

THE TITLE XII PARTNERSHIP

A Report to Congress

on

Title XII - Famine Prevention and Freedom from Hunger

of the

Foreign Assistance Act of 1961 As Amended

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LIST OF ACRONYMS

A.I.D.	Agency for International Development
AASCARR	American Association of State Colleges of Ariculture and Renewable Resources
AASCU	American Association of State Colleges and Universities
BIFAD	Board of International Food and Agricultural Development
BIFADEC	Board for International Food and Agricultural Development and Economic Cooperation
CGIAR	Consultive Group for International Agricultural Research
CICA	Competition in Contracting Act
CID	Consortium for International Development
CRSP	Collaborative Research Support Program
GAO	General Accounting Office
HBCUs	Historically Black Colleges and Universities
IARCs	International Agricultural Research Centers
INTSOY	International Soybean Center
JCARD	Joint Committee on Agricultural Research and Development
JCC	Joint Career Corps
JMOUs	Joint Memoranda of Understanding
MOUs	Memoranda of Understanding
OICD	Office of International Cooperation and Development
PVOs	Private Voluntary Organizations
USDA	U.S. Department of Agriculture

EXECUTIVE SUMMARY

During 1990, change marked the Title XII partnership of U.S. universities and the Agency for International Development (A.I.D.). There were changes in the charter, name, membership and support staff of the presidentially-appointed board responsible for implementing Title XII legislation. There also were changes in the structure and programming mechanisms in A.I.D. by which activities and relations with the university community are developed and implemented.

This report discusses those changes, as well as continuing and new efforts to mobilize university resources in response to the Title XII mandate, promote collaboration and cooperation in international agricultural research, support human capital and institutional development in developing countries and address opportunities and challenges.

The Board for International Food and Agricultural Development and Economic Cooperation

Charter Revision. A new, revised charter changed the name and scope of the Board. Added to its name was "and Economic Cooperation" to reflect the Board's expanded purview to include all aspects of economic development and cooperation and the fuller utilization of the capacity and resources of U.S. higher education institutions. In addition, five new Board members, including a new chairman, were appointed, as was a new executive director of the BIFADEC Support Staff and of the new Agency Center for University Cooperation in Development.

Changing Title XII Partnership. There also were changes in the structure and programming mechanisms within A.I.D. by which activities and relations with the U.S. university community are developed and implemented. A new Agency Center for University Cooperation in Development seeks to optimize the use in international development programs of the extraordinary national asset which is the U.S. college and university system. The Center will focus on building on the basic Title XII partnership even wider and stronger partnerships by matching university interests and resources with A.I.D. programs. Concurrent with the creation of the Center has been the design of a University Development Linkages program. Reflecting the maturing of A.I.D.-university relationships, it is seen as a successor to earlier strengthening, matching and program support grant programs.

JCARD. During the reporting period, the Joint Committee on Agricultural Research and Development acquired a new chairman, completed a comprehensive study of A.I.D.'s contracting and procurement of university services and explored the possibility of using the Collaborative Research Support Program (CRSP) mode, which has been so successful in agriculture, in other U.S. development assistance programming. The JCARD also has been responsive to A.I.D.'s requests to assist with the conceptualization of a possible new CRSP in sustainable agriculture

and natural resources management and with integrating existing and developing new activities in the CRSP mode in integrated pest management, postharvest losses, tropical soils management and nutrition.

Task Force on Development Assistance and Cooperation. As a result of its deliberations throughout the reporting period, the Task Force has concluded that there needs to be a continued emphasis on agriculture, the development of human capital in all its forms and the development of institutions and other infrastructure. Institutional changes in A.I.D. and better A.I.D. linkages with the private sector and among business, higher education and private and voluntary organizations are expected to be recommended.

Annual Regional Seminars. For the first time in the fifteen-year history of Title XII, members of the Congressional delegations of two states participated in the annual Title XII regional seminars. They stressed U.S. interdependence with the rest of the world and the importance of preparing to live and work in a global society. The seminars were convened in Jefferson City, MO, and Raleigh, NC.

Sustainable Agriculture. Six issues of a new bimonthly newsletter, "Sustainable Agriculture Information Exchange," were published during the reporting period. A growing worldwide readership has attested to the need for and merits of this publication, which helps link the "many islands of interest and activity on behalf of sustainable agriculture in the U.S. and around the world."

Other Activities. The Budget Panel reviewed A.I.D.'s proposed budget for FY 1992. Its report through the BIFADEC to the A.I.D. Administrator contained eight principal observations and recommendations. The BIFADEC Support Staff helped facilitate and participated in meetings on degree equivalency in the U.S. and Canada with officials of a francophone Africa organization, CAMES, whose review of degree programs and faculty credentials provides a basis for institutional decisions by ministries, universities, research institutes and others in the fifteen African countries which are members of CAMES.

Mobilizing University Resources in Response To the Title XII Mandate

Memoranda of Understanding. During the reporting period Alabama A&M University became the first 1890 institution to become involved in thesis research with an international agricultural research center. The agreement with the International Institute of Tropical Agriculture (IITA) provides the means of introducing young American students and faculty into the mainstream of international agricultural research. An analytical framework for evaluating agricultural research and extension programs was developed this past year. The framework developed by the

University of Illinois is being used by general major international assistance agencies: International Fund for Agricultural Development, Food and Agriculture Organization, United Nations Development Program and International Service for National Agricultural Research.

University Development Linkage Program. A.I.D.'s Bureau for Science and Technology held a series of three forums across the United States (in Washington, DC, St. Louis, MO, and San Diego, CA) to obtain the participation of U.S. higher education institutions in the design of the University Development Linkages Program. The presidents of more than 250 of those institutions, representing a cross-section of degree-granting colleges and universities, including current recipients of A.I.D. contracts, were invited, and 164 of those institutions were represented by 214 people. (Among the total participants were 30 representatives from A.I.D. who served as resource persons in one or more of the forums.) In response to an evaluation question at the end of each forum, 69% indicated that their universities probably and 30% possibly would submit linkages proposals. The University Development Linkages Program will begin in fiscal year 1991.

The Joint Career Corps. The Joint Career Corps Program began in 1983 as a mutual, long-term undertaking by A.I.D. and universities through career commitments of personnel. During 1990 one university specialist was assigned to USAID/Pakistan and one A.I.D. officer was assigned to Oregon State University. Since 1983, 20 university specialists have had overseas assignments providing approximately 37 person-years of service in 15 A.I.D.-eligible countries.

Research Grants to Historically Black Colleges and Universities. Since its establishment in 1984, the Historically Black Colleges and Universities (HBCUs) Research Program has increased the participation of researchers from HBCUs in A.I.D.-financed research activities. In 1990, 11 new activities, costing \$840,000, were added, making a total of \$5.6 million which has funded 62 agricultural research activities. Nearly 40 articles have been published in referenced journals and seven master- and doctor-level theses have been prepared.

Collaboration and Cooperation in International Agricultural Research

Collaborative Research Support Programs. The Collaborative Research Support Programs have resulted in significant breakthroughs which overcome major worldwide constraints to sustainable food production. Some of the results include: The identification of sorghum germplasm which are resistant to striga, a parasitic weed which reduces sorghum production, the identification and utilization of clay to remove aflatoxin in contaminated crude peanut oil and the design of a low-technology solar heater which kills all stages of the cowpea weevil.

Centrally Funded Research Programs. The University of Hawaii has developed an approach for exploring sustainability and productivity of agroecosystems. Tested world-wide, the approach proved to be cost-effective, convenient and timely. This approach provides policy, program and practice options to decision makers. The University of Hawaii has also improved biological nitrogen fixation which enables small-scale farmers in tropical countries to increase yields of legume crops and trees for high protein food, low-cost biofertilizer, income and sustainable agricultural systems.

International Agricultural Research Centers. In FY 1990, A.I.D. provided 18% of the core support to the international agricultural research centers (IARCs). The core funding permits mutual transfer of knowledge and technology which is of benefit to the IARCs, developing countries and the United States. The knowledge exchange is fostered by mutually beneficial sabbatical leaves, graduate student exchange programs, advisory committees, the scientific liaison officers review program and other scientific board and trustee meetings. The widely-adopted high yielding semi-dwarf wheat and rice varieties are examples of knowledge exchanges which have benefitted the United States and the developing countries.

Institution Building in Developing Countries

Participant Training. The number of participants in the United States has grown dramatically. In FY 1979, fewer than 6,000 participants were trained, of which 17% were women. In FY 1990, the number in training exceeded 19,000, of which 5,220 (27%) were women. Academic training in the U.S. accounted for 49% of all participants, while technical training constituted 51%. Approximately 9.5% of all participants were enrolled in Ph.D. programs, 19% in master's programs, and 21% in undergraduate programs. The heaviest concentration of participants related to private sector development (24%), agriculture (23%), public administration (23%), and health and family planning (9%). A.I.D. participants are trained in almost every state and at over 1,000 facilities, including over 600 four-year colleges and universities and over 100 community colleges.

Expanding Partnership

The significant changes which occurred in the BIFADEC, the Title XII community, the larger community of U.S. higher education and in A.I.D. during 1990 have positioned all concerned to enter into an expanded and revitalized partnership. This expanded partnership will be outlined by a new BIFADEC Board and the new Agency Center for University Cooperation in Development and the U.S. higher education community.

SECTION I

THE BOARD FOR INTERNATIONAL FOOD AND AGRICULTURAL DEVELOPMENT AND ECONOMIC COOPERATION

A new, revised charter changed the name and scope of the Board for International Food and Agricultural Development (BIFAD) and created the Board for International Food and Agricultural Development and Economic Cooperation (BIFADEC).

Created in 1975 as advisor to the A.I.D. Administrator by Title XII of the Foreign Assistance Act of 1961, as amended, the BIFAD was concerned largely with agriculture, food and related matters of development. The new charter expands the Board's purview to include all aspects of economic development and cooperation, thereby permitting the fuller utilization of the faculty and staff resources and institutional capacity of U.S. higher education institutions. Placing its activities in the context of overall economic and social development makes the Board's advice on food and agricultural development even more relevant and effective.

The presidentially-appointed Board of seven members advises the A I.D. Administrator primarily on the effective involvement of universities in Agency programs, strengthening university capabilities and facilitating cooperation in research. By becoming more active in international development programs, it is felt, U.S. higher education institutions can increase their capacity to prepare both American and foreign students for life in an increasingly interdependent world.

In addition to a new charter and name, the BIFADEC has received five new members. Wales H. Madden, Jr., a Texas attorney, was appointed Chairman of the BIFADEC by President George Bush to succeed Dr. William E. Lavery, who served as Chairman from 1986-1990.

Dr. John Byrne, President of Oregon State University, and Dr. John DiBiaggio, President of Michigan State University, were appointed to succeed Dr. Jean Ruley Kearns and Dr. Hugh O. LaBounty, respectively. Christopher Hicks, a Washington, DC, attorney, was appointed to complete the term of Mrs. Gwendolyn King, who resigned when she became Commissioner of the Social Security Administration. Dr. Wendell Rayburn, President of Lincoln University in Missouri, was reappointed in his own right, following his two-year service on the Board completing the unexpired term of Ambassador Leonard Spearman. Drs. Byrne, DiBiaggio and Rayburn are presidents of Title XII institutions, all of which have been very active in Title XII and other international development programs.

Other members of the Board are: The Honorable Paul Findley of Jacksonville, Illinois, co-author of the Title XII legislation when he was a Congressman, and Dr. Leo Walsh, Dean and Director

of the College of Agriculture of the University of Wisconsin at Madison, an active Title XII institution.

There were changes also in the BIFADEC Support Staff. Dr. Lynn Pesson of Louisiana State University retired as Executive Director in October. He was succeeded by Dr. Ralph Smuckler, Consultant for special international projects to the President of Michigan State University, following a national search and recommendation to the A.I.D. Administrator by the BIFADEC. Dr. Smuckler's rich background of experience in international development includes, inter alia, being dean and assistant to the president for international studies and programs at Michigan State University for 22 years. Dr. Smuckler serves as Executive Director of A.I.D.'s new Center for University Cooperation in Development and also as a deputy assistant administrator in the Bureau for Science and Technology. The new Deputy Director of the BIFADEC Support Staff is Dr. C. Stuart Callison, a senior foreign service officer with 16 years of experience in A.I.D. Prior to his joining the staff in April 1990, he served as a deputy associate assistant administrator in A.I.D.'s Bureau for Program and Policy Coordination. Dr. Callison fills the vacancy left by the retirement of Dr. E. Keys MacManus in November 1989.

The Changing Title XII Partnership

Parallel to the changes in the name, scope and personnel of the BIFADEC during 1990 and influenced by them were changes in the structure and programming mechanisms within A.I.D. by which activities and relations with the U.S. university community are developed and implemented.

The changes in A.I.D. were promoted by a number of factors, including the changes in the name and scope of the BIFADEC. The unsuccessful efforts in 1988 and 1989 to revise the foreign aid legislation included the notion of developing a center for the broader and more effective involvement of U.S. university resources in U.S. development assistance programs. The university center idea survived and continued to be developed in several interested quarters thereafter.

Changes were prompted also by recommendations from an interim evaluation of twelve Joint Memoranda of Understanding (JMOUs) and of the related Program Support Grants (PSGs) in agriculture and rural development between A.I.D. and 24 Title XII universities. (See the Title XII report to Congress, April 1990, pp. 7-9.) The evaluation report recommended, inter alia, that building on past experience, "AID should give early consideration to a new project design effort which more directly and clearly links university resources to LDC activities with verifiable output goals and measurable accomplishments." Among the seven explicit suggestions were the following: that A.I.D. should "focus on continuing noncontractual linkages between US. and developing country universities and institutions... remove the closed system of JMOUs, thereby

permitting consideration of the merits of proposals by other eligible universities... (and) encourage collaboration between universities and the private sector..."

Another factor which prompted the changes has been the increasing interest in the U.S. university community to broaden programs and curricula to include international dimensions, thereby providing students with an appreciation for and understanding of the interdependency of the world culturally, economically and socially.

These were some of the major factors which resulted in the creation of A.I.D.'s Center for University Cooperation in Development by A.I.D. Administrator Ronald W. Roskens. The BIFADEC participated in shaping the concept of the new Center and in delineating its functions and relationships in the Agency. The purpose of the Center is to optimize the use in international development programs of the extraordinary national asset which is the U.S. college and university system. Building on the Title XII partnership of U.S. universities and A I.D., the Center will focus on building even wider and stronger partnerships than have existed by matching university interests and resources with A.I.D. programs. The Center is to consolidate the existing BIFADEC Support Staff and the Office of Research and University Relations into a single organization in A.I.D.'s Bureau for Science and Technology. Dr. Smuckler is overseeing the consolidation of personnel and the structuring of the new Center.

Concurrent with the creation of the Center for University Cooperation in Development has been the design of a University Development Linkages program as one of the Center's first efforts. Consistent with the factors cited above which lay behind the creation of the Center and especially with the recommendations from the evaluation of the JMOU/PSG program, the new program is expected to enlarge the A.I.D.-university partnership towards more creative, productive and lasting linkages of mutual benefit between developing country and U.S. colleges and universities. (See further, pages 11 & 12, infra.)

The University Development Linkages program reflects the maturing of A.I.D.-university relationships, and is seen as a successor to the earlier Strengthening Grants, Matching Support Grants, and Single and Joint Memoranda of Understanding/Program Support Grants programs. Because of the program's potential effect on the MOU and JMOU/PSG programs and other actual and planned changes, the BIFADEC convened an informational workshop on A I.D.-university relations in conjunction with its 103rd meeting in December 1990. Following the workshop, the Board reaffirmed its endorsement of and support for the creation of the Agency Center for University Cooperation in Development, authorized the creation of a task force to assist with the definition of the Center's programmatic role, and urged sufficient funding of the proposed University Development Linkages program without jeopardizing the MOU and JMOU/PSG programs, until the latter were evaluated in the context of the new Center's program.

Joint Committee on Agricultural Research and Development

In keeping with the established practice of rotating the chairmanship between A.I.D. and the university community, Dr. Edward Price of Oregon State University succeeded Dr. William Furtick of A.I.D. as Chairman of the Joint Committee on Agricultural Research and Development (JCARD). Dr. David Bathrick of A.I.D. is the new vice-chairman, replacing Dr. Furtick, who retired.

During the reporting period, the JCARD completed a comprehensive study of A.I.D.'s contracting and procurement of university services; explored the possibility of using the Collaborative Research Support Program (CRSP) mode, which has been so successful in agriculture, in other U.S. development assistance programming, involving Title XII universities, including institutional development in developing countries; and participated in a number of other activities at A.I.D.'s request.

The year-long study of A.I.D.'s contracting and procurement of university services by a special subcommittee of the JCARD was prompted by the continuing decline in the volume of Title XII projects. The decline had been noted in the report of the General Accounting Office in April 1989, and the subcommittee looked into the possible relationship of A.I.D.'s contracting and procurement system to this trend. Among the factors identified as contributing to the decline were the following: (1) at their conceptualization, fewer projects are being identified for university participation; (2) there is uneven access to Requests for Proposals (RFPs); and (3) there is a lack of external peer evaluations at all levels of A.I.D.'s system of project development. The JCARD made recommendations to the BIFAD and to A.I.D. for improving A.I.D.'s system of obtaining university services.

The JCARD has been actively involved in planning for a program in sustainable agriculture and natural resources management (SANREM). A special JCARD subcommittee has participated in A.I.D.-sponsored conferences organized by the National Research Council to conceptualize the nature and scope of a possible Collaborative Research Support Program.

The JCARD reviewed the Nutrition CRSP for possible continued funding to plan a follow-on, five-year program to expand the use of the methodology developed, identify nutritional benefits that can result from appropriate food policies and develop ways of integrating elements of the Nutrition CRSP with activities of the ongoing and proposed CRSPs.

The JCARD also has been responsive to A.I.D.'s request to review activities in several fields, with a view to integrating existing and developing new activities in the CRSP mode. Among the considerations are the consolidation of related activities into two new CRSPs, in integrated pest

management and postharvest losses; the integration of several ongoing activities into an expanded scope for the existing Tropical Soils Management CRSP; and, where appropriate, inter-CRSP coordination and cooperation, especially with the proposed SANREM CRSP.

Task Force on Development Assistance and Cooperation

Considerable progress has been made by the BIFADEC Task Force on Development Assistance and Cooperation during the reporting period. Earlier known as the Task Force on Agricultural Development and Cooperation and also the Agriculture 2000 Task Force, the group expected to make a final report to the Board in April 1991 and to convene a national conference in June.

The Task Force recognized early in its deliberations a need for a new paradigm of foreign assistance. Not only had foreign aid fallen into disrepair, but also and more importantly there had been significant changes in the international economy. The task force has concluded that there needs to be a continued emphasis on agriculture, the development of human capital in all its forms and the development of institutions and other infrastructure. The task force is expected to recommend institutional changes in A.I.D. and better A.I.D. linkages with the private sector and among business, higher education and private and voluntary organizations.

Dr. G. Edward Schuh, Dean of the Hubert Humphrey Institute for Public Affairs at the University of Minnesota, is Chairman of the Task Force. Other members are: Dr. Susanna B. Hecht, Professor of the Graduate School of Architecture and Urban Planning, University of California at Los Angeles; Dr. James Henson, Director of International Program Development, Washington State University, Dr. Uma Lele, Professor of Agricultural Economics, University of Florida; Dr. John Mellor, former Director of the International Food Policy Research Institute; and Dr. Donald Plucknett, Scientific Advisor, Consultative Group on International Agricultural Research. The work of the Task Force has been supported by a rather large advisory committee headed by Dr. William E. Lavery, former Chairman of the BIFAD, and among whose members are Congressman Douglas Bereuter (R, NE) and Senator Terry Sanford (D, NC) of the Congress of the United States.

Annual Regional Seminars

For the first time in the fifteen-year history of Title XII, members of the Congressional delegations of two states participated in the annual Title XII regional seminars. Senators Christopher S. Bond (R, MO) and Terry Sanford (D, NC) and Representative Ike Skelton (R, MO) addressed the seminars in their respective states.

The seminars, held annually in two geographical locations to bring together A.I.D. and Title XII university officials to discuss matters of common concern, were convened this year in Jefferson City, MO, on January 29-30 and Raleigh, NC, on February 5-6. They were hosted jointly by Lincoln University and the University of Minnesota in Jefferson City and by North Carolina State University and Florida A&M University in Raleigh.

In their luncheon and dinner speeches, the members of Congress stressed U.S. interdependence with the rest of the world and the importance of preparing to live and work in a global society. There were reports from both the central and regional bureaus in A.I.D., as well as from the BIFAD Ad Hoc Committee on Participant Training, the BIFAD Task Force on Development Assistance and Cooperation and the Debt for Development Foundation.

Procurement, a perennial topic of considerable interest at these seminars, was focussed on the findings of the JCARD Subcommittee on Contracting/Procurement, which produced a lively discussion of major issues.

The two seminars were attended by 190 representatives from 65 universities and A.I.D.

Sustainable Agriculture Newsletter

A bimonthly newsletter, "Sustainable Agriculture Information Exchange," was begun in January 1990, as a result of a BIFAD initiative. Six issues were published during the reporting period. The purpose of the newsletter was stated succinctly in the first issue:

There are many islands of interest and activity on behalf of sustainable agriculture in the U.S. and around the world. BIFAD wants to help connect these with the aim of building sustainable agriculture into an effective tool for international development. Traditionally, BIFAD has served as a link between A.I.D. and the academic community. As regards sustainable agriculture and natural resource management, we have expanded that traditional role to include other agencies of government, the PVO environmental community, and NGO development groups.

Attached to each issue has been a substantive paper on sustainable agriculture or a related subject by a specialist. Included have been speeches to national meetings and testimony before Congressional committees, as well as reprints of articles from professional journals.

A growing worldwide readership has attested to the need for and merits of this publication.

Other Activities

The BIFAD Budget Panel met several times during the reporting period to review the Agency's proposed budget for fiscal year 1992. Following Board review and endorsement, the Budget Panel's report was submitted to A.I.D. Administrator Ronald Roskens. In his transmittal letter, BIFAD Chairman Wales Madden recognized the budget constraints impinging on the Agency and the difficult program decisions to be made.

Among the eight principal observations and recommendations were the need to increase by 10% the overall budget allocation for agriculture and a proposal to increase the funding of the eight Collaborative Research Support Programs (CRSPs).

Degree equivalency between U.S. and Canadian universities and those in francophone Africa was the subject of meetings in the U.S. and Canada during the reporting period. The BIFAD Support Staff facilitated the visits of two officials from the Conseil Africain et Malagache pour L'Enseignement Superieur (CAMES) with officials in both countries.

CAMES is composed of fifteen member countries. It reviews degree programs and faculty credentials, and the recommendations provide a basis for institutional decisions by ministries, universities, research institutes and others.

In characterizing the similarities and differences in the U.S. and francophone systems, a principal issue involved the comparison of the U.S. master's degree and the francophone basic degree, the latter entailing a five-year program that includes a research project.

This was a joint venture with Canadian national and Quebec provincial officials, working toward a joint U.S.-Canadian position on the matter.

Statistical Abstract

Board. The Board held a total of six meetings during 1990. All meetings were convened in Washington, DC. The Board met on March 22 and 23, April 26 and 27, June 28 and 29, September 6 and 7, November 15 and 16 and December 19.

In addition to its regular meetings with the A.I.D. Administrator, the Board communicated with him formally and in writing more than two dozen times. Many of the communications conveyed Board recommendations or thinking on current items (see supra).

JCARD. The Joint Committee on Agricultural Research and Development, and its Subcommittee on Contracting and Procurement, under the chairmanship of Dr. Lawrence Apple (North Carolina

State University), met on a number of occasions, sometimes with A.I.D. officials, in completing its study on procurement of university services.

The Special Subcommittee on Research and Sustainable Agriculture, with Mortimer Neufville (University of Maryland, Eastern Shore) as chairman, met five times in 1990, including a teleconference on July 19. Other meetings were held in June, September, November and December in Washington, DC. The Subcommittee conferred with the National Research Council's planning group for the proposed Collaborative Research Support Program in sustainable agriculture on three of those occasions (in September, November and December).

Budget Panel. During 1990, the BIFAD Budget Panel held three two-day meetings in Washington, DC: February 26-27, May 21-22 and September 6-7. There also was an informal meeting in St. Louis, MO, on November 11 at the time of the annual meeting of the National Association of State Universities and Land Grant Colleges (NASULGC).

Title XII Institutions. Of the \$135.7 million of A.I.D. obligations with U.S. academic institutions during 1990, \$84.5 million were in obligations with the Title XII institutions. Included were obligations with historically black colleges and universities (HBCUs or "1890" institutions) amounting to just over \$9.0 million.

SECTION II

MOBILIZING UNIVERSITY RESOURCES IN RESPONSE TO THE TITLE XII MANDATE

One emphasis in the Title XII legislation is strengthening the capacity of U.S. institutions to help with development assistance programs. Continuing and building on the earlier experience of providing strengthening grants to universities under Section 211(d) of Title II of the Foreign Assistance Act of 1961 (which was repealed in 1978), several programs were initiated: single and joint Memoranda of Understanding (MOU), university Matching Support Grants program, the Joint Career Corps (JCC) program, and a program of small grants to historically black colleges and universities.

Memoranda of Understanding

Five single and 12 joint Memoranda of Understanding (MOUs) and a Matching Support Grants program have evolved from the experience with the Strengthening Grants program and in keeping with explicit reference to MOUs in the Title XII legislation. The MOUs provide the terms and conditions between the A.I.D. Administrator and the universities participating in Title XII programs and are supported with program grants from A.I.D. and matching university contributions.

In 1982 and 1983, single MOUs were initiated with Colorado State University, University of Florida, Purdue University, Utah State University and Washington State University. Beginning in 1984, joint MOUs (JMOUs) were initiated, which eventually paired 12 large, "1862" land grant universities with 12 historically black, "1890", land grant colleges and universities (HBCUs) as follows:

- Oregon State University and Tuskegee University
- Michigan State University and North Carolina A&T State University
- Kansas State University and Alabama A&M University
- Auburn University and the University of Arkansas at Pine Bluff
- Ohio State University and Fort Valley State College
- Texas A&M University and Prairie View A&M University
- University of Illinois and University of Maryland, Eastern Shore
- New Mexico State University and Tennessee State University
- Louisiana State University and Southern University
- North Carolina State University and Florida A&M University
- University of Wisconsin at Madison and Virginia State University
- University of Minnesota and Lincoln University in Missouri.

Some of the noteworthy accomplishments of the single MOUs have come from Utah State University (USU) and Washington State University (WSU).

The training achievements of USU's International Irrigation Center on campus and abroad are significant and commendable. For example, the innovative telecommunications project that links USU's faculty and staff through lectures and conferences to animal science institutions in Ecuador has received USAID support for an international communication delivery system. Plans are to purchase and install a satellite uplink as a part of the communication network. This can enhance and upgrade USU's educational services to USAID projects throughout the world and help revolutionize certain types of technical assistance.

The fine record of "internationalizing WSU" has gained national recognition for the WSU International Program Office. With initial A.I.D. support, WSU has provided national leadership through workshops and seminars on internationalizing U.S. universities, and it has collected useful information on the impact of development assistance projects and activities on U.S. universities.

The accomplishments of the joint MOUs also are noteworthy. For example, Ohio State University (OSU) has a manpower development project in Uganda with Makerere University. Independent of, but complementary to the project, OSU has negotiated and signed a special memorandum of understanding with Makerere to establish an ongoing relationship between the two institutions which will continue after the end of the manpower project. This program has considerable potential for sustaining mutually productive relations between the two universities. Activities under the special MOU include stimulation of collaborative research and interchange of faculty and graduate students.

Activities between OSU and Fort Valley State College (FVSC) are progressing well. OSU and FVSC have faculty working in projects in Uganda and Dominican Republic. One FVSC faculty member is on a long-term assignment in Uganda at Makerere University. In addition, FVSC has provided significant support to 17 scholars of the Salvadoran Training project which is part the Central American Peace Scholarship program.

Alabama A&M University is the first 1890 institution to become involved in thesis research with an international agricultural research center. This MOU agreement with International Institute of Tropical Agriculture (IITA) provides the means of introducing American students and faculty into the mainstream of international agricultural research.

Case studies funded by the MOU program were conducted through the USAID-University of Illinois Cooperative Agreement on Technology Development and Transfer Systems in Agriculture to build upon a knowledge of systems. A resulting analytical framework for evaluating

agricultural research and extension programs is being used by several major international assistance agencies: International Fund Agricultural Development (IFAD), Food and Agriculture Organization (FAO), United Nations Development Program (UNDP) and International Service for National Agricultural Research (ISNAR). The MOU funds enabled the International Soybean Center (INTSOY), located at Illinois and supported in part by A.I.D., to begin to extend its soybean utilization procedures and technologies into West Africa in a collaborative mode with Cameroon, Ghana, Ivory Coast and Nigeria and FAO and IITA.

The MOU funding has been distributed broadly within North Carolina State University (NCSU) and gained the participation of faculty and staff in soils, field and vegetable crops, livestock, forestry, entomology, economics, fisheries, engineering, foreign languages, agricultural extension and the office of the Provost in activities on campus and in at least ten countries in Africa (4), Asia (1), and Central and South America (5). This MOU is maturing and is becoming an effective interinstitutional program. An interesting and potentially rewarding activity to NCSU and its collaborators in Africa and A.I.D. is the NCSU African-American Student Support group operating out of the Provost's office.

University Development Linkage Program

Dr. Ronald W. Roskens, A.I.D. Administrator has stated:

The U.S. college and university system is an extraordinary national asset which can be of significant benefit to the developing world if properly encouraged and focused. A.I.D. needs to take full advantage of the development-related resources available in the university community. Many U.S. universities have already concluded that they must internationalize their programs. This presents extraordinary opportunities for productive collaboration between A.I.D. and U.S. colleges and universities.

In order to take fuller advantage of the development-related resources in the university community, A.I.D. has proposed a University Development Linkages program. The program would support direct ties between U.S. and developing country higher education institutions, enabling those institutions to meet more effectively the development needs of their societies on a sustainable basis.

Among the considerations which prompted this program are the following:

1. U.S. colleges and universities are becoming international institutions providing education, research and extension services relevant to addressing global issues.

2. Developing country institutions of higher education and the societies they serve can be strengthened significantly through institutional collaboration with U.S. colleges and universities.
3. A program which encourages that collaborative process in developing countries can enhance substantially the mission of A.I.D.
4. A program must consider the needs and goals of both U.S. and developing country institutions. They must share a commitment to the program's objectives and both must share in the benefits. Therefore, the program must be designed in a collaborative manner and the results must be a partnership, if the commitment is to be sustainable.

A.I.D.'s Bureau for Science and Technology held a series of three forums across the United States (in Washington, DC, St. Louis, MO, and San Diego, CA) to obtain the participation of U.S. higher education institutions in the design of the project. The presidents of more than 250 of those institutions, representing a cross-section of degree-granting colleges and universities, including current recipients of A.I.D. contracts, were invited, and 164 of those institutions were represented by 214 people. (Among the total participants were 30 representatives from A.I.D. who served as resource persons in one or more of the forums.)

In response to an evaluation question at the end of each forum, 69% indicated that their universities probably and 30% possibly would submit linkages proposals. The University Development Linkages Program will begin in fiscal year 1991.

Matching Support Grants

The Matching Support Grant program was established in 1986 as a competitive program open to universities which had met successfully the objectives of the Strengthening Grants program and did not have any other Title XII university support grant. During the immediately preceding three years, candidate universities had to have provided A.I.D. with a minimum average of two fulltime equivalents of overseas technical services to Title XII-related projects by their own regular employees. Their proposals provided for a dollar-for-dollar match of funding by the universities and A.I.D. Three-year grants were given to seven universities and two universities received one-year and two-year grants, respectively. During 1990 no new grants were awarded. The last year of funding this program is 1991.

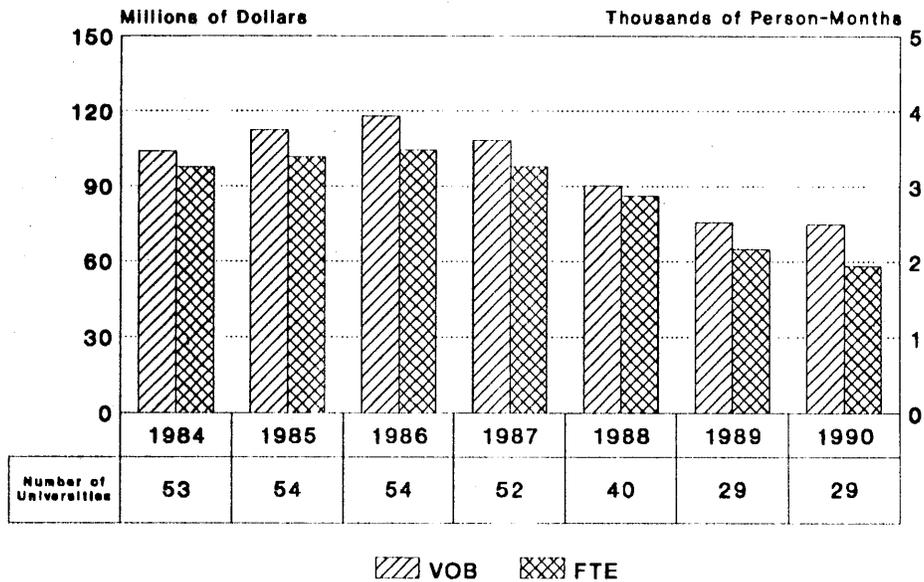
Two sets of data from these universities help quantify the degree of their involvement by volume of business (actual contract expenditures) and fulltime equivalents (people in overseas assignments), thereby providing a measure of the extent to which the strengthened capacity of

Title XII universities (as a result of the foregoing and other programs) actually is being employed in A.I.D. development assistance programs.

With a reduction in the Agency's agriculture and nutrition account, procurement regulations requiring more full and open procurement and an increase in program (in contrast to project) assistance, the field missions have not been identifying Title XII projects. They, are finding increasingly fewer opportunities for using the resources and strengthened capacity of Title XII universities. Therefore, the decline in the utilization of Title XII institutions, which was noted in last year's report, has continued (see figure 1).

Figure 1

**Title XII Universities Report on
Volume of Business and
Full Time Equivalents**



AID
BAT/RUR
4/81

The Joint Career Corps

The Joint Career Corps (JCC) program began in 1983 as a mutual, long-term undertaking by A.I.D. and universities through career commitments of their personnel. American university expertise is provided to A.I.D. field missions for two- and three-year assignments, and A.I.D. specialists spend similar periods of time working in the university community.

During 1990 one university specialist was assigned to USAID/Pakistan and one A.I.D. officer was assigned to Oregon State University under this program.

Since 1983, 20 university specialists have had overseas assignments in 15 A.I.D.-eligible countries, providing approximately 37 person-years of service. Eight are still on assignments. Only two of the nine A.I.D. employees on so-called "reverse JCC" appointments are currently at universities.

Research Grants to Historically Black Colleges and Universities

Since its establishment in 1984, the HBCU Research program has led to increasing the participation of researchers from historically black colleges and universities (HBCUs) in A.I.D.-financed research activities. Projects and activities, individually costing up to \$100,000, are encouraged. The program is responsive to the Title XII mandate, provisions of Executive Order 12667 and the Gray Amendment, which encourage government agencies to provide greater procurement opportunities for HBCUs.

A total of \$5.6 million has funded 62 agricultural research projects through fiscal year 1990. Of those totals, 11 new projects, costing \$840,000, were added in 1990. These were projects based in Belize, Dominican Republic, Rwanda, Thailand and the U.S. See further, Table 1 (page 15) and Table 2 (page 16) for more detailed information on the number and location of the projects and the HBCUs which are involved.

Nearly 40 articles have been published in referenced journals and seven master-level and doctor-level theses have been produced as some of the results of these projects.

In addition to this program, the HBCUs participate in the JMOUs (see pp. 9-11) and the CRSPs (see pp. 18-20).

Table 1

HBCU Research Grants in Agriculture: Number, Cost and Principal Location of Research Fiscal Years 1984 - 1990		
Location	Number	Cost
Africa	22	2,079,606
Africa General	1	99,989
Burkina Faso	2	131,585
Ghana	6	583,389
Kenya	1	99,591
Niger	1	99,432
Nigeria	3	284,947
Rwanda	3	295,689
Senegal	2	187,824
Sierra Leone	1	99,679
Zambia	1	98,981
Zimbabwe	1	98,500
Asia/Near East	6	593,779
India	1	99,360
Indonesia	1	99,986
Nepal	1	99,986
Philippines	2	195,818
Thailand	1	98,629
Caribbean	18	1,563,078
Barbados	3	276,684
Belize	3	291,167
Caribbean General	2	188,942
Dominican Republic	4	347,784
Haiti	1	100,000
Jamaica	5	358,501
Latin America	3	251,502
Costa Rica	1	54,800
Latin American General	1	97,802
Peru	1	98,900
United States	13	\$1,106,568
TOTAL	62	\$5,594,533

Table 2

HBCU Research Grants in Agriculture: Number and Cost by Institution Fiscal Years 1984 - 1990		
Institution	Number	Cost
Alabama A & M University	2	\$185,985
University of Arkansas at Pine Bluff	3	281,074
Clark Atlanta University	3	241,538
Benedict College	1	88,942
Florida A & M University	7	641,713
Fort Valley State College	4	397,206
Howard University	2	200,000
Langston University	1	100,000
Lincoln University	6	481,330
University of Maryland, Eastern Shore	1	88,127
Mississippi Valley State University	2	90,511
Morehouse College	2	199,338
Morgan State University	1	54,800
North Carolina A & T State University	2	196,598
Philander Smith College	1	82,661
Prairie View A & M University	4	399,872
Selma University	1	99,809
South Carolina State College	3	295,804
Southern University	1	99,679
Tennessee State University	3	253,334
Tuskegee University	10	920,645
Virginia State University	2	195,567
TOTAL	62	\$5,594,533

American Association of State Colleges and Universities

In 1987 A.I.D. entered a cooperative agreement with the American Association of State Colleges and Universities (AASCU) to foster the utilization of the resources of AASCU and American Association of State Colleges of Agriculture and Renewable Resources (AASCARR) members in international development assistance programs.

The decline in opportunities and the attitudinal and institutional barriers erected by some A.I.D. staff in using university resources, as noted earlier, have limited also the involvement of the resources of AASCU and AASCARR colleges and universities in A.I.D. programming. Only some short-term A.I.D. assignments have been made through the fellows program.

The cooperative agreement was evaluated in 1990. The evaluation report indicated that it is becoming much more difficult for smaller and less experienced universities to "get a piece of the action." The report also suggested a larger context than the specific objectives of the linkage program for judging the program, as follows:

It is a much longer term (sic) context that goes beyond the A.I.D. of today and focuses on an AASCU university of the future in a changing and increasing interdependent world, striving to serve its students, its state and its nation to live and work in that global economy. In that context, the larger challenge for the university is to develop a strategy to serve its clientele of the future. That strategy will likely involve internationalized curricula, expanded public service beyond political boundaries, and faculty that understand the world they are preparing students to live in.

To facilitate this process, the cooperative agreement has been adjusted to extend beyond agriculture and natural resources, in order to utilize more fully the diverse development-related resources of AASCU and AASCARR member institutions.

SECTION III

COLLABORATION AND COOPERATION IN INTERNATIONAL AGRICULTURAL RESEARCH

The Title XII legislation encourages collaboration and cooperation in international agricultural research. Toward that end, the Title XII partnership has supported the Collaborative Research Support Program (CRSP), international agricultural research centers and centrally-funded research and other research activities.

Collaborative Research Support Programs

The Collaborative Research Support Programs (CRSPs), which were created in response to Title XII of the Foreign Assistance Act of 1961, as amended, are mutually beneficial, long-term, multidisciplinary research and training initiatives which are carried out collaboratively between U.S. and developing country scientists in many scientific disciplines which contribute to development. Title XII universities have been key actors in planning, implementing and evaluating the CRSPs.

In addition to technological advances, institutional growth and human resource development, the CRSPs have resulted in significant breakthroughs which overcome major worldwide constraints to sustainable food production. Among the results are the following:

- The parasitic weed, striga, is one of the major constraints to sorghum production in Sub-Sahel Africa. The Sorghum/Millet CRSP scientists have discovered and identified the germination physiology of the striga and identified sorghum germplasm devoid of the striga seed stimulant and resistant to striga. Collaborators include: University of Nebraska with Kansas State University, University of Kentucky, Mississippi State University, University of Nebraska, Purdue University, Texas A&M University and nine institutions in eight developing countries.
- Research in grazing schemes for sheep under rubber trees in Sumatra reduced weed infestation as well as the use and cost of herbicides. The research conducted by scientists under the Small Ruminant CRSP now focuses on the processed rubber seeds, a long wasted source of energy, as a supplement for the sheep. Collaborators include: University of California/Davis with Colorado State University, University of Missouri, Montana State University, North Carolina State University, Texas A&M University, Texas Tech University, Utah State University, Washington State University, Winrock International and four overseas institutions.

- Eight years of collaborative efforts among seven Title XII universities in the Pond Dynamics/Aquaculture CRSP benefit developing country farmers through the development of low-input pond management strategies that permit high production levels of fish on a sustainable basis. Collaborators include: Oregon State University with Auburn University, University of California/Davis, University of Michigan, Michigan State University, University of Hawaii, University of Arkansas at Pine Bluff and four developing country institutions.

- Aflatoxin, the major problem affecting the safe consumption of peanut and other food and feed grains worldwide, has been a principal focus of the Peanut CRSP. Clay from arid regions of Africa was found to possess an electrolytic charge opposite from that of aflatoxin. Using the clay to repel the molecules of the fungi proved successful. Now this clay, added to contaminated crude peanut oil in Senegal and Texas, removes essentially all of the aflatoxin. Added to animal rations made with contaminated peanut meal, the clay blocks the metabolism of the aflatoxin, which then passes safely from the animal. Collaborators include: University of Georgia with Alabama A&M University, University of Georgia, North Carolina State University, Texas A&M University and fourteen host country and eight international institutions.

- Agricultural development in the humid tropics requires sustainable agricultural systems without amelioration of the soil while minimizing rainforest intrusion by resource poor farmers. Research under the Soil Management CRSP demonstrated that the tropical kudzu reduces soil degradation and tillage needs, minimizes weed control costs, and provides an on-farm nitrogen source. Collaborators include: North Carolina State University with Cornell University, Texas A&M University, University of Hawaii, and six host country and eleven international institutions.

- The cowpea weevil causes post-harvest storage losses in West Africa approaching \$50 million annually with 50 percent of stored grain lost in just three months. Researchers found that exposing cowpeas to temperatures of 57 degrees C. for one hour killed all the stages of the cowpea weevil in the seed. The Bean/Cowpea CRSP designed an effective, cheap, easily built, low-technology solar heater for use of low-resource farmers in developing nations for cowpeas and other crops with insect storage problems. Collaborators include: Michigan State University with Boyce Thompson Institute, Cornell University, Michigan State University, Purdue University, University of California/Davis, University of California/Riverside, University of Georgia, University of Minnesota, University of Nebraska/Lincoln, University of Wisconsin, University of Puerto Rico, Washington State University and twelve overseas institutions.

- Computer models, expert systems and sampling methodologies were developed for tropical multi-species fisheries under the Fisheries/Stock Assessment CRSP. Regional courses in fisheries assessment methods were offered, and special technical assistance was provided to selected countries and missions. Collaborators include: University of Maryland/College Park with University of Rhode Island, University of Washington, University of Miami, University of Delaware and six overseas institutions.
- A set of five key indicators and new methodologies for assessing households at risk of malnutrition have been derived from the comprehensive study of the Nutrition CRSP. This nutrition assessment system makes possible more timely and targeted nutrition interventions at the household/family level, not only to improve family nutrition, but also to enhance household performance and productivity. Collaborators include: Purdue University with University of Arizona, University of California at Berkeley, University of California at Los Angeles, University of Connecticut, University of Kansas, and three overseas institutions.

Centrally-funded Research Programs

The majority of A.I.D.'s centrally-funded agricultural research programs involve Title XII institutions in their development and implementation. The following results are illustrative:

- A consortium of U.S. universities, led by the University of Maryland/College Park and with funding from several donors, conducted a workshop in Jamaica on the biological control of pests as a mechanism for sharing current knowledge and future developments. This resulted in the founding of a Caribbean network for biological control of pests. The workshop will be duplicated in Spanish in Central America in 1991.
- Aquaculture management in most developing countries is being carried out by graduates of Auburn University through its 20-year-old A.I.D.-sponsored fisheries training program. Nutrition has been enhanced immeasurably through increased production of fish, by far the most important contributor of animal protein in developing country diets.
- Research led by the University of Hawaii to improve biological nitrogen fixation through biotechnology enables small-scale farmers in tropical countries to increase yields of legume crops and trees for high protein food, low-cost biofertilizer, income and sustainable agricultural systems.

- A new approach for exploring sustainability and productivity of agroecosystems was developed by the University of Hawaii. Tested world-wide, the approach proved to be cost-effective, convenient and timely. It will provide options on policies, programs and practices to the decision makers.
- Expanded research at the University of Illinois/Urbana, in collaboration with U.S. equipment manufacturers, involves the processing of whole soybeans for human food and animal feed to meet developing and developed world needs. The project has opened markets for U.S.-made equipment, while providing a basis for new food and feed industries which can lead to improved human and animal nutrition.
- A long-term project at the University of Rhode Island involves marine living aquatic resources, including the environmental, economic, anthropological and biological sectors. It has provided long-term group training in Oman and long-term degree training for the Philippines, Ecuador, Thailand, Indonesia, the Philippines, Oman and the South Pacific.
- Nearly 13,000 new spring and winter wheat crosses for genetic diversity were accomplished over the life of a project at Oregon State University. The enhanced germplasm out-yielded local varieties in 39 countries by an average of 38 percent. This translates into an increase of wheat production worth \$10.3 billion annually, with the greatest gains demonstrated by developing countries.
- A long-term project at Kansas State University has become the repository of food and feed grain storage subject material and training of developing country and U.S. public and private sector leaders. During 1990 the project-funded Food and Feed Grains Institute trained individuals from 15 countries in grain storage and marketing and from 10 countries in agro-industrial projects, and 13 students from Pakistan in grain storage management and 25 A.I.D. employees in food aid management.
- Mississippi State University is recognized as the center for developing country seed technology as a result of a long-term research and teaching project in seed technology. In 1990, 38 students from regional projects in Africa, developing countries, U.S. universities and the World Bank turned to MSU for graduate degree training. Since the inception of the seed technology project in 1958, 312 scientists from 55 countries have received degree training at MSU.
- A project, which focusses on special constraints of the international agricultural research centers (IARCs), links Title XII universities and research stations of the Agricultural Research Service of the U.S. Department of Agriculture. Results from the

34 small grants to 28 institutions have proved to be of value to the U.S. researchers for their domestic research programs, as well as to the IARCs. Using genetic engineering techniques, researchers transferred disease resistance from wild species to commercial tomatoes varieties, developed detection markers for several virus strains in several plants and developed a method to test and produce virus-free potato and sweet potato plants.

- The results of a project applying new biotechnologies to develop recombinant vaccines and diagnostics for the control and detection to two blood-borne cattle diseases (anaplasmosis and babesiosis) have been patented, in order to obtain proprietary protection for commercial development. Diagnostics using the recombinant DNA approach are sensitive and specific for these diseases and easily employed in the field. The resulting vaccines are thermal stable. The project has been led by the University of Florida and has involved the University of Missouri and Washington State University.
- A Commodity Systems Assessment Methodology (CSAM) manual developed by the University of Idaho is a step-by-step guide for describing, evaluating and improving agricultural commodity systems within the agribusiness community. The CSAM is dependent on the knowledge and active input of local participants in the commodity system (farmers, traders, transporters and merchants) and the end result is a detailed understanding of the total commodity system and the identification of priority problems throughout the system.

Collaboration with USDA

In the Office of International Cooperation and Development of the U.S. Department of Agriculture (USDA/OICD), the Research and Scientific Exchanges Division manages two of the five components of the National Agriculture Research Program (NARP): collaborative research and new initiatives. The collaborative research component began in 1990 with sixteen U.S. scientists traveling to Egypt to finalize joint projects with their Egyptian counterparts. Seven of the projects are in the field of integrated pest management, while two others concentrate on plant and soil science and agricultural engineering.

Two of the pest management projects were funded in 1990 for the first of three years and involve five universities as follows:

Citrus Integrated Pest Management - University of Florida with the University of California, Riverside

Cotton Integrated Pest Management With Emphasis on Biological Control of Pink Bollworm - New Mexico State University, University of California, Riverside and Texas A&M University.

The remaining projects will be funded in fiscal year 1991 and will include more than 15 universities and the Agricultural Research Service of the USDA.

International Agricultural Research Centers

University research activities are strongly supported and complemented by a system of international agricultural research centers (IARCs) with close relationships with agricultural research programs in both the developed and developing nations. Thirteen of these centers are sponsored by the Consultative Group on International Agricultural Research (CGIAR). Other centers, while outside of the CGIAR system, are in contact with it; in fact, several of them are being considered for membership in the system.

A.I.D. is one of the principal supporters of the CGIAR system and provides funding in two ways: (1) core support for 12 of the 13 member centers and (2) special project funding generally for projects in individual countries. In FY 1990, A.I.D. provided \$40 million for core support (about 18% of the total); data are not yet available on special project funding (in 1989 it was \$18.8 million).

A.I.D. also provides core and special project funding for a number of the non-CGIAR centers. In FY 1990, A.I.D. supported seven centers with \$5.4 million core funding and \$7.8 million in special project funding.

The 19 IARCs supported by A.I.D. cover most of the major commodities and functional areas of importance to food and agriculture in the developing nations: grains, legumes, pasture crops, root crops, vegetables, bananas and plantains, livestock, and aquatic resources. Functional areas covered include: genetic resources, production (fertilizer, soil management, irrigation management, insect control), food and agricultural policy, and assistance to national agricultural research systems.

The IARCs are giving increased attention to sustainability of production and to preservation of natural resources. In the future, it is expected that the CGIAR system will evolve into two main types of centers: international commodity centers and eco-regional centers. A decision has been made to add forestry and agroforestry to the CGIAR system and specific proposals for implementation are being developed involving several approaches.

The U.S. research community is linked to the IARCs in several important ways. At the management level, all of the international centers have U.S. members on their boards and Americans are generally well represented in the senior administration of the centers. Staffs draw heavily on U.S. scientists and on specialists from other countries trained in the United States. In 1988, 17% of the trustees and 23% of the senior staff in the CGIAR system, were from the United States and Canada. In addition, many American scientists and graduate students spend sabbatical leaves or other lengthy periods of study at these centers. In turn, many IARC scientists spend sabbatical leaves at American universities and some have been employed by U.S. universities. Several of the CRSPs have IARC scientists on their advisory committees. A.I.D. has also established a program of Scientific Liaison Officers. Drawn from the American research community, these specialists spend about a week a year at most of the centers reviewing scientific and technical activities. All of this contributes to an immense amount of ongoing scientist-to-scientist interaction.

Thus, there is a significant mutual transfer of knowledge and technology which is of benefit to the IARCs, developing countries and the United States. While the main emphasis is on development of technologies for developing nations, the benefits to the scientific community and to agriculture in the U.S. and in other countries can be very significant. For example, the work of several IARCs on high-yielding semi-dwarf wheat and rice has been of major importance in the development of similar, and now widely-adopted varieties in the United States, as well as in developing and other developed countries.

SECTION IV

INSTITUTION BUILDING IN DEVELOPING COUNTRIES

Developing the human and institutional resources essential to improving and sustaining food production and overall agricultural development has been an integral part of the U.S. land-grant model of agricultural development which the Title XII legislation encouraged for use and adaptation in developing countries. The land grant model has included education and extension, which functions focus especially on building and strengthening needed institutional capacity and human resources skills.

Participant Training

The Participant Training program is the Agency's most visible response to human resource development. Many former U.S.-trained A.I.D. participants have risen to positions of national leadership in their countries and are now influential in shaping future development policies.

Following the Agency's commitment in 1982 to expand the Participant Training program, the number of participants in the United States has grown dramatically. In FY 1979, fewer than 6,000 participants were trained, of which 17% were women. In FY 1990, the number in training exceeded 19,000, of which 5,220 (27%) were women. Academic training in the U.S. accounted for 49% of all participants, while technical training constituted 51%. Approximately 9.5% of all participants were enrolled in Ph.D. programs, 19% in master's programs, and 21% in undergraduate programs. The heaviest concentration of participants related to private sector development (24%), agriculture (23%), public administration (23%), and health and family planning (9%). A.I.D. participants are trained in almost every state and at over 1,000 facilities, including over 600 four-year colleges and universities and over 100 community colleges.

The General Agricultural Training program (GATP) provides for training in agriculture and natural resources in the U.S. for approximately 450 academic and 500 non-academic A.I.D.-supported participants annually from about 70 developing countries. This centrally-funded program, which formerly was administered by the Office of International Cooperation and Development of the U.S. Department of Agriculture, has been administered since June 1990 by the Consortium for International Development (CID) on behalf of five regional consortia of universities representing 67 university members. [In addition to CID, there are the Northeast Council for International Development (NECID), the South East Consortium for International Development (SECID), the Midwest University Consortium for International Activities (MUCIA), and the Mid-America International Agricultural Consortium (MIAC).]

Through the GATP, trainees are provided administrative services, including placement, program development, counseling and support management. Academic placement of the trainees is guided by input from 11 subject matter placement panels. The members of the panels are educators and scientists with international experience drawn from institutions across the country. The trainees' programs are monitored and reported on to A.I.D.'s Office of International Training and to sponsoring field missions and other units in A.I.D.

CID utilizes a collaborative and decentralized model for administering the GATP. There is a small national liaison office in Washington, DC, for overall contract management and communication. Five regional offices provide administrative support to the trainees and maintain contact with training organizations (universities, agencies, private firms, etc.) in order to facilitate the placement, training, monitoring, and assessment of the participants and to provide services related to non-academic matters. The regional offices are located at the University of Rhode Island, Michigan State University, Lincoln University (Missouri), Iowa State University and Washington State University, all Title XII institutions.

The centrally-funded Training Evaluation and Support Services project provides vital links among missions, participants, the training providers and the American-host community. Project funds have been used to provide grants to the National Association for Foreign Student Affairs and to the National Council for National Visitors.

SECTION V

AN EXPANDED PARTNERSHIP

The significant changes which occurred in the BIFADEC, the Title XII community, the larger community of U.S. higher education and in A.I.D. during 1990 have positioned all concerned to enter into an expanded and revitalized partnership. While the Title XII partnership of U.S. universities and A.I.D. of the past fifteen years will continue as a primary concern of the BIFADEC, that special relationship will be included in a larger partnership which the new Agency Center for University Cooperation in Development will be developing between A.I.D. and the U.S. higher education community.

An immediate challenge is to delineate the role, purpose and structure of the University Center, in order to establish it quickly as a functioning office in A.I.D.'s Bureau for Science and Technology. The new Executive Director of the University Center will be guided not by the expectations of the A.I.D., but also by the aspirations and suggestions of the U.S. college and university community. Implementation of the proposed University Development Linkages program will be an initial and early effort to make concrete the reality of the University Center and of the expanded and revitalized partnership.

Another challenge is to implement the "and economic cooperation" which has been added to the name and charter of the Board. In seeking to identify with and advise on other sectors and the larger dimensions of economic development and cooperation, the Board will continue to be committed to its legislated responsibility to advise the A.I.D. Administrator on food production and agricultural development and matters related to famine prevention and freedom from hunger.

The role of capacity building, technology development and agricultural production in A.I.D.'s programming, the nature and deployment of its technical staff, and the increasingly fewer Title XII projects are matters of continuing concern to the Board. In that context, the report and recommendations of the BIFADEC Task Force on Development Assistance and Cooperation are expected to be instructive, as well as to inform the larger debate about the revitalization of U.S. foreign assistance.

The BIFADEC will continue to participate in the development of the proposed Collaborative Research Support Program in sustainable agriculture (SANREM CRSP) and in mobilizing support for defining and implementing a national agenda on sustainable agriculture.