

Chapter 1

Introduction

Problems of bureaucracy, distrust, and misunderstanding have beleaguered interactions between the U.S. Agency for International Development (AID) and U.S. universities since the inception of a formal partnership 40 years ago. In spite of these difficulties, some shared activities have proved successful, thus raising hopes that working relationships could be improved for both parties and that the ultimate beneficiaries—developing countries—could benefit from this relationship as originally intended. The question today is what types of relationships might encourage application of U.S. university intellectual resources to developing country problems.¹

This report focuses on university/AID interactions in activities directly related to agriculture, natural resources, and the environment.² Of these three areas, agriculture has received the lion's share of attention and funding over the years. However, agriculture only recently has been recognized as one aspect of natural resource use and management. Further, those natural resources that support and underpin agriculture are components of a larger system referred to generally as the "environment." Recognition of these concepts is evidenced by expanding legislative language (see box I-A), new AID initiatives, and by the growth in development assistance funding for natural resource and environment programs and projects.

One symptom of the strained relationship between AID and universities that periodically surfaces is the inappropriate application of science and technology to development problems. Matching technology to developing country problems in agriculture, natural resources, and the environment, and achieving the desired results is an extremely difficult task [111; see app. E], and failures commonly are highlighted in the media. However, focusing attention on flawed past development attempts probably is less constructive than addressing opportunities for expanding and improving use

of university resources to support foreign development assistance efforts.

New opportunities for U.S. university participation in development assistance maybe found in two major areas: expanding collaborative efforts to include organizations other than the U.S. Agency for International Development, and developing expertise in areas that support new development assistance initiatives. Still, lying behind any new endeavors will be an instructive history of problematic relationships between U.S. universities and AID.

HOW AID HAS USED UNIVERSITIES

The Agency for International Development and U.S. universities have collaborated for the past 40 years (see table I-1), and various contractual and program mechanisms have been designed to facilitate their work together (see box I-B). Since initiation of this collaborative association, AID efforts primarily have involved U.S. land-grant universities.

In 1975, Title XII of the Foreign Assistance Act, "Famine Prevention and Freedom from Hunger" (see app. A), focused the joint activities of AID and U.S. universities on food and agriculture-areas that universities working in development assistance traditionally emphasized. Passage of Title XII authorized long-term funding by AID to support continuing university involvement in development assistance. Title XII allowed universities increased input in assistance program planning, and promoted cooperative relationships between U.S. and developing country institutions [45].

Title XII also created the Board for International Food and Agricultural Development (BIFAD³), to serve as an intermediary between AID and universities. An important result of Title XII was reemphasis of U.S. university research aimed at increasing the

¹Information derived from an OTA workshop on U.S. Universities and Foreign Aid: Technical Assistance for Agriculture, Natural Resources, and Environment, Mar. 23 and 24, 1989, is incorporated in the text of this background paper as general information; participants have not been cited individually.

²For the purposes of this Background Paper, agriculture shall be defined to comprise all cropping and livestock management systems, including aquaculture, agroforestry, and forestry.

³Under the 1990 reorganization of AID, this organization was renamed the Board for International Food and Agricultural Development and Economic Cooperation (BIFADEC). However, it shall be referred to as BIFAD in this report.

Box I-A—Amendments to the Foreign Assistance Act Concerning International Environmental Protection and Natural Resource Management

Congressional concern with international environmental protection has increased markedly over the last decade. U.S. foreign assistance programs began incorporating environmental concerns in the late 1970s when a series of amendments to the Foreign Assistance Act defined the Agency for International Development's (AID) mandate in the area of environment and natural resource management. These amendments gave specific emphasis to promoting efforts to halt tropical deforestation and maintain biological diversity.

- 1977: Amended sec. 102 to add environment and natural resources to areas AID should address.
- 1977: Added new sec. 118 on "Environment and Natural Resources," authorizing AID to fortify "the capacity of less developed countries to protect and manage their environment and natural resources" and to "maintain and where possible restore the land, vegetation, water, wildlife, and other resources upon which depend economic growth and well-being, especially that of the poor."
- 1978: Amended sec. 118, requiring AID to carry out country studies in the developing world to identify natural resource problems and institutional mechanisms to solve them.
- 1978/79: Amended sec. 103 to emphasize forestry assistance, acknowledging that deforestation, with its attendant species loss, constitutes an impediment to meeting basic human needs in developing countries.
- 1981: Amended sec. 118, making AID's environmental review regulations part of the Act, and added a subsection (d), expressing that "Congress is particularly concerned about the continuing and accelerating alteration, destruction, and loss of tropical forests in developing countries." Instructs the President to take these concerns into account in formulating policies and programs relating to bilateral and multilateral assistance and to private sector activities in the developing world.
- 1983: Added sec. 119, directing AID in consultation with other Federal agencies to develop a U.S. strategy on conserving biological diversity in developing countries.
- 1986: Redesignated sec. 118 as sec. 117 with the new sec. 118 addressing tropical forest issues. Amended sec. 119, which among other things earmarked money for biological diversity projects.
- 1988: Directed AID to monitor the economic and environmental soundness of multilateral development bank programs and projects.
- 1990: Directed AID to increase the number and expertise of staff in environmental and natural resources fields, and to focus efforts on LDCs projected to produce substantial amounts of greenhouse **gases to the atmosphere.**

SOURCE: Adapted in part from B. Rich and S. Schwartzmann, "The Role of Development Assistance in Maintaining Biological Diversity In-Situ in Developing Countries," contractor paper for the Office of Technology Assessment report on *Technologies To Maintain Biological Diversity*, OTA-F-330, March 1987.

world's food supply, mainly through the creation of Collaborative Research Support Programs. Today, such research remains central to university involvement in development assistance [45].

Although Title XII initially increased university activity abroad, the effect was short-lived. The program has not achieved its potential for involving U.S. universities in development assistance and for creating the type of partnership between AID and universities envisioned by the amendment creators [1 18]. The majority of the work now carried out by universities for AID fits into five general areas:

1. research and technology generation,
2. extension and technology transfer,
3. education and training,
4. institution building, and
5. U.S. university capacity strengthening.

By statute and regulation Congress requires AID to monitor and report to Congress on progress toward achieving the Nation's development assistance objectives. AID spends about \$11 million annually conducting about 250 evaluations, many of which relate to U.S. university performance in development assistance activities [59]. Universities themselves and outside organizations also conduct evaluations, audits, investigations, and reviews. These evaluations, however, may offer little insight into the effectiveness of university participation in development assistance activities. Few evaluations have been performed in certain areas, such as the impacts of technology transfer, extension, or training. *surveys* containing the opinions of AID and university personnel account for much of the information available to AID on university relations; the most prominent of these are the 1986 "Mcpherson

**Table I-I-Chronology of University Involvement in international
Development Assistance**

Date	Activity
1800s-1940s	Individual, sporadic efforts based on personal affiliations between U.S. university personnel and colleagues abroad; numerous foreign students attend U.S. universities
1949	President Truman calls for a U.S. foreign assistance program in his inaugural address that will "make the benefits of our scientific advance and industrial progress available for the improvement and growth of underdeveloped areas"
1949	Chairman of the National Association of State Universities and Land-Grant Colleges commits the land-grant community to the program, identifying agricultural development as a primary U.S. strength and foreign development assistance need.
1950	Congress creates the "Point Four Program," administered by the Technical Cooperation Administration, thus initiating the first formal overseas development assistance program. Based on the successful Marshall Plan, the Point Four Program centered on directly transplanting U.S. technology in LDCs.
1950s	United States supports 26 alliances between universities in the United States and lesser developed countries (LDCS)
1961	Congress passes the omnibus Foreign Assistance Act (Public Law 87-195) which declares the "encouragement and sustained support of the people of developing countries in their efforts to acquire the knowledge and resources essential to development and to build the economic, political, and social institutions which will improve the quality of their lives" a principal foreign policy objective.
early 1960s	Emphasis shifts from university alliances to "institution building:" training LDC students at U.S. universities; providing U.S. university faculty to research, teach, and advise at LDC institutions; and supplying LDC institutions with materials and equipment.
1966	Congress enacts section 211 (d) of the Foreign Assistance Act (Public Law 89-583) allotting \$10 million for research and educational institutions to strengthen their programs ("capacity-building") concerned with economic and social development of LDCs.
1973	Congress enacts the "New Directions" amendment to the Foreign Assistance Act (Public Law 93-189), emphasizing assistance to the "poorest of the poor," and de-emphasizing the role of universities in development assistance.
1970-1975	AID-funded contracts to universities drop by 50 percent
1975	Congress creates Title XII "Famine Prevention and Freedom from Hunger" in amendments to the Foreign Assistance Act (Public Law 94-161), calling for development of a formal partnership between AID and U.S. universities in activities related to food and agriculture. The Board for International Food and Agricultural Development (BIFAD) was created to intermediate between land-grant universities and AID.
1980	AID creates the Office of Forestry, Environment, and Natural Resources.
1983	AID prepares policy determinations on "Environment and Natural Resources Aspects of Development Assistance" and releases a "Statement on Environment and Sustainable Development."
1988	AID prepares an updated policy paper on "Environment and Natural Resources" that became the basis for a new Environmental Initiative proposed under the 1990 restructuring of the agency.
1990	AID announces an agency reorganization, including creation of a Center for University Cooperation in Development administered by the Bureau for Science and Technology, that consolidates the Board for International Food and Agricultural Development and the Office of Research and University Relations. AID also defines anew mission, embodied in four development initiatives: 1) Democracy Initiative; 2) Partnership for Business and Development; 3) Family and Development, including food security; and 4) Environment Initiative.

NOTE: See U.S. House of Representatives, Committee on Foreign Affairs and U.S. Senate, Committee on Foreign Relations, "Joint Committee Print-Legislation on Foreign Relations Through 1979," February 1980, for a detailed description of the early evolution of U.S. foreign assistance legislation. For a detailed history of AID/university collaboration, see Jordahl, B., "Universities and AID: A History of Partnership and Problems in Their Collaboration to Provide Technical Assistance for Developing Countries," Master's Thesis, University of Minnesota, St. Paul, MN, March 1991.

SOURCE: Office of Technology Assessment, 1991

Box 1-B—AID/U.S. University Collaboration Mechanisms

Several mechanisms have been developed over the years to bind the Agency for International Development (AID) and universities together in formal relationships. AID uses universities primarily to implement AID-designed projects, specifying in detail the activities that need to be carried out and the expected end results. Most university collaboration with AID is devoted to research and project implementation, however AID also has developed several specialized mechanisms to involve U.S. universities in other stages of AID project development.

Three central mechanisms used by AID—contracts, grants, and cooperative agreements—establish different types of obligations and contributions required of each party in the partnership. Contracts allow AID the highest degree of operational control. Grants, in theory, leave program decisions to the recipient. Cooperative agreements distribute control between both parties. The nature of an agreement between a university and AID determines to a large extent the degree of oversight provided by AID as well as the amount of freedom and flexibility allowed the university. Both factors seem to affect the level of satisfaction of AID and universities in the relationship.

Three-fourths of university business with AID occurs under the framework of contracts. Mission directors, who are under heavy accountability pressure from Congress and AID/Washington, tend to rely on these “enforceable instruments” over grants and cooperative agreements that do not necessarily provide Mission directors with the ability to enforce effective performance by universities. Mission directors also choose to work under contracts when guidelines do not deem grants or cooperative agreements the most appropriate mechanisms for carrying out the activity.

AID formalizes the remaining one-fourth of its business agreements with universities under grants and cooperative agreements. Both of these mechanisms—used mainly by AID’s Bureau for Science and Technology (AID/S&T) for research services—forms of assistance to an organization. AID/S&T directs approximately most of its agriculture funds to universities through grants, which are the main instrument used by the Collaborative Research Support Program and the programs of AID/S&T’s Office of Research and University Relations. The bulk of remaining AID/S&T agricultural activities with universities is carried out under cooperative agreements.

Recipients of grants and cooperative agreements may be required to contribute a specified percentage of funding to the project to demonstrate their commitment. Cooperative agreements, however, allow AID to participate in project planning, while grants provide the recipient with more freedom in carrying out the activity and provide for minimal AID involvement.

Universities seem to prefer the relationships established under grants and cooperative agreements to those established under contracts because the former allow more flexibility and create more of a partnership or joint-ventureship between the university and AID. Grants and cooperative agreements do not place the universities

survey” [cf: 52] and recent evaluation of Program Support Grants [51].

Research and Technology Generation

Research and technology generation have played varying roles in U.S. foreign assistance programs. The Point Four program, established under President Truman, placed heavy emphasis on the United States’ strength in science and technology (see table 1-1). Although through the 1960s and most of the 1970s research was not the top priority of universities working in development assistance, enactment of Title XII in 1975 reemphasized university research. Estimated AID funding for agricultural research and technology generation rose during the early 1980s, reaching a peak of nearly \$200 million in 1985, and then returned to the level of the early 1980s—approximately \$130 million annually [59].

AID provided nearly \$50 million for research and technology development at 42 universities in 1988 (see figure 1-1).

U.S. universities have participated in research related to development assistance in several ways (see app. B). The Collaborative Research Support Program and the International Agricultural Research Centers provide forums for scientists, researchers, and graduate students from U.S. institutions to work in conjunction with other experts on global issues affecting development. AID also has generated a special collaborative program between land-grant colleges (‘ 1862 institutions’ with Historically Black Colleges and Universities (‘ 1890 institutions’ ‘). Moreover, U.S. university faculty work on AID Mission project research, which usually entails supporting a national agricultural research organization in the host country.

in a typical business arrangement based on demands, results, and payments—an arrangement that at times seems incompatible with traditional university activities such as education and research, where timeframes can be unpredictable and results subjective.

Cooperative agreements also are not subject to the same open competition requirements that govern a contract. Federal Acquisition Regulations require that all goods and services, such as a request for technical assistance, be procured through a competitive process. Cooperative agreements, however, are governed by the Federal Grants and Cooperative Agreement Act of 1982 and Office of Management and Budget Circular 110, according them a certain degree of flexibility in competition requirements. AID requires competition to the “maximum practicable extent” for grants and cooperative agreements, but the authorized exceptions to this requirement are such that many grants and cooperative agreements are not allocated competitively [71]. This flexibility has allowed AID and universities to negotiate a significantly different type of relationship than that obtained through a contract—one that places more emphasis on partnership and focuses less on the exchange of services for funding.

Several mechanisms have been developed to involve U.S. universities in various stages of AID project development, but these are rarely used. The Board on International Food and Agricultural Development (BIFAD) promoted the Collaborative Assistance Mode of contracting to involve universities in project design as well as implementation. In the past 5 years, only 5 projects have been so designated, yet the mechanism remains BIFAD’s preferred contracting method. Universities and consortia also may enter into Indefinite Quantity Contracts (IQC), instruments through which universities agree to provide an unspecified quantity of technical services up to a specific maximum dollar amount. Private firms also may compete for IQCs.

Finally, AID created the Joint Career Corps (JCC) as a means of sharing university technical expertise with Mission personnel and increasing universities’ familiarity with and knowledge about AID. University personnel participating in the JCC may devote one-third of their career time to AID and two-thirds to the university by alternative 4-year stays at their home campus with 2-year AID assignments abroad. The JCC program also has provisions for a “reverse exchange” program, whereby AID personnel work at universities for specified time periods, usually 1-year assignments. Through these exchanges, AID officials would be able to share their international knowledge with the university community, reestablish their professional credentials, and broaden their areas of expertise. Despite its popularity with AID employees, the JCC program has been little promoted and has generated no long-term relationships [25].

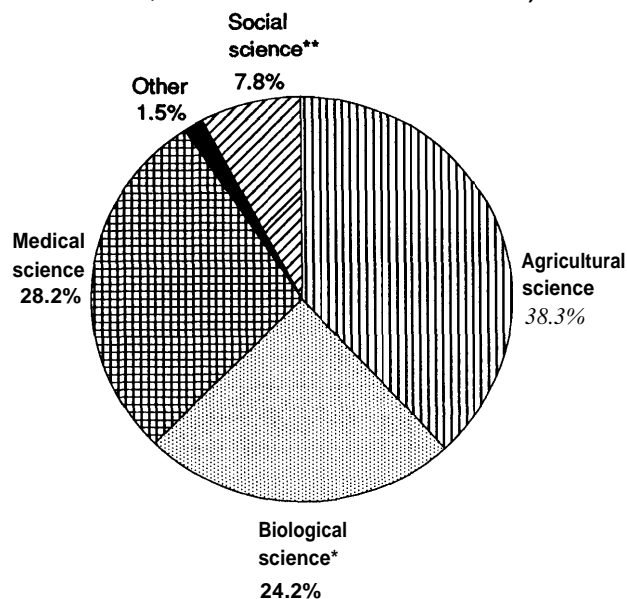
SOURCE: Unless otherwise noted, adapted from John G. Stovall, “The Role of U.S. Universities in Development Assistance: What Have We Learned from Experience?” contractor report prepared for the Office of Technology Assessment August 1989.

AID Bureau for Science & Technology has focused support in recent years for creating “centers of excellence”: strengthening a U.S. university department or institute linked to particular subject areas or geographical regions. These commonly consisted of cooperative agreements with universities for a core research program and provision for Missions to draw on university expertise as needed for technical services in specialized areas such as seed technology, aquaculture, post-harvest technology, land tenure, and food security [59]. Some of these U.S. university centers of excellence have become world-renowned in their specialties, playing an important role in acquiring, assimilating, and analyzing knowledge from around the world and integrating this information into solutions for developing societies’ problems. As such, they are unique components of the U.S. and international development assistance community.

A growing number of organizations outside the university community also have developed strong research programs relevant to development assistance. While responses to the 1986 McPherson survey revealed a positive perception among Mission Directors of U.S. universities’ work in research, a large number of respondents indicated that the International Agricultural Research Centers (IARCs) were at least equal to U.S. universities in conducting research [52]. Private firms and research institutes (e.g., Appropriate Technology International) also have developed far-reaching research programs.

AID environment and natural resource activities have focused more on field-project implementation than on research and institution-building and, therefore, have not meshed as well with U.S. university strengths. Individual university scientists have conducted most of their developing country environ-

Figure I-1 — AID Supported R&D at U.S. Universities by Field of Study, Fiscal Year 1988 (Total funding = \$48.454 million at 442 universities)



● includes Biological Science and Environmental Biology.
 ● *includes Social Science, sociology, and Economics ***

SOURCE: National Science Foundation, "Federal Support to Universities, Colleges, and Select Non-Profit Institutions: FY 1988," NSF 89-325 (Washington, DC: 1989).

mental research under the auspices of non-AID organizations, such as the National Science Foundation, Smithsonian, World Wildlife Fund, and Missouri Botanical Gardens. Recently, however, AID and universities have shown increasing interest in research on environmental and natural resource issues, potentially expanding opportunities for university involvement in research and technology generation for development assistance [cf: 62].

Extension and Technology Transfer

Attempts to translate the U.S. land-grant university extension system model to lesser developed countries (LDCs) have met with numerous difficulties [59]. AID's support of land-grant style extension services has declined over the past two decades

because of disappointing results, a desire for rapid payoffs, and the high costs of supporting large extension systems. One AID budget data analysis shows obligations for such extension projects declining from \$113 million in 1979 to \$18 million in 1989—an 84 percent drop in one decade [96]. Fewer than 10 current university projects (8 percent of all current university projects) involve direct AID support to public sector extension services.

AID has relied on an eclectic approach to technology transfer since the early 1980s, involving the private sector, mass media communications, and "innovative approaches to public extension." Although AID has given increased attention to technology transfer activities, expanding their funding from \$152 million in 1984 to \$218 million in 1989, university participation in these types of projects is minimal [59]. AID commonly hires nonuniversity contractors, including private voluntary organizations, to carry out technology transfer projects.⁴

Education and Training

A major emphasis of U.S. university participation in international development assistance has been training and educating LDC students. Approximately 200,000 LDC students today attend about 2,000 U.S. universities [20]. The preferred fields of study for foreign students attending U.S. universities in descending order are:

1. engineering,
2. business management,
3. natural and life sciences,
4. social sciences,
5. humanities, and
6. agriculture [1].

Only 2.8 percent of the 326,300 foreign students attending U.S. universities in the 1981-82 academic year were enrolled in agricultural programs [6]. The percentage of AID-supported students enrolled in agriculture and natural resource programs is signifi-

⁴A recent AID review identifies general weaknesses in AID's extension activities:

- few innovative and creative extension activities in LDCs and a general overdependence on outdated extension methods,
- lack of contact with LDC farmers and few attempts to work through farmer organizations,
- insufficient contact between extension actors and research organizations,
- failure in tying extension activities to the overall development strategies of the LDCs,
- little practical technology to offer LDC farmers, and
- disregard for the significance of women's roles in extension.

Recommendations from reviewers include: improving communications, coordination and cooperation among researchers and farmers; improving the mix of extension methods and complementing traditional one-on-one extension agent/farmer contacts; and organizing farmers to help themselves through various organizations in which farmers participate [13].

cantly higher, reaching approximately 30 percent in 1988 [103].

U.S. universities participate in training LDC students through several arrangements. Most foreign students are supported by personal funds, university assistantships, and other such arrangements. Some students enroll in U.S. universities as a part of an AID project, others do so with AID financial support. For example, Collaborative Research Support Programs (CRSP) provide graduate training for LDC scientists in fields related to their area of research. The Sorghum and Millet CRSP provided 77 foreign students with advanced degree training in areas related to research of those crops over a 4-year period [59].

Although the effectiveness of LDC student education and training has not been determined, universities generally are credited with contributing significantly to building up the technical and research capacity of many LDCs. Thus, the AID Mission practice of separating training components from technical components in projects, and AID's increased reliance on private contractors for student placements, have emerged as significant points of contention between U.S. universities and AID.

A recurring criticism of AID/university education and training focuses on the relevance of the material taught [cf: 16]. To improve the relevance of U.S. training of LDC students, thesis research might be conducted in the home country, preferably in conjunction with specific development projects in the home countries [59]. In addition, education and training programs could emphasize training in operating and modifying tools and techniques to complement LDC conditions. Such programs should view farming systems research and development in the context of small farm size, farm enterprise diversity, inclement agroecological conditions, and scarce or costly inputs [16]. Other recommendations for improving training and education programs include: eliminating institutional barriers that hinder LDC student performance, such as inadequate advising programs and inflexible curricula, and increasing the enrollment of women from LDCs in U.S. university programs [20]. Regular evaluations of foreign student education and training programs could lead to improved curricula and opportunities and help justify the funds invested in their training.

LDC Institution Building

One major task of U.S. universities working in development assistance has been to help develop higher education and research institutions in developing countries. Key elements of institution building include: modernization of curricula, development of research programs, creation of extension activities, and training of new and current faculty.

Institution-building is a long-term process: training and developing a critical mass of faculty can take 10 to 15 years, and developing effective research programs can take an additional 10 years. Long-term collaborations in institution building have been formed by linking a U.S. university or university consortium with one or more LDC universities, a government ministry, or a research institute in a developing nation (see table 1-2). Development of these "twinning" or "sister university" relationships have facilitated faculty exchange, training, and other AID-financed support.

One of the largest institution-building projects, and in quantitative terms perhaps one of the most successful, linked six U.S. universities to nine State agricultural universities in India beginning in 1952. AID spent \$31 million over a 20-year period on this project, which provided at least 1,000 U.S.-trained Indian students with advanced degrees and sent 337 U.S. faculty members to serve at Indian institutions. A 1974 evaluation of the India Project found that the number of Indian staff members with Ph.D.s at participating universities increased from 251 to 1,234, the number of professors granted advanced degrees from U.S. universities increased from 140 to 486, and enrollments at the participating Indian universities more than doubled, rising from 9,790 to 23,213 [45]. The study also revealed that comparatively little progress had been made at unassisted Indian universities over the same period.

LDC institution building through institutional linkages commonly is perceived to be U.S. universities' strongest achievement [cf: 51,52]. However, surveys have revealed an AID preference to use private firms to assist in private sector institution-building activities, and private voluntary organizations for local level institution building (e.g., cooperatives and grassroots organizations).

A 1989 study by AID's Center for Development Information and Evaluation included examples of U.S. university efforts in institution building activi-

**Table I-2—AID-Supported U.S. University and Host Country Organization
Agricultural Institution Building Projects Initiated Since 1950**

Host university	U.S. university	Dates
Karaj College (Iran)	Utah State University	1951-58
Agricultural College at Aba-Ghraib (Iraq)	University of Arizona	1951-59
National Institute of Agriculture (Panama)	University of Arkansas	1951-57
University of The Philippines	Cornell University	1952-65
Alemaya University of Agriculture (Ethiopia)	Oklahoma State University	1952-68
Kasesart University (Thailand)	Oregon State University	1954-60
	University of Hawaii	1962-65
Seoul National University (Korea)	University of Minnesota	1954-62
Kabul University (Afghanistan)	University of Wyoming	1954-57
Ataturk University (Turkey)	University of Nebraska	1954-57
University of Concepcion (Chile)	University of California	1954-57
University of Quito and Guayaquil (Ecuador)	University of Idaho	1954-57
Superior Institute of Agriculture (Mexico)	Texas A&M University	1954-56
National Agrarian University (Peru)	North Carolina State	1954-68
	University	1982-88
Hariyana Agricultural University (India)	Ohio State University	1955-72
University of Udaipur (India)	Ohio State University	1955-72
G.P. Pant Agricultural University (India)	University of Illinois	1955-72
Andhra Pradesh Agricultural University (India)	Kansas State University	1956-72
Mysore Agricultural University, Bangalore (India)	University of Tennessee	1957-72
Orissa University of Agriculture (India)	University of Missouri	1957-72
Bandung Institute of Agriculture (Indonesia)	University of Kentucky	1957-67
	MUCIA	1969-81
	University of Wisconsin	1980-85
Hokkaido University (Japan)	University of Massachusetts	1957-61
University of San Carlos (Guatemala)	University of Kentucky	1957-63
Peshawar University (Pakistan)	Colorado State University	1958-64
Bangladesh Agricultural University	Texas A&M University	1958-73
Hebrew University (Israel)	State University of New York	1958-62
National College of Agriculture (Cambodia)	University of Georgia	1960-63
National Taiwan University	Michigan State University	1960-64
Chung Hsing University (Taiwan)	Michigan State University	1960-64
University of Nigeria	Michigan State University	1960-67
National College of Agriculture (Vietnam)	University of Georgia	1960-63
National University of Asuncion (Paraguay)	Montana State University	1960-63
	New Mexico State University	1964-67
Punjab University (Pakistan)	Washington State University	1961-69
Universidad de la Republica (Uruguay)	Iowa State University	1962-68
Egerton Agricultural College (Kenya)	West Virginia University	1962-72
Sokoine University of Agriculture (Tanzania)	West Virginia University	1962-72
University of Ceara (Brazil)	University of Arizona	1964-73
University of San Paulo (Brazil)	Ohio State University	1964-73
University of Rio Grande do Sul (Brazil)	University of Wisconsin	1964-73
University of Vicosa (Brazil)	Purdue University	1964-73
University of Costa Rica	University of Florida	1965-70

ties in 23 countries representing each major developing country region [32]. This assessment found that a majority of LDC faculty trained by U.S. institutions returned to their host countries and emerged as university leaders, development of LDC undergraduate training programs led to a considerably expanded supply of trained agriculturalists, and many LDC universities have been able to develop new technologies for the agricultural sector.

Weaknesses in the institution-building process also were identified, among them: overproduction of

manpower in LDCs in areas without sufficient jobs to support the graduates; an insufficient LDC university role in extension practices; a tendency for social science programs to lag behind agricultural and other scientific fields; and a tendency to sever institutional support prematurely. In addition, the study recognized that LDC institutions need to form close linkages with ministries of agriculture in the developing countries and must cultivate political and financial support from farm groups, agricultural firms, and other local organizations [32,59].

Table I-2-Continued

Host university	U.S. university	Dates
Superior Institute of Agriculture (Dominican Republic)	Texas A&M University	1965-73
Punjab Agricultural University (India)	Ohio State University	1955-72
Makerere University (Uganda)	West Virginia University	1964-73
Ahmadu Bello University (Nigeria)	Ohio State University	1984-93
University of Ife (Nigeria)	Kansas State University	1962-78
Bunda College of Agriculture (Malawi)	University of Wisconsin	1964-75
Njala Agricultural University (Sierra Leone)	University of Massachusetts	1963-70
Madhya Pradesh Agricultural University (India)	University of Illinois	1963-71
Maharashtra Agricultural University (India)	University of Illinois	1964-73
Institute of Agricultural and Veterinary Sciences (Morocco)	Pennsylvania State University	1967-72
Brazilian Agricultural Faculties	University of Minnesota	1969-90
University of Jordan University	Michigan State University	1973-78
Peradenia University (Sri Lanka)	Washington State University	1975-79
Eastern Regional Universities (Indonesia)	Penn State/Texas A&M	1979-85
Western Regional Universities (Indonesia)	Washington State University	1980-85
Visayas College of Agriculture (Philippines)	University of Kentucky	1980-90
Agriculture University at Dschang (Cameroon)	Cornell University	1981-87
Northwest Frontier Agri. University (Pakistan)	University of Florida	1982-90
University of Ouagadougou (Burkina Faso)	University of Illinois	1983-92
University of Zimbabwe	University of Georgia	1983-90
University of Sanaa (Yemen)	Michigan State University	1984-89
Jamaica College of Agriculture	Oregon State University	1985-96
School of Agriculture for Tropics Humid Regions (Costa Rica)	Louisiana State University	1986-90
	California Polytechnic and State University	1986-88
	Rutgers University	1986-88
	University of Nebraska	1986-88
	Virginia Polytechnic Academy of Educational Development	1986-88
Edgerton Agricultural College (Kenya)	University of Illinois	1986-91

SOURCE: G.E. Hansen, "AID Evaluation Highlights-The Impact of Investments on Agricultural Higher Education," prepared for the U.S. Agency for International Development, Washington, DC, 1989.

Capacity Building of U.S. Universities

Since the enactment of 211(d) of the Foreign Assistance Act in 1966, AID has formally attempted to strengthen the capacity of U.S. universities working in international development. The 211(d) grants initially provided funds to improve university competence across a broad spectrum of areas, but over the following two decades the capacity-building program became more focused. Evolution of the 211(d) program into the Strengthening Grant Program and, in the mid-1980s, into the Program Support Grant/Joint Memorandum of Understanding project (PSG/JMOU) presaged a new approach to strengthening U.S. universities. AID provided approximately \$26 million to some 57 U.S. universities between 1979 and 1986 under the Title XII Strengthening Grants program. Subsequent to criticism that funds were allocated to uses only peripherally related to AID objectives and activities, the successor PSG/JMOU program focused funding on

U.S. university capabilities in certain specific geographic and subject areas to develop expertise related to one or more specific AID projects.

Through the Joint Memorandum of Understanding, partnerships formed between 12 land-grant universities that had "graduated" from the terminated Strengthening Grants program, and 12 Historically Black Colleges and Universities (HBCU). Each university then became eligible for a 5-year Program Support Grant to develop faculty skills. Receiving a PSG did not guarantee receipt of AID contracts, it only assisted universities' to develop capabilities for AID work.

The PSG/JMOU program was terminated in 1991 subsequent to a determination that it not a cost-effective means to involve U.S. universities with AID programs [51]. The evaluation report recommended, instead, that AID:

Table 1-3-AID/University Programs and Projects by Development Sector, Region, and Amount Cumulative, 1960-66

Region	Number of Projects	Number of universities	Total dollar amount
Agriculture			
Africa	57	34	139,898,662
Asia	79	41	114,235,549
Latin America	71	24	89,815,845
North Africa/Near East.....	25	16	58,243,986
Total	232	115	402,194,042
Development Planning and Economics			
Africa	11	10	8,450,653
Asia	11	8	14,978,914
Latin America.....	21	15	14,317,723
North Africa/Near East.....	3	3	13,359,717
Total	46	36	51,107,007
Health and Population			
Africa	20	12	33,682,323
Asia	16	12	12,284,076
Latin America.....	23	16	6,328,577
North Africa/Near East.....	5	5	2,049,119
Total	64	45	54,544,095
Human/Resources			
Africa	54	29	108,088,834
Asia	40	24	61,101,544
Latin America.....	56	28	26,795,932
North Africa/Near East.....	20	15	55,043,890
Total	170	96	251,030,200
Natural Resources			
All	10	8	14,325,437
Sciences and Engineering			
All	37	22	57,860,557
Total	559	322	831,062,338

SOURCE: E.J. Long and F. Campbell, "Reflections on the Role of AID and the U.S. Universities in international Agricultural Development" (Rockville, MD: Statistica, Inc., 1989).

1. encourage noncontractual, long-term linkages between U.S. universities and LDC institutions,
2. finance university services through contracts or individually tailored grants (with the exception of certain "strengthening elements" for HBCUs),
3. open AID use of university services to a wider range of universities, and
4. encourage collaboration between U.S. universities and the private sector.

RECENT TRENDS IN AID/ UNIVERSITY COLLABORATION

Agricultural development assistance has been the focus of U.S. university involvement in development assistance from the start and continues to

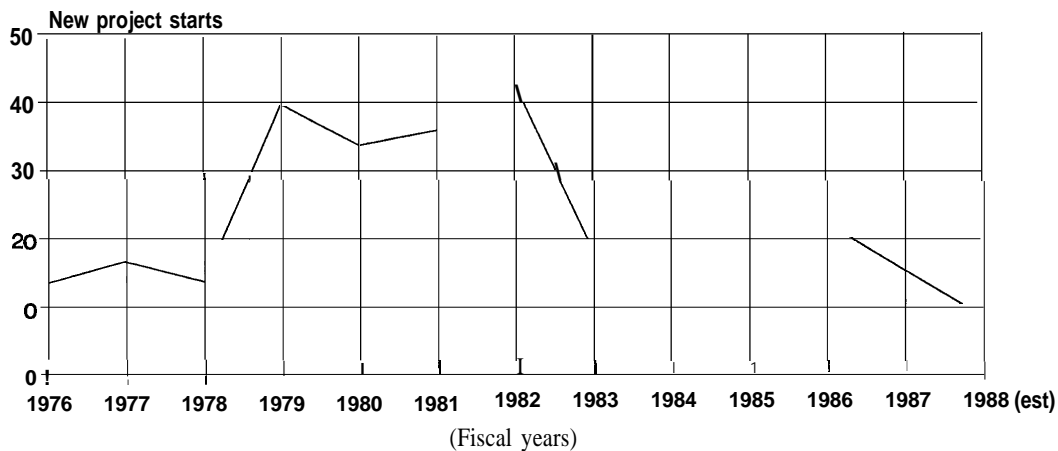
account for most university development assistance work (table 1-3). At least half of Mission-sponsored university contracts since 1960 have been agriculturally oriented.⁵

AID conducts and sponsors environment and natural resources related activities, but these have been minor foci of U.S. land-grant university activity [cf: 109], even at a time of rapidly increasing national and international attention to these issues. They inevitably have been overshadowed by agricultural production activities. Increased attention to natural resource and environment in foreign assistance policy and programs suggests that these areas could figure more prominently in future U.S. university work.

University development assistance activities, however, have declined as a whole. A review of AID

⁵Human Resources have also been an important area representing almost one-third of these university contracts. University sectoral support in development planning and economics, health and population, and science and engineering have been supported to some extent but will not be reviewed in this report.

Figure 1-2—Title XII-Type Projects by Year of Start



Projects include those involving Title XII-eligible institutions, whether procured through “set-asides” or open competition.

SOURCE: U.S. Congress, General Accounting Office, “Foreign Aid: Issues Concerning U.S. University Participation,” GAO/NSAID-89-38, report to the Chairman, Committee on Foreign Affairs, House of Representatives, U.S. Congress, Washington, DC, April 1989.

Mission-sponsored university agricultural projects between 1951 and 1988 shows that such activities are now at their lowest level in 37 years [41]. A 1989 General Accounting Office (GAO) audit of Title XII activities reports that, after the 1975 enactment of the Title XII legislation, the number and dollar value of new Title XII contracts and grants for technical assistance grew, peaked in 1982, and subsequently declined (see figure 1-2).⁶ Centrally funded AID/university programs, such as the Collaborative Research Support Programs (CRSPs) also have declined, concomitant with overall reductions in AID Agriculture, Rural Development, and Nutrition budgets.

The number of active projects and the number of universities involved will probably continue to fall. Universities implemented 96 new projects from fiscal year 1979 through fiscal year 1981, with a total value of \$513 million—an average of \$171 million annually. New university projects totaled 12 for fiscal year 1987 through fiscal year 1989, with an annual average value of \$47 million. University projects represented 19 percent of the total AID obligations for all agricultural projects from 1979 to 1981, but only 4 percent from 1987 to 1989 [59].

The decline in Title XII projects is commonly attributed to four causes:

1. decline in AID involvement in large institution-building activities,
2. decline in the Agriculture, Rural Development, and Nutrition budget and earmarking of those funds for other purposes,
3. growing Mission management of programs involving private sector development and marketing elements for which private sector contractors tend to be preferred, and
4. preference by “AID managers and host country project leadership for fully open competition in procurement of services and strong resistance to ‘set-asides’ “ [51].

Almost 75 percent of active projects terminated by the end of fiscal year 1990. The number of universities implementing Title XII projects drops with the number of active projects. In 1988, 72 universities were participating in Title XII contracts or cooperative agreements. The GAO estimates that the number may drop to 35 universities after fiscal year 1990 [106].

⁶Neither AID nor BIFAD adopted an official definition of a “Title XII project.” The term is sometimes used to refer to projects that are “set aside” for Title XII universities. At other times all agricultural projects awarded to universities are referred to as Title XII projects, regardless of the contracting mode. The GAO used an unofficial list of projects maintained by BIFAD staff that includes all “Title XII-type” projects implemented by universities.

⁷These figures do not take into account university participation in non-Title XII type projects and contracts, such as in health and engineering [33].