be understood by those involved in the review, they should use more than one approach to answer a question, and be sensitive to linkages and relationships between programs associated with international agriculture (Arns and Poland:282).

Peer reviewers can often identify strengths and weaknesses of programs and evaluate projected courses of action more effectively than the self-study committee, although very often a peer review committee simply reinforces what has been "discovered" by the self-study process

For a successful peer review, several characteristics and procedures contribute to an optimally successful review:

## TRANSPARENCY 2

### Peer Review Process

Institutional commitment  
Timed with change  
Agreement on purposes  
Clear and informative report  
Appropriate peer reviewers  
Sufficient lead time  
Adequate time for peer reviewers  
Open review atmosphere

- 1) The institution must be committed to the process and construct the review to accomplish stated objectives.
- 2) Reviews are often most appropriate at times of change--a new director of international agriculture, additional programs, staff, funds, etc.
- 3) There is agreement among the self-study committee and the peer reviewers as well as the administration on the purposes of the review.

- 4) A self-study which has clarity and sufficient information to enable the visiting peer committee to understand the problems associated with the program.
- 5) There is a good match between the peer reviewers and the type of program that it is, if the program has a strong geographical emphasis, such as Africa, I would hope that an Africanist familiar with agriculture but not necessarily in agriculture or AUSUDIAP might be included.
- 6) Sufficient lead time to identify the peer reviewers for a given institution, and to provide time for the committee to study the background and review materials.
- 7) The actual review time provides adequate time for discussion and for the peer committee to develop and present their recommendations and receive reactions from those most closely associated with the program.
- 8) The review atmosphere is open and the reviewers and the participants in the review process candid in their discussions.

Maybe it is appropriate to comment on the so what of the whole thing--what happens after the peer review. I worked on these comments during the Memorial Tournament at Muirfield--thus I thought of the golfer as exemplifying follow through. Kells suggests that changes often result following the self study and in our case, the peer review, but many ideas remain buried in reports, lost in the committee or unrecognized as important (Kells:444). It can even happen that ideas and dates are too old to be accurate and useful by the time actual planning or implementation takes place. In order to prevent this, at Ohio State we try (and at times, I must say quite unsuccessfully) to develop a memorandum of understanding soon after the completion of the self-study and the peer review process--that is, in the program review process we use for all academic programs. The memorandum then becomes a statement of what the unit or program has identified as special needs and then the Office of Academic Affairs and the Office of Research and Graduate Studies agree to resources for whatever needs are agreed upon as most important. Not all changes which program review uncovers are needed take new resources.

The process we have developed through AUSUDIAP does not have that final step which can only be made institutionally or wherever the source of the resources. It will be up to the institution to make something happen with the report.

In our case, we can have a program review of international agriculture at any time and suggestions for peer reviewers could be made by the AUSUDIAP committee. In fact, combining internal processes with external organization or agency reviews is now our preferred method of operation.

Finally, I believe that the self-study and peer review processes which we have proposed will be successful if they are tough, thorough, thoughtful and timely.

## REFERENCES

- Arns, Robert and Poland, William, "Changing the University through Program Review," The Journal of Higher Education, (May/June 1980, Volume 51, No. 3), pp. 268-284.
- Kells, H. R., "The Purposes and Legacy of Effective Self-Study Processes: Enhancing the Study-Planning Cycle," The Journal of Higher Education, (July/August 1980, Volume 51, No. 4), pp. 439-447.
- The Ohio State University, "The Ohio State University Guide for Program Reviewers," Second Edition: 1985.

**NOTES ON PEER REVIEW**  
**AUSUDIAP CONFERENCE--MAY 31, 1985**

Macon D. Faulkner  
Vice-Chancellor for Administration  
and  
Director of International Programs  
Agricultural Center  
Louisiana State University

- 1) Limited experience as a director (9 months). However, I do have some recent experience with "Peer" review groups.
  - a) Most recent was a review of our "Strengthening Grant" activities.
  - b) We had requested the site visit as a result of an "unactionable" rating.
  - c) In developing a response and request for the review, we tried to present as strong a case as possible; as a result we may have seemed to be antagonistic, which certainly was unintentional.
  - d) When we are being reviewed by our peers, we have to keep in mind that this is us. And I cannot believe that we do not have the integrity to deal objectively with each other.
  - e) The alternatives to peer reviews may be comparable to the alternatives to growing old--they may seem limited and certainly not the options of choice.
  - f) We have not received an official report of the site visit team. In any case, we were well pleased with the review and certainly with the team. Their approach to getting information that would allow them to make judgements on our activities were outstanding.
  - g) The team's experience was such that they knew the questions to ask that would allow discussion of activities that we had not presented directly or in reports.
- 2) We have some experience also of peer review of a development project. This involved the review by a team that was assigned to develop a project paper for the second phase of the project.

- a) This review involved all activities relative to the project over its life of five years. The project itself was difficult with the usual problems that always occur, i.e., money shortage, personnel changes, overthrow of the government, just to mention a few.
  - b) With the problems associated with the project, especially those not normally encountered in institution building, there were some obvious shortcomings of objectives.
  - c) The team either took the unusual nature of the situation into account and didn't dwell on it, or chose to deal primarily with accomplishments over the life of the project.
  - d) Their report listed only such things as training accomplishments, research activities, and the strengthening of the institutional infrastructure.
- 3) Summary of my early impressions of the peer review process.
- a) From my direct experience of peer reviews, the system seems to work, and do so fairly well.
  - b) There are shortcomings in the system that may need review and change.
  - c) As an example, the very best people are not always available especially to serve on review teams, due to their busy schedules.
  - d) There is never enough time to meet review deadlines or to assemble the team to meet the deadlines.
  - e) We know the constraints, and, overall, the system with its faults may still be about the best.
- 4) Questions
- a) Number one--what are the alternatives?
  - b) Could we establish a permanent pool of peer review people? Consultants?
  - c) Should we develop a procedure to review the peer reviewers? Resume?
  - d) Should we look at the composition of peer review teams? Discipline areas, etc.?
  - e) Should we review the position that peer reviews are taken only as recommendations that can be ignored?

# PROGRAM

## General Sessions in Main Auditorium

### Wednesday, May 29

- 3:00 - 5:00 p.m. Guided Campus Tours ..... Georgia Center Lobby  
 AUSUDIAP Executive Board Meeting ..... Room J
- 4:30 - 6:00 p.m. Registration ..... 2nd Floor Registration Desk
- 6:00 - 8:00 p.m. Reception ..... Banquet Area

### Thursday, May 30

Coffee and Pastries ..... Lobby Lounge

Chairperson: *Darl E. Snyder* (Host)  
 Director, International Development, University of Georgia

8:00 a.m. **State of Association Address** —  
*Harold R. Matteson*, Chairperson, AUSUDIAP, Assistant Vice-  
 President, International Programs, New Mexico State University

8:15 a.m. **Local Arrangements** —  
*Darl E. Snyder*, University of Georgia

8:20 a.m. **Welcome and Comments** —  
*S. E. Younts*, Vice President for Services, University of Georgia

8:30 a.m. **Looking Forward to World Agriculture — The Changing Roles of  
 National Programs and CGIAR Centers**

Panel Leader: *Richard Sawyer*, Director General, International  
 Potato Center, Lima, Peru

Panel Members:

*Curtis Farrar*, Representative of Consultative Group on  
 International Agricultural Research (CGIAR) System, World  
 Bank

*Colin McClung*, President, International Agricultural  
 Development Service (IADS)

*Carlos Valverde*, Representative for Latin America, International  
 Services for National Agricultural Research

10:00 - 10:30 a.m. BREAK ..... Lobby Lounge

10:30 - 12:00 noon **Title XII Perspective — Overview & Future Outlook (10th  
 Anniversary)**

Chairperson: *Woods Thomas*, Associate Dean & Director,  
 International Programs in Agriculture, Purdue University

Panel Members:

*John Eriksson*, Deputy Assistant Administrator for Research,  
 Bureau for Science & Technology, USAID, Washington, D.C.

*Benjamin Payton*, President, Tuskegee University

*William E. Lavery*, President, Virginia Polytechnic Institute &  
 State University, and Chairman, International Affairs Committee  
 of National Association of State Universities and Land-Grant  
 Colleges (NASULGC)

12:00 - 1:30 p.m. LUNCHEON ..... Banquet Area

Presiding: *Mary Rojas*, Director: Women in Development, Virginia  
 Polytechnic Institute & State University

***New Directions in International Development Assistance***

***Speaker: The Honorable Dean Rusk***, University of Georgia

1:30 - 3:00 p.m. **Project Management Systems: Application of New Technology  
 Systems to International Programs**

Chairperson: *Thomas A. McCowen*, Assistant Director,  
 International Agriculture, University of Illinois

Panel Members:

*Jim Carmon*, Assistant to the President, University of Georgia

*Peter Hartman*, Director of International Programs, Florida A&M  
 University

*Sam Houston Johnson III*, Assistant Professor of Agricultural  
 Economics, University of Illinois

3:00 - 3:30 p.m. BREAK ..... Lobby Lounge

3:30 - 5:00 p.m. AUSUDIAP Business Meeting

Chairperson: *Harold R. Matteson*, Chairperson, AUSUDIAP

6:00 - 7:00 p.m. SOCIAL ..... Banquet Area

7:00 p.m. BANQUET ..... Banquet Area

Presiding: *Harold R. Matteson*, Chairperson, AUSUDIAP

8:00 p.m. Entertainment ..... Main Auditorium  
*University of Georgia Men's Glee Club*, *Dr. Pierce Arant*,  
 Director

**Awards Presentation**

Chairperson, AUSUDIAP Awards Committee: *Vernon Larson*,  
 Director of International Agricultural Programs, Kansas State  
 University

1991

**Friday, May 31**

Coffee and Pastries ..... Lobby Lounge

8:30 - 10:00 a.m. **Building Development Assistance Networks**  
Chairperson: *Comelia B. Flora*, Professor of Sociology, Kansas State University  
Panel Members:  
*Harold E. Kauffman*, University of Illinois (INTSOY)  
*Cris Andrew*, University of Florida (FSSP)  
*Larry Pezzullo*, Catholic Relief Services (P.V.O.'s)

10:00 - 10:30 a.m. BREAK ..... Lobby Lounge

10:30 - 12:00 noon **Building Political & Funding Support for International Agricultural Development**  
Chairperson: *Margaret Fahs*, Assistant Director of International Programs, NASULGC  
Panel Members:  
*Lawrence Apple*, Coordinator of International Programs, North Carolina State University  
*William P. Flatt*, Dean, College of Agriculture, University of Georgia  
*James Harris*, Director of Staff Development, University of Georgia Cooperative Extension Service  
*Earl Kellogg*, Associate Director, International Agriculture Programs, University of Illinois

12:00 - 1:30 p.m. LUNCHEON ..... Banquet Area  
Presiding: *Marinus Van Elswyk*, Director, International Agriculture Programs, California State University, Fresno  
**BIFAD and Its Role in Strengthening International Agricultural Programs**  
**Speaker:** *E. T. York*, Chairman of the Board for International Food & Agricultural Development

1:30 - 3:00 p.m. **MOU Experiences and Future Tasks**  
Chairperson: *Eugene Adams*, Vice-Provost for International Programs, Tuskegee Institute  
Panel Members:  
*John Eriksson*, Deputy Assistant Administrator for Research Bureau for Science & Technology, USAID, Washington, D.C.  
*Keith Sherper*, Director, Office of Technical Resources (AID)  
*James Collom*, Associate Director, International Programs in Agriculture, Purdue University

3:00 - 3:30 p.m. BREAK ..... Lobby Lounge

3:30 - 4:30 p.m. **Peer Review of International Agricultural Programs**  
Chairperson: *J. T. Scott*, Director of International Programs, Iowa State University  
Panel Members:  
*James B. Henson*, Director, International Program Development, Washington State University  
*Francille M. Firebaugh*, Assistant Provost, Ohio State University  
*Macon D. Faulkner*, Vice-Chancellor for Administration and Director of International Programs, Agricultural Center, Louisiana State University

4:30 - 5:00 p.m. **Summary & Wrap-Up:** *P. Howard Massey, Jr.*, Associate Dean and Director, International Development, Virginia Polytechnic Institute & State University

6:30 p.m. PICNIC at Flinchum's Phoenix (Buses provided)  
Presiding: *Darl E. Snyder* (Host), University of Georgia  
Entertainment: Alabama Goober Grabbers

**Saturday, June 1**

8:30 - 12:00 noon Executive Committee Meeting ..... Room J

## SPOUSES' PROGRAM

May 30 - 31, 1985

### Thursday, May 30

#### Kenny Rogers' Farm

- 9:30 a.m. Board your air-conditioned bus at the Georgia Center or
- 9:40 a.m. Board at Ramada Inn

The 30-minute ride will take you through Clarke County rolling hills and the peaceful towns of Hull and Colbert. At the farm gates a tour guide will board the bus and give you information as you view the beautifully landscaped grounds, the lakes, and the Rogers' home. You will be pleasantly surprised when you tour the horse barn. Time permitting, you will also see the renovated barns originally built by prisoners who received a salary of \$1.00 a year.

- 11:30 a.m. Return to Athens
- 12:00 noon Lunch at Martel's — French restaurant (\$7.20 all inclusive)
- 1:30 p.m. Return to your hotel
- 2:15 p.m. Leave from Georgia Center
- 2:25 p.m. Ramada Inn by bus

Enroute you will see the home of the first Garden Club in America; the double-barreled cannon that guards City Hall, one of Athens' most cherished memorabilia, a unique failure; and you will be told about the tree that owns itself.

**Visit:** The Church-Brumby House (c 1840), the Taylor-Grady House, and the University of Georgia President's Home (c 1857). Some of the finest examples of Greek Revival architecture in the nation.

At the President's home you will be greeted by Dr. Diane Davison, the University's first lady. You will enjoy tea, canapes, petit fours, and special pastries made by an international chef. From the veranda overlooking the formal gardens you will view the Historical Dance Ensemble dressed in period costumes as they perform social dances popular in the South at the time of the University of Georgia's founding in 1785.

- 4:30 p.m. Return to your hotels

### Friday, May 31

- 9:00 a.m. Leave Georgia Center
- 9:10 a.m. Leave Ramada Inn

**Visit:** Madison, Georgia, traveling on the Georgia Antebellum Trail that stretches from Athens to Macon.

In Antebellum days Madison was regarded as the "most aristocratic town on the stagecoach route from Charleston to New Orleans." Before and after lunch you will visit the "town Sherman refused to burn," a treasure trove of well-preserved history with the charms of *Gone With The Wind*. You will visit historic homes, churches, and the Madison Cultural Center and museum.

- 12:00 noon Lunch will be at Fox Hollow Restaurant  
Visit a craft shop (optional)
- 2:30 p.m. Leave Madison
- 3:30 p.m. Return to hotels
- 4:00 p.m. Room A — View film *Georgia Reaches OUT*. Filmed in Burkina Faso, Africa. It depicts the effort made by Georgians and Burkinabes in the area of food production, education, and health improvement.  
Room B — Get advice from beauty consultant, Mrs. Pat Jones, from *Mary Kay Cosmetics*. Session will include: How to apply makeup, how to tie scarfs, and what colors to wear.

## AUSUDIAP COMMITTEES 1984 - 1985

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Cornelia Flora, Kansas State University

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Francille M. Firebaugh, Ohio State University

**Awards Committee**

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**AD HOC Communication Workshop Committee**

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Darl Snyder, University of Georgia  
Ed Oyer, Cornell University

**Local Arrangements**

Darl Snyder  
Bernadette Allard  
Eva Miller

**Spouses' Program**

Bernadette Allard  
Pauline Abramof — Brazil  
Mrs. Rajjo — Syria  
Mr. Magdy Mohamed — Egypt

**Conference Coordinator**

Rita Manning

1/12/71