

AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D. C. 20523  
**BIBLIOGRAPHIC INPUT SHEET**

FOR AID USE ONLY  
TEMPORARY *Batch 93*

1. SUBJECT CLASSIFICATION	A. PRIMARY
	B. SECONDARY

2. TITLE AND SUBTITLE  
Summary proceedings

3. AUTHOR(S)  
(100) Dyck, R.G.; Albritton, R.B. (101) Conf. on Int. Development: a Working Conf. on Univ. Action, Va. Polytechnic Inst. and State Univ., Blacksburg, 1976

4. DOCUMENT DATE 1976	5. NUMBER OF PAGES 110p.	6. ARC NUMBER ARC
--------------------------	-----------------------------	----------------------

7. REFERENCE ORGANIZATION NAME AND ADDRESS  
Va. Polytech.

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)

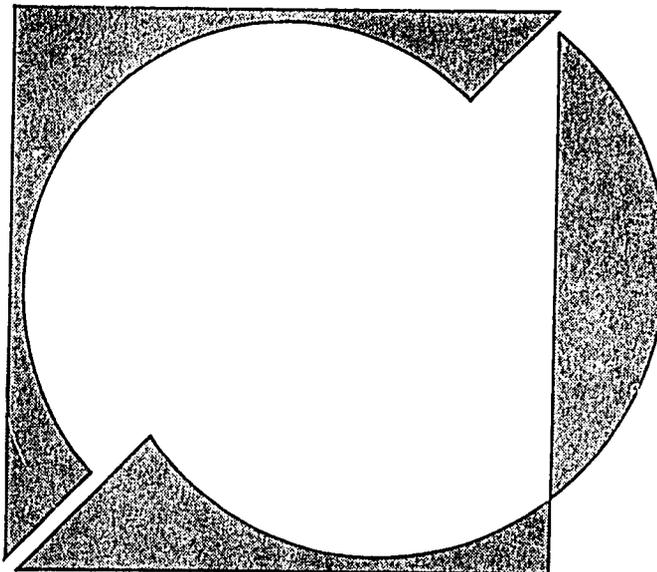
9. ABSTRACT

10. CONTROL NUMBER PN-AAC-762	11. PRICE OF DOCUMENT
12. DESCRIPTORS	13. PROJECT NUMBER
	14. CONTRACT NUMBER AID/ta-G-1357 GTS
	15. TYPE OF DOCUMENT

AID/td-G-1357 GTS  
PN-AAC-762

# Summary Proceedings

## Conference on International Development



co-sponsored by:

Virginia Polytechnic Institute and State University

and

National Association of State Universities and Land-Grant Colleges

**VPI&SU**

**September 27-29, 1976**

SUMMARY PROCEEDINGS  
OF THE  
CONFERENCE ON INTERNATIONAL DEVELOPMENT:  
A WORKING CONFERENCE ON UNIVERSITY ACTION

Virginia Polytechnic Institute and State University

September 27-29, 1976

PARTIALLY FUNDED BY  
GRANT NO. AID/TA-G-1357

Edited by

Robert G. Dyck

and

Robert B. Albritton

Published and Distributed by:  
University International Programs  
105 Patton Hall  
Virginia Polytechnic Institute and State University  
Blacksburg, Virginia 24061

November 1976

Logo Design by Regan

## CONTENTS

		<u>Page</u>
1. INTRODUCTION	Robert G. Dyck and Robert B. Albritton	1
2. WELCOME TO THE CONFERENCE: ITS BACKGROUND AND PURPOSES	William E. Lavery	5
3. WELCOME TO CONFERENCE ON IMPLEMENTATION OF TITLE XII	Daniel G. Aldrich, Jr.	13
4. PUBLIC AND PRIVATE SECTOR ASSISTANCE TO DEVELOPING COUNTRIES	Hubert H. Humphrey	21
5. TITLE XII -- ROLE OF THE UNIVERSITIES	Gerald W. Thomas	33
6. TITLE XII IMPLEMENTATION	Paul Findley	43
7. TITLE XII IMPLEMENTATION	Daniel Parker	57
8. SUMMARY COMMENTS AND RECOMMENDATIONS ON EDUCATION AND TRAINING UNDER TITLE XII	John Blackmore	71
9. SUMMARY COMMENTS AND RECOMMENDATIONS ON INSTITUTION BUILDING UNDER TITLE XII	Jackson A. Rigney	79
10. SUMMARY COMMENTS AND RECOMMENDATIONS ON INTERNATIONAL INSTITUTIONAL COLLABORATION UNDER TITLE XII	Anson R. Bertrand	85
 <b>APPENDICES</b>		
A. Conference Program		93
B. List of Conference Participants		99



## 1. INTRODUCTION

Robert G. Dyck, Conference Coordinator  
Director of University International Programs  
Virginia Polytechnic Institute and State University

and

Robert B. Albritton  
Assistant Conference Coordinator for Planning and Arrangements  
Department of Political Science  
Virginia Polytechnic Institute and State University

This summary of the proceedings of the Conference on International Development: A Working Conference on University Action was prepared primarily for the use and guidance of participants in the National Association of State Universities and Land-Grant Colleges (NASULGC) Annual Meeting to be held in Washington, November 14-17, 1976. The Summary Proceedings contain the major addresses of the conference in the same sequence in which they were given. Conference proceedings including the panel discussion papers on the three principal concerns of the conference (see Conference Program, Appendix A) will be published at a later date.

These three principal concerns of the conference, education and training programs for development, institution building in developing countries, and international institutional collaboration for development, were derived from major areas at issue in connection with the implementation of the 1975 Famine Prevention and Freedom from Hunger Amendment (Title XII) of the Foreign Assistance Act. The purposes of the conference, to help prepare the university community for its major new responsibilities in connection with this legislation, are elaborated in the remarks of William E. Lavery, President, Virginia Polytechnic Institute and State University (Chapter 2).

Subsequent chapters provide discussion of Title XII from a variety

of points of view: the National Association of State Universities and Land-Grant Colleges, the legislative and executive branches of the U.S. government, members of the Board for International Food and Agricultural Development (BIFAD), and members of the university community with extensive international development experience.

Chapter 3 provides an assessment of the challenge of Title XII to the university community, primarily in the context of the public and land-grant university movement in the United States, by Daniel G. Aldrich, Jr. Chancellor, University of California, Irvine, and President, NASULGC. Senator Hubert H. Humphrey, Senate co-sponsor of the legislation, approaches Title XII in Chapter 4 from the broad perspective of U.S. policy relative to problems of worldwide poverty and development needs. In Chapter 5, Gerald W. Thomas, President, New Mexico State University, Chairman of the NASULGC International Affairs Committee, and Member, Board for International Food and Agricultural Development, discusses major areas of organizational and substantive concern relative to the interaction of universities, BIFAD, and USAID with counterpart institutions in developing countries.

Congressman Paul Findley, author of Title XII and its sponsor in the U.S. House of Representatives, provides in Chapter 6 his summary of Congressional intent with regard to the legislation as well as a ringing appeal for the joint participation of the university community, BIFAD, and USAID on the tasks which lie immediately ahead. He calls, in addition, for a conference to evaluate progress in implementing Title XII, to be scheduled six months after completion of the VPI&SU conference. In Chapter 7, Daniel Parker, Administrator, U.S. Agency for International Development, provides his assessment of the respective roles of principal institutional

actors in Title XII, with a plea for collaborative activity based on appropriate divisions of authority and accountability.

The last three chapters provide conference summary and recommendation statements from the perspective of three experienced university international development practitioners, as related to the three major areas of concern to the conference. In Chapter 8, John Blackmore, Professor of Agricultural and Applied Economics, University of Minnesota, discusses immediate and long-term needs related to education and training for development. Jackson A. Rigney, Dean of International Program, North Carolina State University, discusses in Chapter 9 the need for continuing work in institutional development, with special reference to the intra-national organizational tasks that remain, as unfinished business, following the VPI&SU conference. Finally, Anson R. Bertrand, Dean of Agriculture, Texas Tech University and Member, Board for International Food and Agricultural Development, discusses national and international institutional collaboration in Chapter 10 from his special vantage point as a member of the non-Land-Grant community as well as BIFAD.

It was clear to the participants in the Conference on International Development that much work remains to be done in structuring organizational and operating relationships among all institutional entities which will engage in implementing Title XII. First steps in this connection have now been taken by BIFAD, in its initial meetings held October 18-20, 1976. Additional steps are anticipated in the NASULGC Annual Meeting to be held November 14-17, 1976. Major opportunities for action by the NASULGC International Programs Committee and the Council of Presidents lie ahead, both in the annual meeting and subsequently, related to how member universities will organize themselves for the major international development challenges

of the immediate and longer-range future.

One of the immediate decisions which must be made, in this connection, is related to when and where the next major conference on university participation in Title XII should be held. It is hoped that this can be decided at the NASULGC annual meeting.

We would like to close this Introduction with special thanks to all the individuals who participated in the VPI&SU International Development Conference (whose names are listed in Appendix B), to the National Association of State Universities and Land-Grant Colleges for co-sponsorship of the conference with Virginia Polytechnic Institute and State University, and to the United States Agency for International Development and Xerox Corporation for their financial assistance to the conference. The success of this conference is due entirely to the spirit of sharing and collaboration which illuminated it so fully.

Blacksburg, Virginia

October 25, 1976

## 2. WELCOME TO THE CONFERENCE: ITS BACKGROUND AND PURPOSES

William E. Lavery  
President  
Virginia Polytechnic Institute and State University

Welcome to Blacksburg and Virginia Polytechnic Institute and State University. We are here as a result of a piece of landmark legislation: the Famine Prevention and Freedom from Hunger Amendment to the Foreign Assistance Act known to most of us as Title XII. This legislation offers universities a new role in international development and in finding solutions to worldwide problems of malnutrition and hunger.

To consider this new role and its implications, particularly for university communities, we have invited you as participants from around the world; from scholarly and research-oriented institutions; from the public and private sectors; from government agencies and from many disciplines, all of whose work has a bearing on the enormous task of international development.

We are here because of this legislation, Title XII, and we are grateful for the labor and efforts of those present with us at this conference who have made this legislation possible.

But the productiveness of our time together will depend on how diligently we address ourselves to implications of this legislation for our continuing efforts in international development. We believe we have captured the essential spirit of Title XII by addressing ourselves to "international development" rather than to problems of hunger and malnutrition or even to agricultural production alone.

The American public has belatedly discovered the tragic extent of hunger and malnutrition in the world. But agricultural and nutrition

workers from academic institutions in this country and abroad long have been quietly but effectively in the field with new technologies and strategies to feed hungry people. Indeed, this condition would be more tragic than ever were it not for relatively obscure individuals who have labored in the most remote areas, pioneering efforts to stem the tide of hunger on a global scale.

Today these same people are returning from experiences abroad to tell us that new breakthroughs in agricultural technology are not sufficient. They tell us that visions of a world of plenty are pipe dreams unless new and appropriate technologies can be developed which are accessible to and implemented by small farmers and landholders throughout the world.

These new technologies require new approaches, new models, new strategies on a far broader scale than ever before -- strategies which, I believe, are contemplated in the legislation (Title XII) and to which we shall address ourselves during the next several days.

1. First, there must be new strategies for education and training -- training our own students to participate in the process of international development, as well as international students who seek our resources for their own personal training and development. To make new technologies accessible requires new approaches to training students in this country and abroad with special sensitivity to the need for training and educating larger numbers than ever before in their own countries.

2. Secondly, to make new technologies accessible requires new approaches in institution building -- appropriate market and distribution systems which allow those who produce food to take advantage of the benefits of

agricultural science. At the same time, these systems must bring to the tables of those who suffer the pangs of hunger and malnutrition fruits of progress in worldwide agriculture. Nor can we neglect the vital roles of health care systems, family structures, education systems; all perform vital roles in raising living standards. This is what we mean in the best sense of "international development."

3. Thirdly, to make this technology accessible, we need new forms of collaboration, not only in research efforts but in the efforts of all agencies involved in disseminating knowledge -- educational institutions of all kinds in this country and abroad; highly specialized skills and technologies of the international research institutes along with their national counterparts; agencies of government which support, assist, oversee, and carry out programs in the development area; and, wherever feasible, the private sector with its own unique contributions to the betterment of people's lives on the world's frontiers.

New models, new strategies, new approaches to international development -- this is the task which we have assumed with this legislation and with this conference. Whatever is done during these days, we are together embarking on a course which will cast the future of international development for decades to come.

We at Virginia Tech, with the support of the National Association of State Universities and Land-Grant Colleges, Xerox Corporation, and the U.S. Agency for International Development, are sponsoring a conference on international development because we believe it is timely both for this University and for the concerns of land-grant universities particularly. For us it is the culmination of a series of events beginning with an October

day nearly a year ago when the president of our student body walked into my office with material from the National University Conference on Hunger and asked: "Dr. Lavery, why is Virginia Tech not involved in this conference?"

We became involved -- to the extent of sending one of the largest delegations of faculty, administrators, and students from a land-grant university to that conference in Austin, Texas. These faculty and administrators, under the leadership of Dr. Howard Massey, prepared position papers on the topics of the conference.

The results have been profound: among them the initiation of a course on world hunger as part of the University curriculum. Perhaps more significant was our increasing awareness of the responsibility for universities across the country to be involved with the problem of world hunger.

On March 10, I presented a prospectus to the Executive Committee of the National Association of State Universities and Land-Grant Colleges, proposing such a conference. We were so encouraged by the response of these board members that our Vice President for Academic Affairs, Dr. John Wilson, appointed a committee to plan and implement such a conference prior to the fall meeting of NASULGC.

In the meantime, I visited the Philippines to observe the effective efforts at collaboration between the Philippine government, USAID, and this University. On that occasion, I was delighted to have the opportunity to meet Secretary Tanco, one of the world's most effective mobilizers in the war against hunger and malnutrition. We are delighted to have him as our guest at the conference.

This conference is also timely in another sense. We believe it comes at a strategic point in consultations concerning the issues raised by Title XII and the rapidly emerging new models of the international development effort. We, like most of you through your respective institutions, have been involved in a series of conferences: a meeting on Title XII policy at North Carolina State University; a series of regional conferences sponsored by ISEC and AUSUDIAP on Title XII; the Habitat Conference in Vancouver; and the World Food Conference at Iowa State.

We view this conference today as a major effort to pull together the work of these consultations in preparation for the November meetings of NASULGC. To this end, we have attempted to identify key people in the international development area to help us focus issues and challenges which we have identified. This is who you are and why we are here. Because of the lateness with which planning for the conference necessarily began, not everyone whom we so identified could be here. But if you look around you, you will meet what I believe to be one of the most impressive gatherings of talent and concern in the international development area that we could hope for.

Nor do we believe that this will be the end of these consultations. I fully conceive the desirability and necessity for continuing contacts by this select group of people who in many respects bear both the burdens and the hopes of global development.

Why should international development warrant such intense concern by state universities, particularly those of the land-grant system?

1. One reason is that knowledge knows no boundaries. Isolation from the worldwide community of ideas, knowledge, and technical expertise

can be only detrimental to the mission of land-grant universities to the people of their own state. Strong international research, extension, and teaching efforts bring to a university and its constituency the most valuable, advanced technology which enables us to fulfill our mission at home as well as abroad.

2. More than this, our universities have a responsibility to support international development efforts because they are bound to the needs and interests of this nation as a whole. (The Morrill Act established land-grant colleges and universities with national responsibilities and commitments. Their involvement in international development efforts provides further confirmation of the genius of the land-grant system in which American universities act independently and interdependently in response to the needs of the nation as a whole.)

3. Finally, and most importantly, we are involved because the interdependence of all nations is now an important reality. The future and general welfare of our state is inextricably linked to the future and general welfare of the community of nations. The quest for peace and security at home is global in character -- food, environment, energy, resources, peace and cooperation with other nations are issues international in scope.

The answers to these problems can come about only from increasing communication between the people of the United States and all of the world's people.

As Dr. John A. Hannah, former President of Michigan State University and Deputy Secretary-General of the United Nations World Food Conference, has put it so well:

"In this shrinking world, it is not either an interest in the solution of domestic problems or an interest in the welfare of the rest of the world. It must be both."

I am confident that our time spent together will be engaged fruitfully and in this spirit.



3. WELCOME TO CONFERENCE ON IMPLEMENTATION OF TITLE XII

Daniel G. Aldrich, Jr.  
Chancellor  
University of California, Irvine

and

President  
National Association of State Universities and Land-Grant Colleges

It is a special privilege for me to join President Lavery and Robert Dyck in welcoming the participants to this working conference on the implementation of the 1975 Famine Prevention and Freedom from Hunger Amendment (Title XII) of the Foreign Assistance Act. The conference provides me with my first opportunity to visit V.P.I., an institution which I came to know, only by name, early in my college career because I had to memorize and be able to reproduce Professor N. A. Pettinger's chart for teaching the relation of soil reaction to the availability of plant nutrients to crops (V.P.I. Bulletin 136, 1935). Any student of soil chemistry worth his salt knew that bulletin as well as the man and the institution that published it. After 42 years I have the opportunity to put man, work, and place together.

This is a special occasion for me for another reason and that is because I have the privilege of welcoming participants to a conference which in my opinion has the potential for being one of the most significant events in the history of university involvement in U.S. international development. Recall with me briefly the road we have travelled since World War II.

Four years after World War II, the United States was one of the richest and most powerful democracies in the world. It had spent billions of dollars to help fight the war; additional billions were spent

between 1945-1948, to aid Japan and the war-shattered countries of Europe in rebuilding their agricultural and industrial economies. While much had been done by 1949, in helping other nations recover from the ravages of war, another area of need could not be ignored. Because of the war and subsequent changes in political structure, many developing nations had gained long sought independence. These nations now needed to raise their standards of living to ensure the survival of democratic freedoms. Would the United States now continue to share its wealth with the new democracies?

On January 20, 1949, President Harry S. Truman, in his inaugural address, pledged such help in his now famous "Point Four":

"Fourth we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of the undeveloped areas. . .

I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life. And in cooperation with other nations, we should foster capital investment in areas needing development.

Our aim should be to help the free people of the world through their own efforts, to produce more food, more clothing, more materials for housing, and more mechanical power to lighten their burdens."

Only hours after the speech, John A. Hannah, then president both of Michigan State University and of the Association of Land-Grant Colleges and Universities (now the National Association of State Universities and Land-Grant Colleges) wired the President that the institutions he represented were ready to assist in making the dream a reality.

President Truman accepted the offer. He named Oklahoma State University President, Henry G. Gennett, first director of the Technical Cooperation Program (which was eventually succeeded by the Agency for International Development--AID). These agencies made it possible for the universities to extend their reach around the world to help other nations to develop new colleges and to use new educational, agricultural, engineering, and industrial technologies.

State and land-grant universities were uniquely suited to the task. They had themselves been created to meet the basic needs of their own developing country, which in the mid-nineteenth century required the generation of whole new fields of knowledge plus more knowledge in existing fields and the training of men and women who could use that knowledge for the benefit of their communities.

Through trial and error, the state and land-grant universities, during the past quarter of a century, have modified and improved their teach-research-extension methods, in order that they might more effectively respond to the needs of developing countries.

In the 1950's our institutional involvement consisted primarily of attempts to transfer U.S. technology. It soon became obvious that institutional deficiencies were too great to support such an effort and a shift to institutional development was made. I suspect that a great many

more useful things were done during this period than is generally recognized. At least we began to see the need for developing an in-country capability.

During the 1960's emphasis was placed on building universities in the land-grant mold. Although the idea of transplanting our system intact may have been faulty, it did not take long for university staff to recognize that the concept of our integrated approach to agricultural development, rather than the land-grant college system per se, was the only workable solution. Thus the universities settled down to the task of teaching, training, establishing new departments, revising curricula, and, in general, building the internal capability to educate agricultural scientists. In more advanced situations graduate programs were established and research and public service capabilities were developed, often in different agencies. As we learned more about institution building, programs were modified to make use of experience gained. There is no question that major and long lasting contributions to international agriculture were made by the land-grant colleges during this period.

In the early 1970's, there was a new theme, and national policy shifted away from the type of program we were carrying out in the 1960's. We were told that the new role of the universities would be in supporting R&D projects and in participating in Research Network Systems.

Regardless of the pros and cons of R&D projects and Research Network Systems, they still did not provide the mechanisms which the Land-Grant Colleges needed to utilize most effectively their resources in agricultural science and education development.

At long last, it now appears that we have the mechanism that will

permit our agricultural universities to play a more active role in focusing their considerable expertise in food production on the problems of developing nations. After a year of vigorous activity in Congress, a formal framework of implementing this concern was developed in the form of the Findley-Humphrey Amendment to the International Development and Food Assistance Act of 1975, HR 9005. This bill was signed by President Ford on December 20, 1975.

Without going into a detailed discussion of this Act, I would like to stress the factors related to "Title XII--Famine Prevention and Freedom from Hunger" which I believe can have a far reaching effect on world food problems provided the universities can react positively and forcefully to this opportunity. Through this Title:

1. Congress formally recognizes the effectiveness of land-grant and other U.S. universities in promoting agricultural progress in this country and the importance of using our universities in the "United States Government's international efforts to apply more effective agricultural sciences to the goal of increasing world food production."

2. Congress has essentially given the universities a mandate to become involved in international development. Though this Act may be far from the Hatch Act which has been so important to us, it does give us a more direct path to Congress for funding in this area.

3. A mechanism is provided for universities to make an input in setting policy, in planning, development, and implementation of international activities. This establishes a new cooperative and coequal relationship with AID which will involve universities in the development of programs at a much earlier stage than has been possible to date. This

is especially important in developing programs which will make more effective use of university resources.

4. The capabilities of U.S. universities are to be strengthened, enabling them to implement more effectively activities authorized in the bill, and longer term funding (or at least a basic commitment to funding) of these activities is projected. These factors are extremely important to the universities, allowing us to develop long-range plans from the department level up and to cover justifiable costs for campus support. Essentially, this should allow us to "institutionalize" more formally international activities in our universities, and other national associations.

5. The importance of international activities to U.S. agriculture is recognized. This removes the sharp distinction between domestic and foreign programs as has been the case in previous foreign aid programs which interpreted "international" as meaning "foreign."

6. We are provided a potential source of funding to enable us to work more effectively in institutional networks including other U.S. universities, international research centers, and with foreign universities. Previously it has been relatively easy for research centers and foreign agencies to obtain support for networking activities while U.S. universities received little support to maintain these important linkages.

The major problem before us may well be in organizing ourselves to meet the challenge offered by the new legislation. We must find ways to present a sufficiently unified approach to AID, other international agencies, and Congress to develop a more meaningful participation of U.S. universities in world food problems. We must also develop effective, long-range, cooperative relationships with these agencies as we have

done with the USDA. The new legislation "opens the door," but we must react positively and rapidly to keep it open.

On August 2, 1976, President Ford appointed 6 members to the permanent Board for International Food and Agricultural Development. Four of the members, including the Chairman, are from member institutions of the Association I represent.

The Board, authorized by Title XII, has awesome responsibilities! Institutions chosen to implement the provisions of Title XII of the Foreign Assistance Act assume responsibilities of similar magnitude, for upon them rests the burden of demonstrating to the people of this nation and to the world that we are ready and able to share know-how we have developed for building the institutions that provide the education and training that frees a people from the specter of hunger.

To all who have gathered here to commence the task of implementing the purposes of Title XII, I say, warmly and appreciatively, welcome and thank you.



#### 4. PUBLIC AND PRIVATE SECTOR ASSISTANCE TO DEVELOPING COUNTRIES

Senator Hubert H. Humphrey\*

I have come to Virginia Polytechnic Institute this evening because I share your commitment to the cause of human development in our own country and abroad.

From my childhood in South Dakota and throughout my public career, I have been deeply involved in the development of an individual's full potential in an environment of expanded economic and social opportunities.

I recognize that even in America the development process is still on-going. Poverty is still a way of life for nearly 30 million of our people. Our inner cities have become the home of the desperately poor and disadvantaged. And many of our rural areas are still without basic services and opportunities available to the great majority of our people.

Our own development has not progressed as far as I would like. But I refuse to let this circumstance obscure the basic imperative of global interdependence -- an interdependence which requires us to recognize that our economic well being depends on others as well as ourselves.

I want to review briefly where we have been and where we must go if we are to make any meaningful progress toward the eradication of poverty, hunger, disease and illiteracy which afflict so many billions on this planet.

In the early years of our experience, we attacked the problem with a messianic zeal. We believed that the goal of development was to replicate our own American economic model. The first stage was to build a

---

\*Senator Humphrey's remarks were delivered by Dr. C. Peter Magrath, President, University of Minnesota

foundation for industrial development -- to build the roads, dams and major industrial projects which were to create an economic base for greater and more rapid industrialization of all sectors of the economy we were aiding. In our own characteristic and confident manner, we set about this grand design, hoping that the American dream could come to the crowded cities and rural backwaters of the developing world.

By the early 1970's, many of us began to realize that our programs were not working. We realized the full dimensions of the problem we faced.

By 1970, it was clear that the course that the American government was taking was making very little direct and lasting impact on the lives of the world's poorest majority. The trickle-down approach was not working.

The poor had been bypassed by the GNP surges of the 1960's caused by large infusions of capital, cheap energy and relatively low inflation levels.

But there was another dimension to this problem. We failed to understand that poverty was not an abstraction. It was, instead, a human condition caused by the lack of political and economic power by people who had no part in the financial, economic and political decisions that affected their lives.

By the beginning of this decade we began to understand the problem of poverty as a basic part of the dislocation of the world's economic system. Energy shortages, international trade and monetary problems, inflation, the unchecked growth of population, the unregulated approach to exploitation of the riches of the seas, and the malnutrition and starvation of millions in a world of relative plenty were all interconnected and interrelated components of the poverty we were trying to eradicate.

This realization brought a truly immense challenge into better focus.

The legislation in 1973 that is popularly called the "New Directions" was a result of our analysis of the problem of the phenomenon of poverty

as it existed in the beginning of this decade.

I believe that the guidelines which we wrote into the Foreign Assistance Act that year marked a significant turning point in America's battle against world poverty. They represented the refinement of our early experience with a new and heightened sensitivity to the problems of ordinary people.

Since we first began working on that legislation, a series of economic and natural disasters has further sharpened our awareness of the great problems which we face in the development field.

Bangladesh and the Sahel brought home to us the lesson that despite the unparalleled material prosperity which exists in the developed world, unless our food resources are properly managed and allocated, vast numbers of people still remain pitifully vulnerable to the ancient scourge of famine.

And we also experienced a critical change in the world economic system. A dramatic increase in the price of crude oil aggravated and escalated a recession which had already begun several months before in the industrialized world.

This recession spread with devastating rapidity until it created depression level conditions in much of the developing world. Many of the earlier gains were rapidly wiped out as nations exhausted foreign exchange reserves to buy high priced food and fuel. It was this severe recession which brought home to us the essential interdependence between the developed and developing world.

Along with the terrible specter of the problems of pervasive hunger and economic recession came a growing awareness of the dimensions of the population crisis. We began to understand that any gains made in the

battle against poverty were often being outpaced by the rapid population growth in the poor nations of the world.

By 1975, in the International Development and Food Assistance Act, we now had two legislative mandates to shift our bilateral aid away from the large scale capital transfers and toward those whose lives had remained untouched by the rapid growth of the past decade.

These two measures began to focus our efforts on the critical problem areas which affect the lives of the majority of the people in less developed countries:

- Food products and nutrition.
- Rural poverty and unemployment.
- Population and health.
- Education and development of human resources.

But added to these new development policies adopted at the end of the war in Vietnam, was a basic and fundamental desire on the part of the Congress to depoliticize and demilitarize our aid efforts. We finally found an opportunity to use limited American resources where they were needed most.

I consider the deemphasizing of political and military considerations in our economic programs as one of the major accomplishments of these legislative efforts.

By creating new policy sections built around the New Directions theme, by conforming previous policy to the new priorities, and by creating new authorities and incentives, the 1975 bill gave added coherence and meaning to the earlier legislation.

In my view, one of the most important features of that legislation

is that which brings us here this evening: Title XII, directed at famine prevention and freedom from hunger.

While Congressman Paul Findley and I sponsored this provision, its real creators are the people who are represented in this room. It is a provision which is built on your experience and whose future rests on your creativity and abilities.

What it will mean is largely dependent on you.

We in the Congress can help -- but ultimately it will be you who will give our battle against world hunger meaning and significance.

Title XII is intended to create a partnership between the land-grant universities and other institutions with agricultural and fisheries experience and the U.S. government. In creating this new partnership, we mean to capitalize on your experience, in order to solve the growing problems of how to increase world food production in order to keep pace with the continuing world population explosion.

We in the Congress intend to monitor closely the development of this new partnership. Its development will not be easy.

I am already concerned that it has taken the Executive branch so long to create the Board for International Food Resource Development. I understand that most of the members of the Board are now designated. A few of them are here with us tonight -- Mr. Gerald W. Thomas of New Mexico State University and Anson Bertrand of Texas Tech. I congratulate you and your colleagues as you take up this important responsibility.

Our concept of the Board's responsibilities is quite clear. The '75 Act makes them explicit: It is not an advisory board; it is a participatory board.

It shares with AID the responsibility and authority for implementing Title XII. The new mechanisms created in law must begin realistically to tackle a world food crisis which is not simply a cyclical phenomenon.

The relationship between supply and demand has been worsening consistently over the past two decades. It is a fact that the huge surpluses and acreage which had been held out of production in the United States have obscured the fact for at least a decade that the world's food production has been barely keeping pace with its population growth.

The reasons for the world's food predicament can be found on both sides of the supply-demand equation. On the supply side, for the first time in history, the world appears to be facing serious difficulty in increasing all four of the basic agricultural resources: land, water, energy and fertilizer. In addition, the crucial and unpredictable role of the weather has been accentuated by the droughts in the Sahel, the erratic South Asian monsoons, the poor 1972 harvests in the Soviet Union, the unusual drought, flood, frost cycle in the U.S. in 1974 and the most recent drought in Europe.

On the demand side, population growth and rising affluence are rapidly increasing demand and are beginning to threaten the ecological systems of air, water and forest which underpin the process of food production.

A third major factor on the demand side is income distribution.

Staggering unemployment rates which exist in the developing world deprive populations of adequate incomes. Moreover, jobs that are available in the countryside do not produce enough income to provide more than a subsistence diet for the rural poor.

These grim facts frame the challenge for those who believe that Title XII and the new legislation provide a path for future progress.

In view of the United States leadership in world food production and trade, we must establish a clear program to assist 460 million people who now border on starvation.

Whether a Democrat or a Republican is elected President on November 2, I believe that the following components must form an integral whole of American food policy in the next Administration.

First, we must increase food aid. It must be committed early in the year and it must be linked to support of rural development in the recipient countries. It is imperative that our food assistance continue to be separated from the short-term political considerations which have a tendency to force the allocation of food on the basis of military and political security considerations rather than on the basis of the extent of poverty and hunger.

Second, the United States must make a firm commitment to create a world food reserve system. Such a system should be based on the creation of nationally held reserve stocks managed so as to avoid depressing farm prices, and in accordance with internationally agreed upon guidelines.

The third component of this new thrust in American food policy would be a development assistance program with continued major emphasis on rural development and on aiding small farmers and the small farm infrastructure. But I believe that our emphasis on this sector must be funded in amounts greater than in previous years.

The fourth part of this plan should be the final implementation of the International Fund for Agricultural Development, which is a direct outgrowth of the World Food Conference. This fund will make available a new \$1 billion for agricultural production. It represents the first OECD-OPEC effort at combining resources in aid of the world's poor.

The fifth component must be an effort by a new Administration and the Congress to work together to implement many of the programs in international resource reallocation outlined at the Seventh Special Session of the U.N. General Assembly.

I believe that we should not limit ourselves to the approach outlined in September 1975 at the U.N. But it provides a good foundation on which to build a more equitable economic order.

And I must add that any new approach to these complex problems requires a unified American position which is not being sabotaged by one branch of our bureaucracy. I have been appalled and saddened by the fighting between the Departments of State and Treasury on international economic matters. This is a result of weak Presidential leadership. It must stop if we are to protect our own interests.

You who are gathered here today will play an important role in the implementation of this fight against world hunger. The Title XII effort is so necessary for its success. The broad outlines which I have sketched call for many of the new models which you will be discussing at this conference.

In the field of education and training for development, this group has much to offer. If our programs are to be meaningful to the poor, they must involve the poor. This means among other things new labor-intensive approaches and a new emphasis on non-formal education.

New types of institutions are called for, ones which are designed to increase the productivity of the world's poor. Existing institutions must be strengthened and linked to regional and national levels so that knowledge and services are available to all.

There must be a far greater degree of interchange between institutions in the developing world and those in our own country which have knowledge and skills to offer.

As the sponsors of Title XII have made clear, the new institutions must be there, not here, if they are to have maximum benefit.

But you must devise ways to transplant and make relevant what you have learned.

Measured against the enormous magnitude and pressing nature of human needs around the world, what the United States can do in its bilateral assistance program is rather small. But we should not underestimate the effect of our example on the multitude of efforts now underway. If we design and shape a program of excellence, if our efforts find their proper targets, we will not only help, but we will lead the way.

Because you come from outside the bureaucracy, you have a particular opportunity to assess the effectiveness of our bilateral efforts. At the same time, given the mandate of the Board, you have a particular responsibility to engage in the continuous and vigorous examination of your own efforts.

Let me say now that effective monitoring of our foreign assistance program is critically needed. We, who are the strongest believers in economic development, must also be its sternest critics.

I have tried to oversee the workings of the bilateral and multilateral aid programs through the newly created Subcommittee on Foreign Assistance.

But I must be frank with you. We have not been totally successful in our efforts. The Congress has refused to face up to its enormous responsibility. To oversee a multibillion dollar program, we need the

staff and the resources to travel and study. When these resources are provided us, we will do a better job. Now we are really only able to react to the crises and highlight the glaring deficiencies.

I want to remind this audience that continued public support for our development assistance activities depends upon the public's confidence in the government's programs.

There must be demonstratable evidence that these development assistance efforts are working, if they are to receive the continued support of the Congress. The days of large, unstructured and unsupervised foreign aid programs are over.

And, unless you and I are able to convince the American people that our development efforts are indeed reaching those most in need, and have well defined objectives, the programs which many of you help design and participate in will cease to exist.

I want the great American colleges, universities and private agricultural institutions, to create a critical linkage joining the American public, the academic community, our government and the developing nations.

Your institutions, which have contributed much to our own prosperity, now have an expanded opportunity to carry that work to the rest of the world.

Let us not forget that economic development is a vital component of American foreign policy. Yes, it is the morally proper course for our nation to take in the international system. Yes, it is in the democratic tradition to foster greater economic and social justice in the world. But it also must reflect our commitment to the betterment of the global economy -- an economy on which we are truly dependent.

Because economic development efforts are so critical to us, the time has come when they must receive the type of high level attention and public understanding which they merit.

The next Administration -- Democratic or Republican -- must upgrade and coordinate our development assistance programs.

It must seek innovative and imaginative responses to the world's troubled economic system.

It must seek to persuade the American people that the relatively small sacrifices needed on their part will bring great benefits to our nation.

And, finally, a new Administration must understand that the peace and prosperity it seeks can be achieved sooner with genuine economic development than with the endless escalation of armaments.



5. TITLE XII - ROLE OF THE UNIVERSITIES

Gerald W. Thomas  
President  
New Mexico State University  
and  
Member  
Board for International Food and Agricultural Development

I am pleased to be invited to this conference on International Development to speak on the subject "The Role of the Universities" -- particularly as this role is envisioned with the passage of Title XII of the Foreign Assistance Act. It should be obvious to all that, since the Title XII policy board (BIFAD) had not met, the things I say may not be supported by the other members -- or the BIFAD board as a group. I am pleased to serve with Cliff Wharton, President of Michigan State; Orville Bentley, Dean of Agriculture at the University of Illinois; Anson Bertrand, Dean of Agriculture at Texas Tech; Charles Krause, President of Krause Milling Company in Wisconsin; and James O'Conner, a private consultant from Houston, Texas. One board appointment remains open at this time. We will be sworn in on October 18 and hold our first official meeting in Washington, D.C., at that time. Consequently, my presentation will illustrate my aspirations for Title XII -- but may not necessarily reflect BIFAD views.

In spite of the fact that the board has not officially met, a great deal of background work has been done in anticipation of board action. This work has involved the universities, USDA, and AID personnel. Two Ad-Hoc committees have submitted rather comprehensive reports -- one on the role, responsibilities and operational guidelines for the Joint Committee on Country Programs and the other on the role of the Joint Research Committee. Both of these committees are proposed by the legislation under

the overall guidance of BIFAD. In addition to these Ad-Hoc reports, several conferences have been held in various parts of the U.S. and several papers have been prepared relating to the legislation. The National Association of State Universities and Land-Grant Colleges, as might be expected, has been very active in follow-up work relating to Title XII. Dr. Dan Aldrich, Jr., incoming President of the NASULGC, has stated on several occasions that "Title XII is the most significant piece of legislation having the potential to affect the future of Land-Grant institutions that has been passed since the Morrill, Hatch and Smith-Lever Acts of nearly a century ago."

At the various policy meetings on Title XII, these kinds of questions are being discussed:

- (1) What is the most useful format for Title XII programs?
  - (a) one-to-one interinstitutional arrangements?
  - (b) a topical or problem area focus? (soybeans, soils, etc.)
  - (c) a functional focus -- or an examination of delivery systems, linkage, etc.?
- (2) What U.S. organizational ties make the most sense? -- formal consortia, informal arrangements like tropical soils groups?
- (3) What geographic orientation overseas is indicated?
  - (a) single country? region?
  - (b) climate zone? etc.?
- (4) How can we take greatest advantage of existing international programs?
  - (a) International research centers?
  - (b) Regional programs?
  - (c) World Bank activities?
  - (d) FAO and other UN programs?
  - (e) existing AID contracts?

(5) What is the role of USDA? -- Presently has no formal role but is Ad Hoc -- Can this status remain?

I can assure you that the BIFAD will struggle with these questions and will utilize all available expertise in arriving at the answers.

A. The Universities As Partners

Title XII provides, for the first time, "organized" and "continuing" involvement of the U.S. agricultural colleges in foreign assistance policy and process. The legislation emphasizes the role of universities in food production and agricultural development. It provides an opportunity for us to assist foreign universities and governments abroad in strengthening their own research, teaching and extension programs.

AID Administrator Daniel Parker states that "The past three decades have taught us that our commitments to global leadership is not an act of choice, but a recognition of reality . . . . We must recognize that there are no separate futures for the rich and the poor of the world. Materially, as well as morally, our destinies are inextricably intertwined." Parker further stated "Title XII is certainly landmark legislation which will challenge the best in all of us."

The universities have had, over the years, contractual arrangements with AID for specific agricultural development projects. For example, NMSU has had an AID contract for 10 years to assist Paraguay to increase their animal production. Working with the University of Asuncion, much progress has been made -- but, the contract will terminate next year -- with no provision for continuing ties. Hopefully, Title XII will assure continuity in establishing "long-term" relationships. However, there are unanswered questions here also. Will the so-called graduate countries -- the countries more advanced in agricultural development -- be authorized

to participate in Title XII? Who will define qualified countries and how will they be defined? Is this a State Department responsibility? Can we remove the famine prevention thrust of Title XII from the national defense responsibilities of the Department of State?

Much of the debate since the passage of the new Title, has centered around the "power" of the new BIFAD board. It appears that AID has one concept -- the universities another. In the preliminary discussions, Congress again became concerned and re-emphasized that the universities are partners in this enterprise. The board goes beyond an "advisory" capacity role to AID. Most of us will agree that the traditional approaches to international agricultural development have been found to be inadequate and that there is some congressional disenchantment. The universities have long sought for more involvement in the development process -- and some mechanism for long-term ties with universities abroad. As the saying goes, "If we don't change our direction, we are apt to wind up where we are headed."

Indeed, the universities now have the opportunity they have long sought. However, with this opportunity lies also much responsibility. You may be assured that Congress will monitor the universities as well as AID. To my knowledge, no American university has adequately faced up to the problem of rewards for faculty to participate internationally. Graduate faculties do not respond favorably to foreign experience. There are tenure and retirement considerations. Also, to my knowledge, no State Legislature has recognized that universities within their state have an international responsibility. There are few rewards for the university at the state level -- in appropriations -- to become active in international assistance.

B. American Universities Have International Respect

There is no doubt that there is a high level of respect for American agricultural colleges in the developing countries. Our unique approaches to agricultural teaching, research and extension have been effective. American agriculture is the envy of a predominantly hungry world and the role of the universities is widely recognized. While each country individually, and all nations collectively, must face the challenge to feed and clothe the people, the U.S. agricultural industry stands as a unique example of unprecedented progress. Perhaps, as we celebrate our bicentennial, we should carry forward the theme "Agriculture has made America possible," -- and the Land-Grant type colleges have had a significant role in "making modern agriculture possible."

Much of the testimony leading to the passage of Title XII focused on the unique characteristics of the American agricultural colleges. Contrary to the patterns established in many European countries, the Land-Grant colleges have developed a leadership responsibility for these essential activities -- teaching, research and public service. This pattern of development is uniquely American and has been very effective in fully utilizing manpower and facilities. In many cases, faculty members may have joint responsibilities in their specialized fields of resident instruction, research, and continuing education.

It is important to recognize, as we implement Title XII, that the U.S. approach to teaching, agricultural research, and extension is different. While we believe our system is good -- is effective -- we may not be able to change substantially the patterns in the developing countries. What are these differences?

In the first place, most developing countries have followed the traditional European system. Access to higher education has been limited -- more exclusive -- than the "peoples college" approach specified by our Morrill Act. Subject matter has tended to be more basic -- less emphasis on applied or "hybrid" degree programs. Research and extension are usually handled by Federal Agencies or Ministries of Agriculture rather than by the universities. These are established bureaucracies. As a result, students may not get direct exposure to applied scientists and communication problems tend to develop among teachers, researchers and extension specialists. The problem of communication and coordination is, indeed, a serious drawback to progress in food production.

Another important subject that has been discussed at length in relation to Title XII concerns the question, "What universities are qualified to participate in this new thrust for international agricultural development?" Although the BIFAD board and the two committees will wrestle further with this question, I feel that the groundwork has been properly laid by Congress. Non Land-Grant colleges with major agricultural teaching, research and continuing education programs are eligible. As you know, Dean Bertrand of Texas Tech fills that slot on BIFAD as intended by the legislation. Most of the board members have received letters from the Presidents of the 1890 Land-Grant colleges, which are predominantly black. While I cannot speak for the board, it is my feeling that the 1890 universities will be actively involved in the program. My philosophy -- perhaps biased by my background at Texas A&M, Texas Tech, and NMSU -- is that the problem facing us is so big that a maximum effort will be required by many universities. I would favor maximum involvement rather than an "exclusive"

approach. However, I realize that in order to get maximum involvement on the part of universities and individual scientists, some new mechanisms may evolve. For example, more consortia or regional groupings of universities may be necessary. Time and experience will be necessary to accomplish this cooperation and participation.

C. International Cooperation

In addition to the issue of cooperation among U.S. agricultural colleges on the mission of Title XII, there is another even more difficult level of involvement that must be addressed. For example, in research, the generic term "Collaborative Research Support" is used under Section 298(d), (3) of Title XII. This is research jointly supported by AID and collaborating institutions. It is program oriented and may involve U.S. universities, USDA, the International Agricultural Research Centers, developing country universities, and perhaps private research foundations. This mission-oriented approach is an essential part of Title XII. The Ad-Hoc study committees have already made some recommendations on the possible structure and functions of the "Collaborative Research Support Program."

Title XII also carries forward and adds emphasis to three other research efforts:

- (1) Strengthening the research capabilities in the developing countries
- (2) Support for International Agricultural Research Centers
- (3) Centrally funded contract research on specific problem areas important to the developing countries.

In all three of these last research thrusts, the American universities

will be involved. As we strengthen the research thrust, there is a concern about over-emphasis on research "removed from the college campus." Keep in mind that one of the major strengths of the U.S. system has been the fact that most of the agricultural research has been in the college setting where students could benefit from exposure to research and where extension specialists are also close to the teaching and research mission. Thus, while I readily admit that the "Green Revolution" resulted in concerted efforts at the regional research centers, the expertise and background research for these centers still came from the university environment.

D. Focus on the Farmer

It was my privilege to attend the World Food Conference in Rome. At this conference, many, many country delegates placed the blame for world food problems on the U.S. and other "developed" countries -- on our luxurious living habits and our domination of world economics and politics. We were not often praised for our "system" of education or our progress in agriculture. We must keep this point in mind as we search for "partners" abroad. There is much sympathy in the developing countries for the Chinese and Russian concepts of political and economic reform. Perhaps Title XII will help return attention to the American perspective -- through education and not through forceful compliance.

Secretary of Agriculture Earl Butz in Rome and since the Food Conference has repeatedly stated that governments, bureaucracies, and even food conferences do not produce food, "only farmers produce food, and they must have the incentive to produce." Title XII does focus on the role of the individual farmer -- particularly the small farmer. The support for extension-type services to carry information to these farmers is a strong thrust in the legislation.

Cooperation in extension education -- development of collaborative techniques in extension -- is perhaps more difficult than cooperation in research. Such cooperation will require dedication on the part of people -- and a desirable political environment.

As we shake down the thrust of Title XII, I must express two fears that I hold foremost:

- (1) Fear of too early involvement or too much involvement of "legal" types -- narrow "legal" interpretations of the legislation as we develop procedures and programs.
- (2) Fear of building new, large and inflexible bureaucracies -- as opposed to utilization of existing organizations and structures -- new bureaucracies both at home and abroad.

#### E. Title XII and the Long-term Solution

As most of you know, there are many barriers to progress in World Food production. Some of these barriers are political, some are economic, some are social and some relate to culture, religion, or tradition. Indeed, the "long-term" limitations may be ecological -- environmental. The real question by the year 2020 may not be "Can the world feed itself?" but rather, "Can the world afford to feed itself?" In other words, will the environment withstand the pressure of more and more people and the accompanying technological changes required to produce and deliver the food? There are no simple solutions to the hunger problem. There is even danger in a little knowledge -- in an incomplete analysis -- in an easy solution to a very complex issue. The easy way out may be to say -- let's sacrifice a little more today (not too much mind you!), let's increase our direct food aid to the lesser developed countries, let's send in medical supplies to save

the children. In other words, let's help the hungry today. Man, even religious man, thinks and plans for today -- perhaps in some cases tomorrow -- but, seldom, if ever, does mankind consider the day after tomorrow.

What about the year 2000 -- the year 5000 -- and beyond? It is easier to fall back on the challenge to feed our neighbors today, than to face the possibility, that in so doing, we may make life miserable -- or impossible -- for some future generation. It is apparent that, at the heart of the world food problem, lies the population explosion. Whether we look at energy resources, land-use, water, chemicals or other requirements for food production, all nations must become more concerned about irresponsible population growth.

Only through adequate research and education can we alert peoples and nations to the alternatives for the long-range solution. I am pleased that Title XII -- through emphasis on strengthening institutions within the developing countries -- through emphasis on the role of the universities in education and research -- through emphasis on true partnerships and cooperative approaches -- Title XII does in fact lay the groundwork for long-term solutions. The task is one that will indeed challenge the best in all of us.

## 6. TITLE XII IMPLEMENTATION

Congressman Paul Findley

I came here tonight for one reason, because I believe in the Title XII Famine Prevention Program and I want to sing its praises and call for action on that front every chance I get. Even though this is a legislative day, when both Congressman Wampler and I could be in Washington dealing with legislation before the House, and even though its campaign time, when I could be elsewhere, I want you to know I am gratified to have the invitation to be here tonight. Especially so, because one of the key men in my life, whom I'd never met before, is here -- one of the seven people who will constitute the Board for International Food and Agricultural Development, the key element in the Title XII Program.

I am going to proceed tonight on the assumption that you are already believers, that you have read the language of Title XII, that you are convinced it has merit, that you are convinced it makes sense.

Tonight is a very special opportunity because I know gathered in this room are key people from all over the United States, as well as from several foreign countries, who have the connections, the prestige, the position, the expertise to be very influential in the development of the Title XII Program. There is a moment that each of us has, I am sure, in his lifetime when you feel it is sort of a watershed event and that is my position here tonight.

In my sixteen years in Congress, my name has been identified with two things that I think hold great promise for the future. One is the development of the Lincoln home area in Springfield, Illinois, in my district of the state that existed there when the Lincoln family lived there. We

created, or we are in the process of creating, in a sense, a little Williamsburg, and I think when we observe our tricentennial as a nation there will be millions of people who will still be streaming through that center and will be inspired by the opportunity to sort of live the atmosphere that Abraham Lincoln lived when he was elected as President.

The other legislation to which I attach high hopes for the future is the Famine Prevention Program, Title XII. The promise for public benefit rising from this program is very different from that of the Lincoln home development but no less penetrating, universal, and humanitarian. I am convinced that the Title XII Program can herald a golden new era in world food production; it has that possibility, it has that potential. For the first time this legislation gives authority and resources on a long-term basis to the U.S. Agricultural Universities for the purpose of improving the systems for educating farmers in foreign countries. When the tricentennial rolls around for our republic, I believe it is possible that every nation on earth on that occasion will have had by then at least 80 to 90 years of experience in the systematic, organized education of their farmers. Today not many countries can say that they have had any real experience at all. The United States set the pace in this realm about 100 years ago with the Morrill Act that set in motion great universities like this one here in Blacksburg, like the one at Urbana-Champaign, Illinois.

In making an estimate of what can be the case in our tricentennial year, I am assuming that a lot of things will fall in place. But they can fall in place. I really can think of no good, adequate reason why in the course of the next 10 years every nation in the developing realm of this earth cannot have the beginnings, at least, of a systematic program

for the education of farmers. Expertise in farmer education is one of our nation's greatest resources. Certainly, in terms of the international realm, it is an underutilized resource.

When I muse over the possibilities of this program, I am reminded of the great ringing words that Abraham Lincoln sent to the Congress in December of 1864. He said, of course speaking of a different challenge, but nevertheless words that seem so appropriate today: "The way is plain, peaceful, generous, just, a way which, if followed, the world will forever applaud and God must forever bless," and I really believe that about the Famine Prevention Program. It meets those tests, it is peaceful, it is generous, it is just, and it certainly holds promise for great humanitarian advance.

The goals of the program are noble goals that echo down through history: an end to famine, a goal of mankind all through the centuries; the improvement of nutrition -- those are the primary goals. But there are other goals too. This is not just to be a program in which our universities will extend their blessings to other areas; it is also a system in which we will get benefit ourselves. It will help our economy; it will help our educational system.

I asked one of my good friends at the University of Illinois to muse over the possible ways in which Title XII might influence U.S. agriculture and he set down eight of them, which I'll run over very briefly. He said first of all U.S. scientists will work in foreign countries and foreign scientists will come to this country for study and research, and that is certainly true. All agriculture sciences will gain through this process by taking on an increased international dimension. U.S. scientists will become more fully informed of developments in their respective fields in

foreign countries. I can see it now, the International Association of Famine Prevention Scientists, another organization, another organization to have conventions and to issue periodicals. That is great; I am sure it will happen.

Work by U.S. scientists in foreign countries will inevitably lead to the discovery of new plant materials for development of new varieties and strains of crops superior to the varieties we now use. Animal scientists will undoubtedly gain new knowledge related to the environmental effects upon growth and development of livestock and poultry. They will gain insights into genetics of foreign livestock and poultry that could be useful in U.S. genetics and nutritional research. A more complete understanding of the economic systems, the market practices, the food tastes and preferences, and opportunities and limitations for production in the developing countries should enable agriculture economists, working under Title XII auspices, to assist in building larger export markets for U.S. products in those countries. U.S. food scientists developing low-cost, nutritious food products for the food deficit countries will gain in knowledge that will be useful not only to the developing countries but to the United States and every other nation which has the continuing demand for farm products of high quality but low cost.

Insects and plant diseases take a heavy toal in the production of food crops. Scientists, by this Title XII Program, will gain new insight into the development of control methods through observation and study in other countries.

Water becomes a limiting factor in crop production in this country and elsewhere. I am sure a lot of you have been to Israel and seen the

marvelous techniques they have used to make every possible use of their water and food production in that region. Scientific observation-research in these foreign countries will provide opportunities for the improvement of water utilization by crops, technology to carry crops through dry periods, improved and more efficient irrigation systems.

Finally, let me mention that soybeans had long been used as a food crop in China before being imported into the U.S. at the end of the 20th century. In the last 50 years these beans have become a major U.S. crop, supplying both domestic and export demands. Who can say what unknown plant growing somewhere in the world today will become the wonder commodity tomorrow of the 21st century, perhaps supplying food nutrients, perhaps supplying energy sources, too. It may be that we will in the future become producers of energy as well as food.

In any event, these points illustrate the dramatic possibilities for U.S. advantage as a result of the Title XII Program. But I hasten to say that the primary goal of Title XII is not to improve the economic position of the United States; it is not to bring advantage to U.S. agriculture in the form of benefits from research -- even though I am sure these will come. It is not even to establish better agricultural research worldwide.

It troubles me very much that AID in announcing the formation of the Title XII Board just a short time ago laid such heavy stress on research as a primary element in the Title XII Program. I do not view it that way at all, neither do the colleagues on both sides of the political aisles who helped put this together, and, I say with assurance, neither did the people from the land-grant universities who helped every step of the way

beginning more than a year ago to make it possible. It almost seems as if the State Department thinks automatically of research when it thinks of agriculture.

In my view the primary goal of the Title XII Program is to establish better systems of educating farmers in foreign countries. We could say, I think with accuracy, that we have the products of research literally running out of our ears in some parts of the world. But we don't have a delivery system for getting that information into useful form to the people working out in the fields, with the exception of a very few countries of which the United States is one. Here we have worked on research, but we have also worked on improving the delivery system for the information.

My view of the Title XII Program is that it is essentially an educational program, a program which will use the great genius of our own system for imparting knowledge directly to people engaged in agriculture, which will use that expertise to inspire and, I hope, direct the leadership of other countries to design and adapt to their own local needs similar systems of education. I was appalled to learn that in the course of my research for this bill that on an average there is only about one specialist in agriculture for every 10,000 farmers in the developing countries. That one so-called specialist probably is not much of a specialist at all; and that one so-called specialist has little, if any, in-service training. There is nothing in the developing world that compares with the great information delivery system that we have here in this country, and I think only a glance at the record of the past century under extension should convince any doubter that our system has been adaptable to changing times and has been a marvelous investment for the American taxpayer.

What is the record of Title XII up to now? The Famine Prevention Program became law in record time. Thanks to the leadership of the Land-Grant Association and individuals, several of whom are in the room tonight, this idea was put into final form a year ago January, was introduced with about 100 co-sponsors in the Congress, in the House, and quite a few in the Senate. It became law when President Ford ten months later put his name on the bill. The whole thing from beginning to end was accomplished in 10 months. I was elated, everything seemed to fall in place just right, and I was convinced from that that my colleagues, the land-grant university communities, and the executive branch recognized the urgency of moving forward promptly with this program as the primary U.S. response to the world food challenge.

Well, the bill got the President's signature in December of last year and eight months later the Board was finally appointed. I cannot account for that great gap in time. It was not needed. There is no justification for that gap, but it occurred. Well, that brought us up to late July of this year. Here it is late September and the Board has not even had its first meeting. That disturbs me. It makes me wonder what's wrong. Why haven't these Board members who have been given this exciting new challenge been able to get together for that organizational meeting? It is not going to be held in September, it will be held October 18-20. I am glad a date has finally been fixed, but it is almost a year after the program was signed into law and it raises questions in my mind, as I said, about the delay.

I understand that a September meeting was sought of the Board, but it was scratched because the date was inconvenient for several members

of the Board. That really bothers me. I had hoped that no one would take an assignment on this Board who was not willing to give his topmost priority to the work of the Board from that day forward. I hope that somehow the Board can be inspired to give it the personal commitment that will prevent any delays of that nature in the future.

I am looking forward to a meeting with the Board during that October period and what I am saying to you tonight I am rehearsing for that Board meeting, because I want to lay it on as heavy as I can. I will tell the Board that these seven people have before them a rare opportunity, an opportunity to have global impact. How many people can say that they have been in a position so that their efforts have global impact? These people can say that.

They also have an unprecedented opportunity. Never before has a university community been brought together in a format, a legislative format which enables it to stand toe-to-toe with the top of the executive branch bureaucracy. There is no precedent for it to my knowledge. Well, this group has that opportunity.

This group also has the opportunity to draw upon the great practical success story of the American land-grant system and make it available to a hungry world. I think it demands the highest priority of those who serve on the Board. I am going to tell them that if they don't feel they can give it that highest priority, if they don't feel that they can transfer or delegate their other responsibilities on a temporary basis to other people, then I think they owe it to the President of the United States and to the Congress and to the hungry people of the world to resign from the board and let someone take their place on the Board who will give it

that topmost priority. I think it is that important.

The Board ought to be on an intensive schedule beginning in late October that will continue, perhaps with very little interruption, for weeks. I do not know whether any members of the Board have that in mind or not, but I have tried to get the point across to them that these initial weeks are critical weeks for Title XII. These are the weeks in which all of the regulations, all of the procedures will be set in place. AID has great skill in getting its own way in the operation of its own programs overseas. The Board should not underestimate the resourcefulness of AID. These are great people. They do a good job for their own interest, but their own interest is not to make that Board a powerful instrument for land-grant education abroad. The Board members should expect that half of their time beginning in late October for the next six months will, necessarily, be occupied with the work of the Board. They should somehow muster up a personal commitment that is needed to make this program work.

This is not intended to be an advisory board or a ceremonial board; it is to be a working board, a drafting board, a development board. It has a great responsibility. The Congress chose to wed AID and the Board in a unique relationship. The Board is to share responsibilities in decision making in implementing the entire program from the very beginning.

I have heard lots about the Sears Roebuck catalogue of regulations under which universities have been required to operate in carrying out these two year foreign contracts. Believe me, AID has been working since last December on its proposals for a new Sears Roebuck catalogue of regulations. And the Board has not even met to be organized. I am sure AID

has also made its own recommendations as to the composition of the two major committees which under the law are supposed to be the creatures of the Board, not the creatures of AID.

You can see the peril of inaction, of the lack of prior commitment on the part of the Board members, when you recognize the size and resourcefulness of AID and their natural desire to see that this program is carried out the way they want it carried out. The way they want it carried out is the way the programs have been carried out by AID in the past. Congress has done its best to give the university community the legislation with which to work. There is no doubt but that the law itself plainly gives the Board the authority. But passing a law and making a law function are often two different things. Well, you can believe this, that AID is working full-time and has been for months to see that this whole thing is organized the way AID wants it.

Now I know that it is a natural impulse upon the part of AID to relegate the Board to the sidelines. Any administrator wants to have a clear line of authority under his jurisdiction, and Dan Parker is no exception. He is a great guy. I am sure he wants famine prevention to work, but he is only one, even though at the top, he is only one, and those who do the day-by-day work are the ones who have ground out in the past this Sears Roebuck catalogue of regulations which has hamstrung the university community in the past.

I can say with authority that every step of the legislative path AID did its best to see to it that the Board was not given legislative authority, and they did a very skillful job but we won, and we had a lot of help. Senator Humphrey did a great job using his great influence in

the Senate as well as with the executive branch to make sure the legislative record was clear that this Board was to have authority. That is why I feel that the Board must give unremitting attention from the very first day and it must stick with its job.

What I fear is that we are going to have a three day program--its going to be late October, Thanksgiving Day is right around the corner, and then Christmas--they may recess until January and at that time consider what interim recommendations AID has come up with. To me that would be disaster because at that point AID will be in a position to come to the Congress and make a request for funding of the activities to be carried out under this Title XII authority. And it will be too late then for the Board really to have effect in redirecting all of the procedures and regulations that are so essential.

The Board has to be in session in order to make sure that it has a staff which will be responsible to the Board and not to AID. It has to be there to make sure that the procedures for carrying out contracts will establish the right kind of in-country relationship for the university community. I know that has been a big problem in the past. It has to be in place to make sure that the procedures for the formulation of contracts will take into account the needs and desires and expertise of the university community. It has to be in place on the very first day on a continuing basis to make sure that the regulations preserve the authority of the Board in the vital realm of monitoring and oversight.

I could read the language from the bill, but I am sure you have all read it. The language is plain, the Board is to have co-equal authority in all realms, an unprecedented grant of authority to a Board separate

from the executive branch bureaucracy.

I also have a few words for you as members of the university community. I look to you to help me keep the heat on the Board members. I think it is a vital responsibility. I can imagine that the Dean of a College of Agriculture, the President of the State Land-Grant University has a thousand things on his mind just as Congressman Wampler and I have on Capitol Hill. Many of those are of very pressing nature. They deal with bread and butter, the security of his position, the future of his university. But I am sure also that those leaders have on their staff very competent people who can shoulder this very same responsibility for a period of four to six months and thus leave their chief of staff free to devote his total concentrated attention to this vital task.

Secondly, the university community can very properly get ready to participate in Title XII--and some preparation is in order. I think it is high time that you think about special courses for the training of people, young people who will be involved in international land-grant education. I have confidence in this program. If you will keep the heat on the Board and the Board does its job, Title XII is going to work. It is going to result in a lot of great contracts for the establishment of better education of farmers in these hungry nations. To carry out the contract you are going to have to have qualified people and obviously you cannot drain away all the talent that is now serving the domestic interest of your constituency. You have to expand your base and you have to start with an expanded curriculum. I wonder how many universities now have courses already structured to train people for international land-grant education; not too many I would say. I think it is

essential that you take a look at your physical plant and to make plans, at least on a contingency basis, for the expansion of activities which necessarily will be a part of your life in the next few years.

I hope you will keep asking for progress reports from the Board. In fact, I am not sure who is in charge of the conference here, but I would like to pass on a suggestion that before you adjourn this conference on Title XII you schedule the next conference and make sure that at the next conference the seven members of the Board are on hand to give you a detailed report and take on questions. I hope you will not put that conference off more than six months from tonight.

We have to face the possibility that Title XII will fall flat on its face. I believe with all my heart that success or failure of Title XII rests in the hands of the seven people on that Board. It may prove to be another boondogle, a waste of money. We may have spun our wheels with no lasting effects. But this need not be the case. This can be a great victory for humanity. I really believe that within our lifetime the implementation of Title XII can literally banish the specter of famine from our world and within a few years after that can reduce malnutrition everywhere.

The U.S. agricultural education plant has the horsepower to make it work -- sixty-nine great land-grant universities, other institutions in the nation that have great resources to apply to this task, millions of graduates of land-grant universities who know what the land-grant concept is all about, who become a constituency for international land-grant education. Every farm organization with which I have had any communication on this subject is enthusiastic. Can you imagine the farm organizations

enthusiastic about a foreign aid program? But they are enthusiastic because they know land-grant education pays dividends--it works. Therefore they have the confidence that the people that have made land-grant education work in this country can also help make it work in other countries too.

So lets schedule that conference. Not later than six months from tonight. I want to be there to hear that progress report.

## 7. TITLE XII IMPLEMENTATION

Daniel Parker  
Administrator  
Agency for International Development  
U.S. Department of State

Today I would like to discuss some background and personal impressions about the significance and potential of Title XII, after which I would appreciate your perceptions and comments. Let me begin by saying that I share the feeling of many of you that Title XII is well-drawn legislation in that it not only mandates a quantum jump in the effectiveness of the U.S. agricultural university involvement in the world food and nutrition arena, but also provides a realistic framework within which we can carry out that mandate.

In considering the significance of the new Title, four things come to mind: First, it formally recognizes the legitimacy of the role of the state land-grant institutions as one of the key global resources in addressing the problem of how to feed and nourish the world. Second, it recognizes both the essentiality of such resources to global development and the need for A.I.D. to involve them on a continuous and long-term basis. Third, it recognizes that it is appropriate and important for universities to participate not only in implementing technical assistance, but also in setting policy, defining problems, and carrying out the planning, design and evaluation of university activities. Finally, it recognizes that American university resources are most effectively used on world development problems when their involvement is grounded in our universities' own teaching, research and public service responsibilities.

These characteristics of Title XII imply a new and different relationship

between A.I.D. and the universities which stresses a spirit of partnership among peers, each with complementary skills, resources and mutually compatible goals. The Title XII Board and the subordinate mechanisms anticipated in the legislation are designed to translate this spirit into reality by helping to integrate university resources within A.I.D.'s processes, and provide an overview of the activities in which the resources are engaged.

Moreover, to the extent that the universities accept this partnership with A.I.D., they will become involved in the larger context in which foreign assistance is conducted. In so doing, it is important to understand that although foreign aid is an expression of the American people's sense of justice and compassion, it also plays an important role in the continuing effort to achieve an enduring world peace and economic growth from which we as well as the developing countries benefit. Thus, it becomes an important component of our foreign policy and national interest.

Title XII is a well-timed merger of initiatives from both the Administration and the Congress. The Administration initiative began in A.I.D. early in 1974 as a Dimension of Secretary Kissinger's pledge to the Rome Conference on World Food to triple the United States contribution to the world food and nutrition research effort by 1980. To achieve this would require a new, imaginative and innovative approach. Because of our recognition of the achievements of the United States land-grant university system, we began discussions with the land-grant colleges to explore possibilities of drawing on the long collaboration between the United States Department of Agriculture and state-supported research institutions. These discussions revealed a need for a parallel commitment and mandate from Congress for a new collaborative research support program which would complement our

ongoing support for the various international agricultural research centers, as well as A.I.D.'s own contract research program. Thus a request to Congress was included in the President's submission as Title XII of the Foreign Assistance Act.

The Congressional initiative came in the form of the Findley Bill which stressed the need for more systematic and longer-term international application of the resources of land-grant-type agricultural institutions. Its focus was on how to strengthen developing country capabilities in the teaching, research and extension functions related to problems of food production, distribution and consumption in agriculturally underdeveloped nations.

A.I.D., of course, has been engaged in these activities in one form or another for 25 years. Since 1951, 47 land-grant-type institutions have been established or strengthened with the assistance of American land-grant universities working in 32 countries under A.I.D. contracts. But it was the Findley Bill which proposed that universities participate, through a Board mechanism, more generically in formulating A.I.D. policies on food and nutrition and in determining how best to utilize the resources of American land-grant-type institutions. Further, it proposed establishment of procedures and the definition of criteria for project proposal review, selection, monitoring and evaluation in our bilateral technical assistance activities.

The National Association of State Universities and Land Grant Colleges played a major role in helping us judge the merits of these separate initiatives and eventually merge them. A special NASULGC Steering Committee and two Work Groups collaborated with A.I.D., USDA and Congressional staff

in drafting an expanded Title XII as a vehicle for addressing the full range of global food problems in an integrated fashion.

A blending of the interdependent A.I.D. research initiative and country-focused Findley Bill initiative made good sense for two reasons: First, even established institutions of agricultural ministries and universities require a constant supply of new and appropriate knowledge; and second, the generation of new knowledge is useless to a country if the infrastructure or local program activity is inadequate to absorb and disseminate it to those who need it the most. Bringing these two elements together efficiently will be a major concern of the Title XII Board.

The significance of the two thrusts is further reflected in the legislation's suggestion that the Board may wish to create at least two subordinate units -- a Joint Research Committee to deal with the centrally-programmed, problem-oriented collaborative research program and a Joint Committee on Country Programs to deal with country-specific processes, institutions and skills needed to continually generate and apply this knowledge for national development.

I would like to turn now for a moment to the way in which universities relate to developing countries and how that relation becomes affected by the development process itself. Many developing countries are approaching the limits of their capacity to absorb and effectively utilize additional land-grant type institutions. It has become increasingly apparent that every developing country cannot, and should not, attempt to develop the institutional capability to do the whole job. Thus the situation calls for a realignment of the traditional relationship between American universities and developing country institutions.

In building basic university capabilities over the past 25 years we have utilized a "horizontal" approach, so to speak, where pairs of U.S. and developing-country universities address the whole range of agricultural needs in a given country. However, for collaborative research we need something different - a "vertical" approach through which, normally, several U.S. universities and several disciplines would work in one problem-area with institutions in several developing countries, as well as with appropriate international centers, on the basis of their own competencies, interests and needs.

The "horizontal" effort is best suited for building basic institutional capabilities and development programs within a particular country. The "vertical" approach is necessary to put these resources to work most effectively on solving food and nutrition problems for several countries, or even a world-wide basis.

In most developing countries, the need for simultaneous effort of both types exists, and the two approaches can be mutually supportive. In most cases, this will require LDC institutions being tied into the "vertical" world-wide problem-solving systems.

The key to the effectiveness of these two dimensions is how they are brought together. Our toughest Title XII problem, then, involves how to properly relate world-wide, problem-focused knowledge-creation and technology-development processes on the one hand, to individual country problems and institutional resources on the other.

Of course, research is neither complete nor useful for general dissemination until it has been tested and modified in actual farming situations or in other practical ways. In some developing-country

institutions, researchers will have to concentrate on extension-type programs to carry research findings out, at least, to select groups of farmers. In other cases, there will be ready access to fairly well-developed institutions for executing such extension and farmer-trial activities. In countries with little or no institutional research capability or professional human resources, efforts must be made to develop them as quickly as possible, either through sister-institutional or other arrangements.

New organizational patterns of collaboration will also have to be developed where there is longer-term need for strengthened infrastructure throughout the whole complex of agricultural ministry, educational and agribusiness interests. Traditional sister-university arrangements will be phasing out as their goals are achieved and as the developing-country institutions seek out a broader base of contact with the American educational community. Moreover, the "vertical" approach will be organized around world-wide problems of food and nutrition, and therefore will not be directly applicable in some instances to country-specific infrastructure needs.

Some ground has already been broken for new A.I.D. university relationships. For example, some of you will recall that in 1970 A.I.D. and the land grant universities jointly produced a report describing the Institutional Development agreement. It is a model sister-university contract based on collaboration between American and host-country institutions at all stages of a project, from planning and design through review and evaluation. It places the primary responsibility for project inputs on the shoulders of the participants, while A.I.D. concentrates on defining objectives, determining progress, and evaluating outputs. These concepts

have since been adapted for a wider range of technical assistance activities and are now incorporated into our regulations for technical assistance contracts with universities as "the Collaborative Assistance Method." It is totally consonant with the spirit of Title XII, we believe, and will be an essential instrument for implementing many of the activities envisioned under the Title.

To put it another way, one of the primary tasks of the Title XII Board is to insure that the marriage of the "horizontal" and "vertical" approaches is consummated. In doing this, it is important to remember that for every U.S. dollar that goes into a university technical assistance contract overseas the host country normally puts up to several times that amount into the activity based on its own internal priorities. This means that many projects with strong potential just do not get programmed because there are not enough host-country resources to provide this support and to sustain them all when external assistance is terminated. These factors, then, in addition to the merits of a particular project, go into what we call the country programming process.

The research component, on the other hand, when organized "vertically" on a subject-matter, problem-solving basis, involves pulling together critical masses of scientific and technological expertise from both developed and less-developed countries in problem-oriented teams and networks. Countries can make decisions on their degree of participation without materially affecting the basic activity. These activities then emerge through what we call a central programming process which is outside of -- but coordinated with -- the country programming process.

Still other factors influence the nature of both country and centrally

programmed activities. For example, A.I.D. has Congressional mandates to focus its efforts on the small farmers, to involve women more completely in the development process, and to encourage greater participation of minorities and minority institutions in overall development plans.

The Title XII Board must help achieve the most effective arrangements design for the many types of projects, while insuring an appropriate balance and interrelationship between these two approaches. This will require its total access to, and effective interaction with, both the horizontal and vertical elements. The Title XII legislation promotes such access in prescribing that the Board play a genuine, interactive, participatory role in all elements of A.I.D.'s processes. Such a role, as you know, is unique in the history of A.I.D. relations with outside groups. Of course, the Board must be classified as "advisory" since, as A.I.D. Administrator, I must accept ultimate responsibility for the agency's activities. (If it were non-advisory, it would have to be classified as "operational" and that would require its accountability for funds spent, conflict-of-interest constraints, prohibition of other employment by its members, and other considerations inconsistent with the universities' desire for a representational role for the Board.) But clearly the Title XII legislation requires - and I welcome - the extension participation and involvement of the Board and its subordinate units with the very tissue of A.I.D.

To meet these requirements, the legislation suggests that the Board create two Joint Committees. Both Ad Hoc Work Groups, described earlier, have prepared reports to be submitted for the Board's consideration. Their reports define their respective areas of concern; recommend the creation of a Joint Research Committee and a Joint Committee on Country Programs,

and spell out suggested roles, functions, responsibility and staff requirements for each.

The Report of the Work Group on Research describes a proposed Collaborative Research Support Program which is designed to encourage three things: First, the adjustment of domestic research programs to take advantage of opportunities for international cooperation for mutual American-LDC benefit; Second, increased emphasis on non-AID funded-domestic research in those problem areas selected for collaborative research under the program; and Third, mutually advantageous cooperative arrangements with agricultural institutions and scientists working on selected problems in developing nations. The report provides guidelines on the kinds of activities appropriate for funding under the proposed program grants. It also suggests some characteristics which would be appropriate for the administrative entity which will be required to manage the network of resource institutions envisioned in the program and identifies some steps that could be taken to get the program underway.

The report of the Work Group on Country Programs recommends that the proposed Joint Committee on Country Programs:

1. Determine and elaborate the nature of development program tasks;
2. Seek solutions to critical rural development problems in LDCs;
3. Formulate agricultural development strategy and programs;
4. Help build capacities for LDC teaching, research and extension;
5. Make greater and more effective contributions to world agricultural development; and
6. Eliminate adverse impacts on American universities' other ongoing programs resulting from involvement in bilateral technical assistance.

To meet these goals, the report suggests that the Joint Committee should review, appraise and advise the Board and A.I.D. on policies, strategies, programs, processes and procedures related to opportunities for appropriate U.S. universities' participation, and on the process of matching university resources to those opportunities. The report also recommends that each participating institution name a Title XII Officer, and that a survey of institutional resources appropriate for Title XII be initiated.

Title XII legislation also addresses the problems of assuring sufficient leadtime for planning and mobilization of these university resources and assuring the continuity required to sustain critical masses of research expertise over a long term. In order to introduce greater continuity on the programming side, the legislation specifically requires an annual report covering not only Title XII activities of the preceding year, but a five-year projection of programs and activities. And to further ensure the Board's participation in Title XII, the legislation requires that the Board be consulted in the preparation of the annual report, with the option of including its own separate report on any aspect of programs conducted or proposed.

Now let me turn to ways in which it appears Title XII may help solve problems of professional obsolescence and career patterns. Of course, a major advantage of organizing collaboration between American and LDC institutions on a problem or subject basis lies in the opportunities it presents for the development of true professional careers incorporating international as well as U.S. domestic service. But throughout the history of U.S. university work abroad it has been difficult to develop anything approaching

a career service because of two major obstacles. The first is that building universities abroad and advising governments, university administrators and mature academics has never provided much opportunity for young people completing or having just completed their graduate training. Experienced personnel are needed to draft legislation, negotiate with governments and university officials, select advanced training opportunities for professionals, and help develop curricula and research programs for already advanced professionals. Above all, they must be experts on the proper organization and function of appropriate agricultural institutions. Therefore, several years of prior experience are requisite to employment in such an advisory undertaking, which usually comes too late to guide the professional in selecting his own training program.

As a result, few U.S. professors could in good conscience advise their graduate students to select careers in the international field, knowing that regardless of what their long-range employment opportunities might be and how well trained they were, students must expect to wait years before finding professional overseas employment.

The second major obstacle to career development has been the obsolescence of the American professional who has served several years overseas advising institutions and governments on institutional development. There is very little, if any, career opportunity for that kind of work in the United States. Few land grant universities solicit advice on their own organizational or development problems. Improvements are expected to come from within, through the normal exercise of administrative and faculty processes. So the typical American professor going overseas to participate in an institution-building job has risked both retrogression in his

own field and failure to keep up with his peers who remain at home. Even more sad is the fact that he acquires very valuable experience and insight overseas for which there is usually no ready market when he returns. Overseas work thus has been mostly an interlude, a hiatus, rather than an integral, fruitful portion of the professional careers of some of the best U.S. land-grant university staff members - except for a few who have found in the framework of a sister-institution relationship a rare opportunity to participate in some kind of research. A serious consequence of this lack of continuity within the professional growth of the university employees has been the failure of the system to provide a rising cadre of professionals with continuous professional programs practiced both at home and abroad.

These shortcomings are effectively countered under the Title XII "vertical" system. Organization of research programs in collaboration with LDC institutions should provide many opportunities for the young researcher to do investigative work as a part of his own Ph.D. degree training or early in his career, either in a foreign country or in the U.S. working directly with foreign colleagues. Graduate students could work under their faculty members on a vertical research program either on some aspect of the problem that was best tackled within the United States, on one of the international centers, or in one of the less-developed countries -- or in some combination of all three.

The Title XII vertical approach can also do much to eliminate the problem of professional obsolescence. There would be no break in continuity implied in the movement of an American professor from the U.S. to a less developed country for service or back again to this home campus. He would be specializing not in institution building but in working within his own

discipline to help solve a problem that is of importance to his own state and less-developed countries. Indeed he would have an optimum opportunity for continuous professional growth, working closely with the most advanced people in his field not only through exchange of literature, but through conferences and through specialized work overseas. Above all, he could pull together, from his own work and that of his American and foreign colleagues, those aspects of direct importance to his own university and to the people of the state which his university serves.

We have every reason to expect that Title XII collaborative arrangements will feed back into the U.S. practical information directly applicable to our own farmers' problems, such as increasing disease resistance or protein values of the various crops, reducing need for high-cost inputs, and conquering soil erosion and water management problems.

In this connection, let me say how gratifying it is to see that American farmers fundamentally have supported assistance to the agricultural development of the LDCs. Although they may see increased short-run competition for their own production, they understand and believe that a sound agriculture is the basis upon which economic development rests everywhere. Farmers understand that as developing countries prosper they will in the aggregate increase purchases of American farm products.

On October 18 the members of the Title XII Board will be sworn in and begin two full days of discussion and deliberation. They are expected to approve a preliminary chapter, to structure a working relationship with A.I.D., and to establish and staff the mechanisms they regard as essential to getting Title XII programs off the ground.

NASULGC Executive Director Ralph Huitt regards Title XII as the

largest responsibility ever placed on American universities by the Federal Government. I believe the Board members share that opinion, and that they will be highly gratified -- as I am today -- that the dozens of institutions you represent are not satisfied to stand on the sidelines and wait for guidance and instruction on how to make Title XII work. Your participation here is concrete proof that you already feel an urgent institutional and personal responsibility to help shape the direction and nature of Title XII activity. The Board will surely want to hear from each of you and your counterparts from all over the nation.

I now welcome a chance to hear how you feel about Title XII, its challenges and its opportunities.

8. SUMMARY COMMENTS AND RECOMMENDATIONS ON EDUCATION  
AND TRAINING UNDER TITLE XII

John Blackmore  
Professor  
Agricultural and Applied Economics  
University of Minnesota

This morning my assigned task is to provide comments and recommendations on our discussion of education and training under Title XII. I will do this within the framework of my own perspective of the legislation and of the task our universities have been asked to undertake.

Title XII has a special title, "Famine Prevention and Freedom From Hunger." Under this title, the Administrator of AID is authorized to enlist the help of eligible U.S. universities in a special program of assistance to the famine and hunger-threatened nations of the world. Eligible universities include the 1890 land-grant universities and the non-land-grant colleges of agriculture. There is work for all of us.

<sup>6</sup> This is no mere addition to AID's on-going program. It is a new and special program. The Congress has given the Administrator a new Board to assist him with its planning and operation.

All languages, with the possible exception of Mathematics, are imperfect devices for describing reality. Our conventional imagery of agricultural development is especially imperfect. English words like "extension" and phrases like "Institution building" can cause problems for us. I would like to put my remarks on training in a special descriptive framework of what we are about to undertake.

We can alleviate hunger and prevent famine only by strengthening the food supply systems of the hungry and famine-threatened countries.

How do these food supply systems work? Whether in market oriented

or centrally planned economies, they are made up of sets of interacting productive units. In our country, these are the farms, the firms that supply input factors and those that process and market the products. In the industrialized countries, these productive units tend to be technologically sophisticated and sometimes they are very large. In the developing countries they often tend to be both unsophisticated technologically, and many are very small. In those countries, a key part of the development of an adequate national food supply system is to increase the technological sophistication of the many kinds of productive units. Their small size raises challenging but not impossible problems.

The technologies of a modern food supply system are based on modern science. The stream of scientific innovation required for the effective operation of food supply systems today requires that each nation's food supply system have an adequate scientific infrastructure. For the most part, this infrastructure or foundation is in the public sector. A striking difference between the developed and the underdeveloped countries is that in the developed nations, this infrastructure is well developed whereas in the underdeveloped nations it is poorly developed or almost non-existent.

I believe that there are four essential parts of this infrastructure. In those nations where the food supply system works well, there are: (1) a capacity in the government for the analysis of policy problems, for policy making and for some kinds of planning; (2) A capacity to train the many kinds of scientists and technicians required to operate a science-based food supply system, including its productive units; (3) A capacity for problem-oriented research; and (4) Capacities to provide a set of technical

service functions including the continuing education of managers and technicians in the food supply system.

I believe that this concept of the structure of national food supply systems provides a useful basis for a strategy for Title XII activities. First of all, these are national systems and the task of the United States is not to feed a hungry world, but to assist other nations to make their national food supply systems work better. Title XII activities should be designed to help hunger-threatened nations to help themselves.

If this basic principle is accepted, then it becomes clear that the first element of a Title XII strategy must be to strengthen the scientific infrastructure of the food supply systems in cooperating countries. We should help them to improve their capacities for study of their policy and planning problems. We should help them to improve their capacities to train scientists and technicians needed to make their food supply system work effectively. We should help them to improve their capacities for problem solving research. We must help them to develop their capacities to provide essential technical services of many kinds. These are the essential Title XII activities needed in the hunger-threatened countries.

Training, as has been said in this Conference, is a critically important element of an effective Title XII program. I support Dr. Swanson's recommendation that BIFAD give consideration to establishing a joint committee on training. I would also urge that training not be simply a support feature of in-country programs, but instead be brought front and center as the first priority activity of the Title XII program.

Training of the professional leadership for the four elements of the infrastructure of the food supply system should be the first stage

of an effort to eliminate the threat of famine and hunger. Only with an adequately staffed science-technology infrastructure can a cooperating nation deal with its food problems.

True in some so-called "graduate" countries the training need may be small and highly specialized, but the need is everywhere.

There were many good suggestions in the Monday afternoon workshop meetings:

(1) There is world-wide interest in improving academic organization and curricula to meet the needs of the hunger-threatened nations. I believe that it is now time to carefully plan a world-oriented conference to review the emerging structural models and teaching systems for the preparation of agricultural scientists and technicians. I think that the Rockefeller Foundation should consider taking the leadership for such a venture.

There is a general feeling that knowledge delivery systems are far from adequate in most developing countries. Here, as in the case of curricula development, we should reflect on Dr. Esman's paper. The food supply systems to be developed will include millions of small producers and the production systems are likely to be labor intensive. Policy for income distribution and the empowerment of the rural poor must be integral elements of Title XII programs and projects. These considerations will be especially important in professional and technical training programs.

(2) A Title XII training program should bring the U.S. universities and the international centers together. I think that there should be a joint ASUDIAP-Centers committee to develop a proposal for a system of cooperation in training. The joint proposal should be laid before the Board. In our

universities we need to do a better job of training our foreign students as teachers, especially undergraduate teachers. We train our foreign graduate students to be scientists. We should send every one of them home trained as a teacher with at least one course in his field planned and ready to be taught. It is very expensive to train a scientist. We can multiply the social return on our investment if they are trained and thereby encouraged to teach what they know.

(3) Our focus in this conference has been on training foreign nationals and the main emphasis should be there. However, Title XII contains an authorization for a much needed effort to train our future generations of U.S. international food scientists. The provision for the exchange of students and faculty means that at long last there is the opportunity for some of our best students and young faculty to get foreign professional experience. I would like to see the ASUDIAP directors develop and lay before the Board a proposal for such a program.

The main work of the U.S. universities in cooperating with AID should be to help the hunger-threatened countries to build the scientific foundation for adequate national food supply systems. I am not sure we will ever finish that work. So long as human populations grow and also to the extent that systems of social organization permit rising levels of living, food supply systems will need to be improved to meet changing human needs for food. Advanced professional training will inevitably become more and more important. The U.S. universities are logical centers for such training, primarily for teachers and research workers from developing countries.

We thus come to the second element of the Title XII strategy. American agricultural science now leads the world, a few nations are close behind, but many may never catch up. For the foreseeable future, there will be

need for collaboration in advanced scientific training and in research between the now-developed countries and the U.S. colleges of agriculture. Thus, under Title XII we must move from technical assistance to technical collaboration. We must move also from bilateral relationships to networks of scientific institutions including the international research centers, United Nations agencies, scientific institutions in other developed countries and U.S. government research agencies.

In summary, our strategy must be to help the hunger-threatened nations to help themselves, by putting first emphasis on strengthening training and the other key elements of the scientific infrastructure of their food supply systems. We must recognize that this will be a long-time effort, moving from assistance in the initial stages to some yet undefined kinds of permanent scientific collaboration.

We need a mechanism through which the Board can hear directly from the LDC's as to their views of their changing needs for assistance under Title XII. Consideration should be given to a "Committee of Visitors" made up of distinguished professionals from the developing world. Annually the Committee should present its views to the Board.

At this time we need to look at ourselves and my remarks here are directed primarily to the university community and to our friends in AID. First, our universities. The Congress has spoken. The mandate has been given. It is time now for the leadership of the eligible universities to provide policy guidance for their faculties. Let our faculties now hear some ringing declarations by their university presidents and deans of colleges of agriculture, that work on the world's hunger problems is important. As important as anything else we do. Now is a time for

university leaders to provide leadership. With leadership there can be commitment. We must have institutional commitment that will give faculty members the feeling that working on world food needs is both professionally important and academically rewarding. There must be academic recognition, including merit compensation for outstanding contributions in this area as in any other area of university activity. Under the mandate of Title XII the world's hungry people must have their fair share of the time and talent of the U.S. universities.

And now for those dedicated, often frustrated, always overworked staff members of AID.

Can we help you to lessen the burden of protecting the Agency from some of its friends in the Congress? Can we work together in ways that will give you time to think more about the substantive features of the job that is to be done? I deeply believe that a good program, soundly conceived and well managed will speak strongly to its own defense.

How can we help you to make a reality out of the cliché that says we do not solve development problems abroad by throwing money at them? The dollar is not our best weapon in the war on hunger. Our best weapons are trained brains and brain training.

How can we help you to free yourselves from some of the mechanics of programming and administration so that AID's scarce professional manpower can devote more time to the professionally demanding tasks of assessing the workings of national food supply systems and designing projects for making these systems work better?

We need the talent of AID's professional staff to assess the changing needs of the developing countries, to help us to identify the real and

critical needs for Title XII activities, to help the university community to learn from its own experience abroad, to provide skillful management of relationships with host governments, and management also of the myriad of logistics activities required if overseas projects are to succeed.

Hopefully, Title XII can be made to float on a somewhat smaller sea of papers than now ebb and flow through AID. Let us hope that the BIFAD will prove to be a marvelous new administrative device that will make it easier and simpler to do what we all want to see done -- help the hunger-threatened nations to better take care of themselves. Let us hope that we can devise an administrative system where AID staff energies can be devoted to making good programs work, and with less time and paper required for congressional defensive purposes.

Today in Blacksburg we are at the end of the beginning. We have, one might say, played the prelude. The joint AID-university orchestra, under Mr. Parker's baton, and with the Board members now sitting in the first chairs, is ready to play the first movement of some new world music singing of the end of those ancient world plagues -- famine and hunger.

9. SUMMARY COMMENTS AND RECOMMENDATIONS ON  
INSTITUTION BUILDING UNDER TITLE XII

Jackson A. Rigney  
Dean of International Programs  
North Carolina State University

Dr. Esman described three eras of technical assistance, and the decade of the '60's and early '70's was called the era of institution building. Toward the close of the institution building era a world-wide study was commissioned by AID to find out what lessons were learned about the process. The report from that study was titled "Building Institutions to Serve Agriculture." That report and the proceedings of the eight or ten follow-up conferences and workshops should continue to serve as the preface to the deliberations here on the role and the strategies of institution building as we enter the "era of Title XII." Much of what was reported there is being rediscovered here at this conference. In the waning months of the Institution Building era schemes were explored for assessing the degree to which institutions in the developing countries had developed a Land-Grant doctrine of service to their rural clientele, how well they had established the necessary linkages, and how well their programs were designed to carry out their stated roles. Efforts were also made to examine the system of service organizations that are supposed to undergird and support agricultural development. In many countries the process was moving ahead well.

These examinations and evaluations, however, documented the fact so often cited at this conference, that the formation of institutions per se is not the final answer to development. There was panic in the ranks of the great decision makers, both in government agencies and in private

foundations. How could they have been so wrong in believing that the investment of several hundred millions of dollars over a 10 to 15 year period in building an agricultural infrastructure would completely solve the joint problems of world hunger and of the rural poor! Their reaction has become commonplace in many quarters -- throw the baby out with the bath water, hit the panic button again, call upon conventional wisdom for a scheme that will emancipate the rural poor in less than a decade. If that remark has a cynical ring, it reflects the mood of many remarks made at this conference regarding the role and the strategies of institution building as an integral if not central part of technical assistance in the next decade under Title XII.

I was tempted to try to summarize the major points addressed on institution building under the headings of good news and bad news, but I was afraid one of the columns wouldn't fill. So I have decided instead to report them as "what I did hear" and "what I didn't hear." What I heard:

1. There is a definite place for institution building efforts in the future. The language of Title XII claims this. In fact, last night Congressman Findley gave it almost exclusive claim to Title XII activity. It is clear we must renew our efforts in this respect. I suggest, therefore, that this conference urge AID and other agencies to re-examine their posture regarding this aspect of technical assistance, especially under Title XII. This is an area in which the Land-Grant universities have special competence and long experience and a desire to participate.

2. Existing institutions in the developing countries continue to need help from the outside. Much progress has been made in bringing many of them to a respectable level of performance, with good programs, competent

staff and great promise. However, they have generally not yet moved into the mid-stream of national development. They still sit on the periphery of national decision making and action. They need continued help to realize the potential they possess. This group of institutions are largely found in what are now called AID-graduate countries. However, they have the greatest potential for affecting world food production in the last quarter of this century. BIFAD is urged to develop policies under Title XII that permit the kind of input that will see these institutions develop their full potential.

3. Some new institutions are needed in the developing countries.

Esman made a compelling argument for local, rural organizations of farmers which could facilitate the "retailing of technical service," to the small farmer. Other models for this retailing were discussed, and this area sorely needs further study and experimentation. In implementing Title XII it is hoped there will be flexibility in exploring such possibilities rather than being locked in to some pre-judged, rigid institution building exercises.

4. The format for institution building -- technical assistance must change. This is demanded by the changed needs of the host countries and host institutions, by the nationalistic sensitivities of the host institutions, and by the reassessments by Land-Grant universities of why they really want to be in this business in the future. It is clear to the entire conference that the format for this activity should not be left to the discretion of the bureaucratic lawyers whose major concern is to keep the contractual paper work tidy. BIFAD is requested by this conference to give early attention to policies which admit of more appropriate format.

5. Those who will be involved in institution building in the future must be specialists who are outstanding in their fields. The "jack of all trades but master of none" will have no place in these activities. We heard many requests for specialists who can accomplish in another area what the last one did in this or that. The Land-Grant universities must find arrangements under which these people can be made available in effective, productive activity.

6. Research will continue to command a large role in the needs, the format and in the product of technical assistance-institution building; Congressman Findley's comments notwithstanding. The fact is that AID has only recently discovered the term "research" and they should not be allowed to forget it soon. Much of the research will be highly practical and in the form of putting together packages of practices that are useful at various levels of technology. Much of it will have interests that are common to the assisting as well as the host institution. Politically this will perhaps be the least sensitive type of activity, hence it can serve as an efficient rallying point for other needed inputs in institution building.

7. Assistance in integrating the functions of different classes of institutions is needed. It was even proposed that university curricula be organized along these lines. Providing such assistance will require much flexibility in designing and delivering the help. A caution flag needs to be raised, however. Our past experience in assisting in the integration of teaching, research and extension has been littered with counterproductive jurisdictional fights. It points up to the dangers of attempting such politically sensitive matters with an apolitical, technological approach.

What I didn't hear!

1. How the universities are going to organize to go forward under Title XII. This has been the common complaint at this conference in the halls and over coffee. This is really not unexpected, given the status of BIFAD's organization. It is not to criticize the organizers of this very fine conference; although most of the university representatives came here expecting someone to shed a little light on the matter.

As President Thomas pointed out yesterday, the universities are still asking themselves whether they should be involved in Latin America, Africa, or the Far East? Should they work with one institution or many? How can they accept the invitation of the International Centers to let them perform an "interface function" between Land-Grant universities and national programs. Who will perform the sensitive political negotiations that are inevitably required before a program is fully operative?

U.S. Universities are becoming very restive in trying to decide whether they alone don't understand this situation, or whether they are about to be left behind, or whether they in fact can afford to get on board in this new thrust.

BIFAD and NASULGC are urged to find ways to continue the dialogue started here. The Land-Grant universities want to hear much more along these lines, and I hope we accept Congressman Findley's recommendation to set another session before too long.

2. How do the Land-Grant universities find the political muscle to inject themselves into the Title XII activity in the manner anticipated in the legislation? This is a piece of homework that is yet to be completed. A mandate from the Congress for international involvement can

only go so far with State legislatures. It is permissive at best. The National Association of State Universities and Land-Grant Colleges needs to put this on the agenda for several long and serious sessions.

3. How to help those countries and their institutions to serve the small, commercial farmer whose function in famine prevention will be to feed the urban populations and possibly assist in earning export income. Concentration on "the poorest of the poor," the landless and subsistence level peasants is an admirable humanitarian move. It does not, however, have much potential for paying the bills. The great potential lies with the small farmer who can and must move into a monetized agriculture at a higher technological level. Must we swing totally to the welfare aspects of technical assistance, or is there still room for a balanced attack on their problems? This conference should go on record as favoring the balanced approach if the fruits of Title XII are to be measured in Famine Prevention terms.

4. Finally, I heard no hint of the involvement of private enterprise in these activities. There is abundant evidence that the major channels of transfer of technology in the future will be through private enterprise. All of us will be called upon to service that activity. We cannot afford a posture of indifference or of ignoring this phenomenon. It will be a fact of life and we have responsibility to make the most of it. The truth is, this is central to our justification for being involved at all.

We hope BIFAD, NASULGC, CGIAR, FAO and the UN family will work together closely in the next few months in addressing these issues.

10. SUMMARY COMMENTS AND RECOMMENDATIONS ON INTERNATIONAL  
INSTITUTIONAL COLLABORATION UNDER TITLE XII

Anson R. Bertrand  
Dean of Agriculture  
Texas Tech University

and

Member  
Board for International Food and Agricultural Development

It has been a rich experience for me to be able to participate with you in identifying some of the key issues and possible solutions in international development. Prior to his leaving, Dr. Thomas and I expressed to each other regrets that all of the members of the Board for International Food and Agricultural Development were not here to benefit from these deliberations. We also resolved to do our utmost to retain foremost in our minds the concerns that have been expressed here as we work with AID to carry out the intent of Congress in Title XII.

I should like to appeal to each of you and through you to your colleagues to communicate freely and frequently with BIFAD members. This is especially important during the next few months for these are crucial months in implementing Title XII.

The Conference organizers asked me to attempt to summarize the discussions concerning International Institutional Collaboration. It has been emphasized that effective international institutional collaboration is the key to success of Title XII, and for that matter to any long term development programs in the LDC's. Institutional non-cooperation can completely nullify the best of efforts in education, research, delivery, and use of improved technology.

Title XII directs implementation of programs in three areas:

- (1) Research -- extending the frontiers of knowledge
- (2) Delivery of knowledge and implementing its use -- (country programs)
- (3) Strengthening U.S. and LDC education systems.

In most cases these will require different kinds of collaborative efforts. Some institutions may be best equipped to carry out sophisticated research while others are most capable in an in-country action program -- the point being that under Title XII there is room for organizational specialization, but in the aggregate all efforts must fit together. Our task is to find the most effective means of utilizing all talent to impinge on the objectives.

Not the least of our tasks is identifying the priority needs in the LDC's. The realistic setting of goals and priorities within the LDC must be a function of the LDC with assistance from international centers, AID missions, university personnel and other knowledgeable people. It was suggested that BIFAD quickly identify people who can effectively assist the Board in "getting the facts" and setting priorities by countries. Dr. Sawyer stated clearly the job ahead when he said, "We must harness the capabilities available to form one force toward solving world food needs." He also emphasized the rivalries and undue competition that must be avoided.

The international institutions that must collaborate for success with Title XII programs represent a spectrum of specialities, e.g. the international centers are specialists in production of technical knowledge. Universities are most capable in research and teaching. Some organizations have unusual capabilities in extending knowledge to the potential users. Commercial enterprises are specialists in developing, adopting

and marketing. Ministries of Education and Ministries of Agriculture in LDC's are usually uniquely equipped for certain essential roles in the development process.

Effective collaboration results from interactions between "live organizations." Collaborations should not be expected nor sought from organizations that are not vigorous and willing to work diligently toward the overall goals of development. It was emphasized that the collaborating organizations must want to collaborate, must agree on goals and methods, and must keep the lines of communication open. Collaboration cannot be forced or legislated. Parties must enter the activity with good intentions and a large measure of generosity. Institutions having a need must seek assistance from others even to the point of purchasing it through contracts and grants.

Collaborative efforts should be built around commodities that are essential for development of the LDC. Dr. Sawyer indicated that international centers are experts at research problem identification, project preparation and justification. This offers a golden opportunity for U.S. University - Research Center Collaboration.

It was pointed out that collaborating institutions must:

- (1) be willing to go where needed
- (2) stay as long as needed
- (3) be willing to change as needed.

Collaboration can be improved and linkages established with International Centers as they provide short term specialized training and as they bring in specialists and foster exchange of students between developed and developing countries. Such bilateral associations are essential to

gaining entry to growers' fields by organizations that are not well known in the LDC. U.S. agencies must recognize that many LDC's are moving rapidly in developing strategies for agricultural development and that we must be prepared to work in consort with, and aid and abet these strategies in LDC's.

It is essential that collaborators fully understand individual and collective responsibilities, remain flexible and understand the consequences of actions or inaction.

Collaboration must be for a purpose and in almost all cases it is to increase productivity of the small farmers. Anything else is doomed to failure in the LDC's.

Successful collaboration requires that we stop being provincial and realize that expertise necessary to carry out successful collaborative development activities is where one finds it. It is not exclusively in the U.S.

During the discussion periods several specific recommendations were developed. They are listed below:

1. Developing national institutional capabilities should be the key focal point in international institutional collaboration.
2. Regional institutional expertise such as that which exists in specialized agencies. (i.e. IICA, INCAP, FAO, Foundations) should be carefully examined as an important linkage with U.S. universities along with international centers and national institutions.
3. Utilizations of experts from LDC's by U.S. universities could benefit collaborative efforts.
4. Use caution in selecting national institutions for linkages to avoid political sensitivities.

5. U.S. universities should become involved in evaluating on-going programs in LDC's.
6. Human nutrition problems should receive special collaborative efforts at both national and local levels in most LDC's.
7. Collaborative efforts must recognize production, marketing, and employment problems in an integrated way.
8. International institutional collaboration must produce something useful for the small farmer in his day-to-day operation.
9. To be effective collaborative programs must benefit farmers in a region or throughout a country.
10. Collaborative efforts must involve new multi-disciplinary approaches to problem solving.
11. Collaborative efforts in LDC's should be directed to projects with great diversification relative to accepted development objectives.
12. Collaborative efforts should take into account the varying contextual "climates" and recognize constraints, especially in politically sensitive areas of activity.
13. Collaborators must be cost conscious and be careful to work within affordability of LDC's.
14. Most collaborators efforts should be carried out where the development problem is.

Now that I have, I hope, summarized the sessions of this conference concerning international institutional collaboration, I would like to take the liberty of a personal word. I look on Title XII as a golden opportunity for the improvement of agricultural education, research, and

extension capabilities in the U.S. as well as in the LDC's. Certainly Congress intended that the capabilities of U.S. universities to deal effectively with international food problems be increased.

Traditionally U.S. agricultural colleges have been composed of the haves and have nots, with a few in-betweens, and then there is that rapidly growing group of colleges located at state and private universities that are not designated as land-grant. By-and-large, there has been little communication and essentially no collaboration between these three groups of institutions, but all have contributions to make in development work.

I think Title XII offers a unique opportunity to discard the long standing barriers to collaboration among U.S. universities and opens the way for U.S. universities to forge ahead with new and imaginative collaborative efforts on behalf of the most serious problem facing all of us. That being: to find and implement ways to more effectively provide world-wide food needs.

**APPENDIX A**  
**CONFERENCE PROGRAM**



CONFERENCE ON INTERNATIONAL DEVELOPMENT:

A WORKING CONFERENCE ON UNIVERSITY ACTION

Focus of Conference: Implementation of the 1975 Famine Prevention and Freedom from Hunger Amendment (Title XII) of the Foreign Assistance Act, with special emphasis on consideration of alternative proposals for:

1. Education and training programs for development;
2. Institution building programs in developing countries; and
3. National and international institutional collaboration as related to international development problems.

PROGRAM

Monday, September 27

- 9:00 - 2:00 p.m. Registration - Lobby
- 2:00 - 2:30 p.m. Welcome - Auditorium (Front Half)  
*Robert G. Dyck*, Director, University International Programs, Virginia Polytechnic Institute and State University  
*William E. Lavery*, President, Virginia Polytechnic Institute and State University  
*Daniel G. Aldrich, Jr.*, Chancellor, University of California, Irvine, and President, National Association of State Universities and Land-Grant Colleges
- 2:30 - 3:30 p.m. Workshop on Education and Training for Development - Auditorium (Front Half)  
Session Chairman: *Russell E. Larson*, Provost, the Pennsylvania State University  
Panelists:  
*Don Paarlberg*, Director, Agricultural Economics, U.S. Department of Agriculture  
*Clarence C. Gray, III*, Foundation Representative for Southeastern United States, Rockefeller Foundation  
*Burt E. Swanson*, International Agriculture Education, University of Illinois  
*Manzoor Ahmed*, Associate Director for Education Strategy Studies, International Council for Educational Development

Monday, September 27 (continued)

3:30 - 5:00 p.m.

Small Discussion Groups

<u>Panelists</u>	<u>Convenors</u>	<u>Room</u>
<i>Paarlberg</i>	<i>Hugh F. Rouk</i> Director, International Education Oklahoma State University	B
<i>Gray</i>	<i>Angel Calderón-Cruz</i> Special Assistant to the President University of Puerto Rico	C
<i>Swanson</i>	<i>Charlotte E. Roderuck</i> Associate Dean, College of Home Economics Iowa State University	F
<i>Almed</i>	<i>Roy G. Creech</i> Head, Department of Agronomy Mississippi State University	G

5:30 - 6:30 p.m.

Reception - Commonwealth Dining Room, Area C

6:30 - 9:00 p.m.

Banquet - Commonwealth Dining Room, Area D

Presiding: *William E. Lavery*, President, Virginia  
Polytechnic Institute and State University

Introduction of Speaker: *C. Peter Magrath*, President,  
University of Minnesota

Keynote Address - "Public and Private Sector Assistance  
to Developing Countries": *Senator Hubert H. Humphrey*

9:00 - 10:00 p.m.

Reception and Informal Discussion - Commonwealth Dining Room, Area C

Tuesday, September 28

9:00 - 10:00 a.m.

Workshop on Institution Building in Developing Countries - Auditorium (Front Half)

Session Chairman: *Donald C. Kimmel*, Director, North  
American Liaison Office, Food and Agriculture Organiza-  
tion of the United Nations

Panelists:

*Milton J. Esman*, Director, Center for International  
Studies, Cornell University

*Robert D. Osler*, Deputy Director General and Treasurer,  
International Maize and Wheat Improvement Center  
(CIMMYT)

*Arturo Tanco*, Secretary of Agriculture, Philippines

Tuesday, September 28 (continued)

10:00 - 11:30 a.m.

## Small Discussion Groups

<u>Panelists</u>	<u>Convenors</u>	<u>Room</u>
<i>Esmen</i>	<i>Vernon C. Larson</i> Director, International Agricultural Programs Kansas State University	B
<i>Osler</i>	<i>U. J. Grant</i> Representative, U.S. & Europe International Agricultural Development Service	C
<i>Tanco</i>	<i>Walter D. Buddemeier</i> Associate Dean, International Agricultural Programs University of Illinois	F

12:00 - 2:00 p.m.

## Luncheon - Commonwealth Dining Room, Area D

Presiding: *P. Howard Massey, Jr.*, Associate Dean, College of Agriculture and Life Sciences, and Chairman, University Committee on International Programs, Virginia Polytechnic Institute and State University  
Address - "University Roles in Title XII": *Gerald W. Thomas*, President, New Mexico State University and Member, Board for International Food and Agricultural Development

2:30 - 3:30 p.m.

## Workshop on International Institutional Collaboration - Auditorium (Front Half)

Session Chairman: *Wendell J. McKinsey*, Assistant Dean, College of Agriculture, and Director, International Agricultural Programs, University of Missouri

## Panelists:

*Richard Sawyer*, Director, International Potato Center (CIP)  
*Paulo de T. Alvim*, Scientific Director, Centro de Pesquisas do Cacau, Brazil  
*Robert K. Waugh*, Adjoining Director, Instituto de Ciencia Y Tecnologia Agrícolas (ICTA), Guatemala

3:30 - 5:00 p.m.

## Small Discussion Groups

<u>Panelists</u>	<u>Convenors</u>	<u>Room</u>
<i>Sawyer</i>	<i>Sidney H. Evans</i> Chairman, Department of Economics North Carolina Agricultural and Technical University	B
<i>Alvim</i>	<i>Calvin H. Raulerson</i> Executive Director, International Center for Arid and Semi-Arid Land Studies Texas Tech University	C

Tuesday, September 28 (continued)

## Small Discussion Groups (continued)

	<u>Panelists</u>	<u>Convenors</u>	<u>Room</u>
	<i>Waugh</i>	<i>Michael J. Moran</i> Director, Inter-American Institute of Agricultural Sciences of the OAS	F
5:30 - 6:30 p.m.		Reception - Commonwealth Dining Room, Area C	
6:30 - 9:00 p.m.		Banquet - Commonwealth Dining Room, Area D Chairman: <i>John D. Wilson</i> , Vice President for Academic Affairs, Virginia Polytechnic Institute and State University Introduction of Speaker: <i>Congressman William C. Wampler</i> Address - "Title XII Implementation": <i>Congressman</i> <i>Paul Findley</i>	
9:00 - 10:00 p.m.		Reception and Informal Discussion - Commonwealth Dining Room, Area C	

Wednesday, September 29

9:00 - 10:00 a.m.	Concluding Address and General Discussion - Auditorium (Front Half) Session Chairman: <i>D. Woods Thomas</i> , Director, Division of International Programs in Agriculture, Purdue University Address - "Title XII Implementation": <i>Daniel Parker</i> , Administrator, Agency for International Development
10:00 - 12:00 noon	Workshop Summaries and Recommendations <i>John Blackmore</i> , Professor of Agricultural Economics University of Minnesota <i>Jackson A. Rigney</i> , Dean of International Programs, North Carolina State University <i>Anson Bertrand</i> , Dean of Agriculture, Texas Tech Univer- sity, and Member, Board for International Food and Agricultural Development

Conference Planning Committee

Robert B. Albritton, Political Science  
C. Dean Allen, Extension  
Wilson B. Bell, University Development  
Fred J. Brieve, Education  
J. Peter Clark, Chemical Engineering  
Robert G. Dyck, University International Programs, Chairman  
Carol Hall, Human Nutrition and Foods  
Patricia A. Kluck, Sociology - Anthropology  
P. Howard Massey, Jr., Agriculture and Life Sciences  
Victor Odenyo, Agronomy  
Leonard Shabman, Agricultural Economics  
H. Fred Troutt, Veterinary Science  
A. Coskun Samli, Marketing and Business Administration  
William R. Walker, Water Resources Research  
Jane Wentworth, Human Nutrition and Foods  
Coyt T. Wilson, Agricultural Experiment Station, Research Division

Conference Staff

Robert B. Albritton, Planning and Arrangements  
G. Edwin Bunce, Arrangements  
William C. Burleson, Jr., News Services  
Roger E. Comley, Hospitality and Entertainment  
Barbara Dudding, Secretary  
Robert G. Dyck, Coordinator  
I. E. Nichols, Campus Security  
Walter L. Saunders, Jr., CEC Arrangements  
Jane H. Walter, Entertainment

**APPENDIX B**

**LIST OF CONFERENCE PARTICIPANTS**

CONFERENCE ON INTERNATIONAL DEVELOPMENT

Program Number: 7609-2729-1087

Dates: September 27-29, 1976

DONALDSON BROWN CENTER FOR CONTINUING EDUCATION

LIST OF CONFERENCE PARTICIPANTS

1. Daniel Aldrich  
University of California-Irvine  
Irvine, CA 92717  
NASULGC
2. Manzoor Ahmed  
Box 217  
Essex, CT 06426  
International Coun. for Ed. Dev.
3. Delfina B. Aguillon  
NCP Bldg., South Superhwy.  
Rizal, Philippines  
National Nutrition Coun.
4. Robert B. Albritton  
Dept. of Political Sci.  
VPI&SU  
Blacksburg, Va. 24061
5. Phyllis T. Albritton  
VPI&SU  
Blacksburg, Va. 24061
6. Salvador Alemany  
U.P.R. Mayaguez  
Mayaguez, P.R.
7. Paulo de T. Alvim  
P.O. Box 7  
Itabuna, Bahia, Brazil 45600  
Centro de Pesquisas do Cacau
8. Michaele Amedee  
Bureau of Nutrition  
Haiti
9. J. Lawrence Apple  
N.C. State University  
Raleigh, N.C. 27607
10. Jesse C. Arnold  
Department of Statistics  
VPI&SU  
Blacksburg, Va. 24061
11. Peggy P. Arnold  
College of Agriculture  
VPI&SU  
Blacksburg, Va. 24061
12. John D. Axtell  
Department of Agronomy  
Purdue University  
W. Lafayette, IN 47907
13. Robert I. Ayling  
Econ. Research Serv. USDA  
14th & Independence, S.W.  
Washington, D.C. 20250
14. Juan Manuel Baertl  
VPI&SU  
Blacksburg, Va. 24061
15. Huey J. Battle  
Virginia State College  
Petersburg, Va.
16. Donald W. Beattie  
1 DuPont Cr., Suite 410  
Washington, D.C. 20036  
American Assoc. of Community/Jr.  
Colleges
17. Charles Beer  
Washington, D.C.  
USDA
18. F. A. Barnardo  
Baybay, Leyte, Philippines  
Visayas State College of Ag.

19. Anson Bertrand  
Texas Tech University  
POB 4169  
Lubbock, Texas
20. William E. Bertrand  
Tulane University  
New Orleans, La.
21. R. Hilton Biggs  
Department of Fruit Crops  
University of Florida  
Gainesville, FL 32611
22. John Blackmore  
University of Minnesota  
St. Paul, MN 55108
23. Velma Blackwell  
Tuskegee Institute  
8750 Ga. Ave.  
Silver Spring, Md. 20109
24. George Blume  
Extension Division  
108 Hutcheson Hall  
VPI&SU  
Blacksburg, Va. 24061
25. Edna Earl Blume  
VPI&SU  
Blacksburg, Va. 24061
26. Dale Bohmont  
Dean & Director  
College of Agriculture  
University of Nevada  
Reno, Nevada
27. Charles E. Bower  
Apt. Aereo 67-13  
Palmira, Columbia  
Centro Internacional de Agricultura Tropical
28. Frederick J. Brieve  
Director of International Programs  
College of Education  
VPI&SU  
Blacksburg, Va. 24061
29. Steven T. Buccola  
Rt. 2, Yellow Sulpher Springs  
VPI&SU  
Blacksburg, Va. 24061
30. Walter D. Buddemeier  
University of Illinois  
Urbana, IL
31. Edwin Bunce  
Biochemistry & Nutrition  
VPI&SU  
Blacksburg, Va. 24061
32. Angel Calderon Cruz  
U. Puerto Rico  
G.P.O. Box 4984-G  
San Juan, P.R. 00936
33. Stuart Cassell  
V.P. for Administration  
VPI&SU  
Blacksburg, Va. 24061
34. Lon Cesal  
AA/TA, Room 3312  
Department of State, AID  
Washington, D.C. 20523
35. H. R. Chheda  
University of Ibadan  
Ibadan, Nigeria
36. Alma B. Clark  
School of Home Economics  
Louisiana State University  
Baton Rouge, LA 70803
37. J. Peter Clark  
Chemical Engineering Dept.  
VPI&SU  
Blacksburg, Va. 24061
38. Nancy Clark  
VPI&SU  
Blacksburg, Va. 24061
39. Joseph D. Coffey  
Dept. of Ag. Econ.  
VPI&SU  
Blacksburg, Va. 24061
40. J. B. Copeland  
Clemson University  
Clemson, SC
41. Roy G. Creech  
Mississippi State Univ.  
Box 5248  
Mississippi State, MS 39762

42. James W. Dean  
Vice President, Student Affairs  
121 Patton Hall  
VPI&SU  
Blacksburg, Va. 24061
43. John Dickey  
Environmental & Urban Studies  
VPI&SU  
Blacksburg, Va. 24061
44. Lewis H. Dickson  
University of Tennessee  
POB 1071  
Knoxville, TN 37901
45. Barbara Dudding  
Secretary, International Programs  
VPI&SU  
Blacksburg, Va. 24061
46. Tariq M. Durrani  
Management, Housing & Family Development  
VPI&SU  
Blacksburg, Va. 24061
47. John A. Dwyer  
Dept. of Ag. Econ.  
VPI&SU  
Blacksburg, Va. 24061
48. Franciska Dyck  
VPI&SU  
Blacksburg, Va. 24061
49. Robert Dyck  
Director  
University International Programs  
VPI&SU  
Blacksburg, Va. 24061
50. N. Eugene Engel  
Food & Research Economics  
University of Massachusetts  
Boston, MA
51. Anne Marie Erdman  
Florida State University  
Tallahassee, FL 32306
52. Milton J. Esman  
Center for International Studies  
Cornell University  
Ithaca, NY 14853
53. Thomas S. Estes  
University of Rhode Island  
Kingston, RI
54. Sidney H. Evans  
Department of Economics  
North Carolina A&T State Univ.  
Greensboro, NC 24711
55. W. J. Fabrycky  
Research Division  
VPI&SU  
Blacksburg, Va. 24061
56. Francille Firebaugh  
1787 Neil Ave.  
The Ohio State University  
Columbus, Ohio 43210
57. William L. Flowers, Jr.  
140 CEC  
VPI&SU  
Blacksburg, Va. 24061
58. Charles H. Fleer  
Agency for International Dev.  
Washington, D.C. 20523
59. William Fougere  
Public Health Ministry  
Place D'Italie, Haiti
60. La Vern A. Freeh  
201 Coffey Hall  
University of Minnesota  
St. Paul, MN 55108
61. William R. Furtick  
2545 The Mall  
University of Hawaii  
Honolulu, Hawaii 96822
62. William K. Gamble  
International Inst. of  
Tropical Agriculture  
P.M.B. 5320  
Ibadan, Nigeria
63. Grayce Goetz  
College of Home Economics  
University of Tennessee  
Knoxville, TN 37916

64. Charles M. Good  
Geography Department  
VPI&SU  
Blacksburg, Va. 24061
65. U. J. Grant  
International Ag. Dev. Service  
Cornell University  
409 Bradfield Hall  
Ithaca, NY 14853
66. Clarence C. Gray, III  
The Rockefeller Foundation  
1133 Ave. of the Americas  
New York, N.Y. 10036
67. Neil S. Grigg  
Colorado State University  
Ft. Collins, CO 80523
68. Carol Hall  
Dept. of Human Nutrition & Foods  
VPI&SU  
Blacksburg, Va. 24061
69. Stephen L. Haynes  
Dept. of Ag. Econ.  
VPI&SU  
Blacksburg, Va. 24061
70. Johnny R. Hill  
Office for Adv. Public Negro Colleges  
805 Peachtree St., NE  
Atlanta, GA 30308
71. Thomas C. Howard  
History Department  
VPI&SU  
Blacksburg, Va. 24061
72. Kay B. Jester  
Dept. of Human Nutrition & Foods  
VPI&SU  
Blacksburg, Va. 24061
73. Charles Johnson  
OARDC  
Wooster, Ohio 44691
74. John J. Jonas  
Kraftco Corporation  
801 Waukegan Road  
Glenview, IL 60025
75. Ralph E. Jones  
Agency for International Dev.  
Washington, D.C. 20523
76. James B. Kendrick, Jr.  
U. Cal. Systemwide Admin.  
317 U. Hall, 2200 U. Ave.  
Berkeley, CA 94720
77. Charles A. Kennedy  
Dept. of Phil. & Rel.  
VPI&SU  
Blacksburg, Va. 24061
78. Conrad J. Kercher  
Dept. of Animal Nutrition  
University of Wyoming  
Laramie, WY 82071
79. D. C. Kimmel  
Food & Ag. Organization  
of the U.N.  
1776 F St., NW  
Washington, D.C. 20437
80. Mrs. D. C. Kimmel  
Washington, D.C. 20437
81. Patricia A. Kluck  
Sociology Department  
VPI&SU  
Blacksburg, Va. 24061
82. Bob Kleis  
University of Nebraska  
Lincoln, NE 68583
83. Steve Kovach  
Dept. of Horticulture  
VPI&SU  
Blacksburg, Va. 24061
84. Alfred H. Krebs  
V.P., Special Projects  
VPI&SU  
Blacksburg, Va. 24061
85. Mrs. Alfred H. Krebs  
VPI&SU  
Blacksburg, Va. 24061
86. Russell E. Larson  
Penn State University  
University Park, PA 16802

87. William E. Lavery  
President, VPI&SU  
210 Burruss Hall  
Blacksburg, Va. 24061
88. Peggy J. Lavery  
VPI&SU  
Blacksburg, Va. 24061
89. Vernon Larson  
Kansas State Univ.  
Manhattan, KA 66506
90. Woody Leach  
VPI&SU Campus Minister  
Blacksburg, Va. 24061
91. C. Ned Lester  
Extension Division  
VPI&SU  
Blacksburg, Va. 24061
92. Thomas H. Lewis  
Florida A&M University  
Tallahassee, FL
93. John J. Ligon  
VA Dept. of Ag. & Commerce  
203 N. Governor St., Rm. 208  
Richmond, Va. 23219
94. George F. Little  
Va. Dept. of Mental Health &  
Retardation  
2000 Riverside Dr., #8-S  
Richmond, Va. 23225
95. Roy L. Lovvorn  
NASULGC  
One DuPont Circle, #710  
Washington, D.C. 20036
96. Ken McDermott  
Agency for International Development  
Washington, D.C. 20523
97. Wendell J. McKinsey  
2-69 Agriculture  
University of Missouri  
Columbia, MO 65201
98. R. A. Mabry  
N.C. State University  
PB 5125  
Raleigh, NC 27607
99. Joseph Madamba  
Philippine Coun. for Ag. &  
Resource Research  
Philippines
100. C. Peter Magrath  
University of Minnesota  
Minneapolis, MN
101. P. Howard Massey, Jr.  
College of Ag. & Life Sci.  
VPI&SU  
Blacksburg, Va. 24061
102. Mrs. P. Howard Massey, Jr.  
VPI&SU  
Blacksburg, Va. 24061
103. William F. Masterson  
Xavier University  
Philippines
104. B. D. Mayberry  
Tuskegee Institute  
Tuskegee Inst., AL
105. Frank Meissner  
Inter-American Development Bank  
909 17th St., NW  
Washington, D.C. 20577
106. Luiz Mejia-Mattei  
U.P.R.--Mayaguez  
Mayaguez, Puerto Rico
107. Mary J. Miraglia  
NASULGC  
#1 DuPont Circle, NW  
Washington, D.C. 20036
108. Sandra Mixon  
Research Triangle Institute  
Research Triangle Park, NC
109. Michael J. Moran  
Inter-American Institute of  
Agricultural Sciences  
1735 Eye St., NW  
Washington, D.C. 20006
110. Ronald Morse  
Dept. of Horticulture  
VPI&SU  
Blacksburg, Va. 24061

111. Edward H. Moseley  
The University of Alabama  
Box 6186  
University, AL 35486
112. Ernest J. Nesius  
Dept. of Ag. Econ.  
West Virginia University  
Morgantown, W.Va. 26506
113. James R. Nichols  
College of Ag. & Life Sciences  
VPI&SU  
Blacksburg, Va. 24061
114. Andrew Nunez  
Center for International Studies  
New Mexico State University  
Las Cruces, NM 88001
115. William L. Ochsenwald  
Department of History  
VPI&SU  
Blacksburg, Va. 24061
116. Teresa Oseiboama  
VPI&SU  
Blacksburg, Va. 24061
117. Robert D. Osler  
CIMMYT  
A.P.O.O. Postal 6-641  
Mexico, 6, D.F. Mexico
118. Edwin B. Oyer  
Cornell University  
261 Roberts Hall  
Ithaca, NY 14853
119. J. M. Oyler  
Veterinary Science  
VPI&SU  
Blacksburg, Va. 24061
120. Don Paarlberg  
USDA  
Room 214-A  
Washington, D.C. 20250
121. James Palmer  
Food Science & Technology  
VPI&SU  
Blacksburg, Va. 24061
122. Theodore J. Pinnock  
Human Resources Dev. Center  
Tuskegee Institute  
Tuskegee Inst., AL 36088
123. Donald L. Plucknett  
Dept. of Agronomy  
University of Hawaii  
Honolulu, Hawaii 96822
124. Richard W. Priggie  
Interreligious Task Force on  
U.S. Food Policy  
955 L'Enfant Plaza, SW, Suite 4300  
Washington, D.C. 20024
125. Jefferson R. Rangel  
Inter-American Institute of  
Agricultural Sciences  
1735 Eye St., NW  
Washington, D.C. 20006
126. Calvin Raullerson  
Texas Tech University  
Lubbock, TX
127. Jackson A. Rigney  
N.C. State University  
Raleigh, N.C. 27607
128. James Richardson  
Agricultural Economics  
VPI&SU  
Blacksburg, Va. 24061
129. S. J. Ritchey  
College of Home Economics  
VPI&SU  
Blacksburg, Va. 24061
130. Bruce A. Robertson  
VPI&SU  
Blacksburg, Va. 24061
131. H. F. Robinson  
Western Carolina University  
Cullowhee, N.C. 28723
132. Meredith Robinson  
Dept. of Human Nutrition &  
Foods  
VPI&SU  
Blacksburg, Va. 24061

133. Charlotte E. Roderuck  
College of Home Economics  
Iowa State University  
Ames, Iowa 50011
134. T. S. Ronnigen  
USDA  
Cooperative State Research  
Service  
Washington, D.C. 20250
135. Luzi Rocha Neto  
Getulio Vargas Foundation - ETAP  
Praia Rotafogo 190-85  
Rio de Janeiro, Brazil
136. Hugh F. Rouk  
Oklahoma State University  
Stillwater, OK 74074
137. Ras Sagaral  
Dept. of Plant Path. & Phy.  
VPI&SU  
Blacksburg, Va. 24061
138. Juan Jose Salazar  
Agrarian Bank  
Edificio Avianca, Piso 26  
Bogota, Columbia
139. A. Coskun Samli  
Dept. of Business Adm.  
VPI&SU  
Blacksburg, Va. 24061
140. Manuel Sanchez-Nelson  
Int. Fertilizer Dev. Ctr.  
402 1st Federal Building  
Florence, AL 35630
141. Lon K. Savage  
Executive Asst. to the Pres.  
VPI&SU  
Blacksburg, Va. 24061
142. Mrs. Lon K. Savage  
VPI&SU  
Blacksburg, Va. 24061
143. Richard L. Sawyer  
International Potato Center  
POB 5969  
Lima, Peru
144. Leonard Shabman  
Dept. of Ag. Econ.  
VPI&SU  
Blacksburg, Va. 24061
145. William Shaw  
Office of Sea Grant  
Washington, D.C.
146. Abdelmajid Slama  
Centre National des  
Etudes Agricoles  
1 Rue Oun Khalthoun  
Tunis, Tunisia
147. Bruce Smith  
Xerox Corporation  
Richmond, Va.
148. Darl E. Snyder  
201 Conner Hall  
University of Georgia  
Athens, GA 30602
149. Paul J. Stangel  
Int. Fert. Dev. Ctr.  
402 1st Federal Bldg.  
Florence, AL 35630
150. Alto Straughn  
University of Florida  
Gainesville, FL
151. Warren Strother  
Information Services  
VPI&SU  
Blacksburg, Va. 24061
152. Burton E. Swanson  
University of Illinois  
355 Education Building  
Urbana, IL 61801
153. Arturo Tanco  
Secretary of Agriculture  
Manila, Philippines
154. Patricia Tanco  
2380 Baltimore Road  
Rockville, Md. 20853
155. D. Woods Thomas  
Div. of Int'l Prog. in Ag.  
Purdue University  
West Lafayette, Ind.

156. Gerald W. Thomas  
President, New Mexico State Univ.  
Las Cruces, NM 88001
157. Ann E. Thompson  
Extension Division  
VPI&SU  
Blacksburg, Va. 24061
158. Dennis Thompson  
State U. of New York  
Binghamton, N.Y.
159. William Van Dresser  
Extension Division  
VPI&SU  
Blacksburg, Va. 24061
160. George Waldman  
USDA Economic Research Service  
14th & Independence, SW  
Washington, D.C. 20250
161. William R. Walker  
Water Resources Center  
VPI&SU  
Blacksburg, Va. 24061
162. Jane H. Walter  
University International Programs  
VPI&SU  
Blacksburg, Va. 24061
163. Robert K. Waugh  
Instituto de Ciencia y Tecnologia  
Agricolas  
5a. Avenida 12-31, Zona 9  
Guatemala
164. Mark Warlick  
President, Student Gov. Assoc.  
VPI&SU  
Blacksburg, Va. 24061
165. Ryland E. Webb  
Dept. of Human Nutrition & Foods  
VPI&SU  
Blacksburg, Va. 24061
166. Helen Wells  
Management, Housing & Family Dev.  
VPI&SU  
Blacksburg, Va. 24061
167. Jane Wentworth  
College of Home Economics  
VPI&SU  
Blacksburg, Va. 24061
168. Coyt T. Wilson  
Research Division  
VPI&SU  
Blacksburg, Va. 24061
169. C. Peairs Wilson  
College of Tropical Agriculture  
2545 The Mall  
Honolulu, Hawaii 96822
170. John D. Wilson  
V.P. for Academic Affairs  
VPI&SU  
Blacksburg, Va. 24061
171. Mrs. John D. Wilson  
VPI&SU  
Blacksburg, Va. 24061
172. Kim A. Wilson  
Inst. of International Ag.  
Michigan State University  
E. Lansing, MI 48824
173. Stanley P. Wilson  
Ag. Experiment Station  
Auburn University  
Auburn, AL 36830
174. Paul Findley  
U.S. House of Representatives  
Washington, D.C. 20515
175. Daniel Parker  
Administrator, U.S.A.I.D.  
Washington, D.C. 20523
176. William C. Wampler  
U.S. House of Representatives  
Washington, D.C. 20515