

Cornell University Meets the Challenge of World Agriculture



Larry Zuidema

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Foreword

Just prior to the establishment of the International Programs of the New York State College of Agriculture and Life Sciences at Cornell University (IP-CALS) on February 1, 1963, the College released a document entitled “World Agriculture: Our Challenge.” The following manuscript, the title of which reflects this commitment, reviews the international activities of CALS over the years and was prepared as a contribution to the 50th anniversary celebration of IP-CALS. The first three sections of the manuscript were adapted from an IP-CALS 50th anniversary presentation by the author on February 15, 2013. These sections draw heavily on archived documents in the Kroch Library Rare and Manuscript Collection at Cornell University, which also contributed the photos, and on early annual reports of CALS. The remainder is based on IP-CALS’ documents, annual reports, program websites, and the experiences, memories, and insights of the author and others. This document has been placed on eCommons by the Cornell Association of Retired Professors (CAPE).

Dedication

In memory of Professor Kenneth Leroy Turk, first Director of IP-CALS.

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Meeting the Challenge of World Agriculture

On February 15, 2013, the 50th anniversary of what is now called International Programs of the College of Agriculture and Life Sciences (IP-CALS)¹ at Cornell University was celebrated with a review of the past, a summary of present activities, and a look to the future. While the focus and emphasis of IP-CALS activities have been refined during these 50 years to accommodate new opportunities, resources, and circumstances, it is noteworthy that several components have endured over time, including:

- 50 years of an organized Graduate School program in International Agriculture and Rural Development (IARD), beginning with an IAD minor and then an M.P.S.-IARD degree program;
- 50 years of an undergraduate program in International Agriculture which began with a “secondary specialization” and is now a major subject area.;
- 45 years of IARD 602, a popular interdisciplinary course that continues to put students and faculty directly in touch with development institutions, communities and issues abroad;
- 40 years of the M.P.S degree program in International Agriculture and Rural Development;
- 39 years of scientific exchanges with the countries of Eastern Europe involving several programs;
- 37 years of a contract with the Peace Corps to give Cornell students experience abroad;
- 34 years of the Hubert H. Humphrey program bringing mid-career professionals into the Cornell academic environment.

Throughout these 50 years, many interesting international projects and activities have provided significant international experiences and an enriched academic environment for students, faculty and staff of the university. These ac-

¹ The term “IP-CALS” in this document is also used for the International Agricultural Development Program (IADP) from 1963 to 1971 and the International Agriculture Program (IAP) from 1971 to 2001.

tivities effectively broadened the faculty base capable of teaching and conducting research of relevance to the developing world. More importantly, they helped produce the international and U.S. graduates capable of providing the expertise and leadership necessary to address agricultural problems in countries of the developing world and to open new opportunities for development. For example, Teng-hui Lee, a Ph.D. student of Professor John W. Mellor, won the American Agricultural Economics Association award for best-published research, eventually became President of Taiwan, and later endowed a chair for international agriculture in Agricultural Economics at Cornell. Evidence of CALS' contributions to international leadership include three Cornell World Food Prize laureates, the first World Agriculture Prize awardee in 2013, and the large number of Cornellians who have served as leaders, board members and staff of the 16 international agricultural research centers of the Consultative Group for International Agricultural Research (CGIAR) and other international development organizations. Over the years and today, IP-CALS is internationally recognized for its strong academic program and front-line development-oriented activities.

The establishment on February 1, 1963 by the New York State College of Agriculture of a formal international program marked a move toward a more coordinated and substantive program, including new academic opportunities on-campus, in contrast to earlier *ad hoc* and individual faculty engagements abroad. IP-CALS was created shortly after Cornell University established the Mario Einaudi Center for International Studies (CIS) although planning for both international entities began about the same time in 1960-61. The broader context for these institutional innovations was the centennial celebration of the Land Grant college system, which nationally adopted the extension of this system into the international arena as its theme. This coincided with the establishment of the U.S. Agency for International Development (USAID) whose predecessor agencies had experimented with institution-building activities involving U.S. universities as partners with universities in developing countries, particularly focusing on agriculture. Cornell in The Philippines, and 25 other U.S. universities elsewhere, participated in this early (1952-60) national program, which continued for years to come under the auspices of USAID.

The current focus of IP-CALS is on leadership development, strategic partnerships and new knowledge and technology. In 2002 it established a transnational learning program to digitally bring Cornell's resources to institutions in sub-Saharan Africa. In addition, several large technology-oriented international projects, involving several partners in the U.S. and the developing world, keep Cornell at the forefront of research for development. An umbrella program, Ad-

vancing Women in Agriculture through Research and Education (AWARE), established in 2012, is designed to ensure that gender is considered in all IP-CALS sponsored, academic, and other activities.

Cornell's pioneering effort in establishing a formal international program in a College of Agriculture in 1963 paved the way for many other U.S. universities to do the same. In addition, IP-CALS stimulated the creation of the Association of U.S. University Directors of International Agricultural Programs (AUSUDIAP), which continues today as The Association for International Agriculture and Rural Development (AIARD). Formally established in 1968, a key member of AIARD later said that "the organization of the group actually started in June 1965 when a group of international agricultural directors and other agricultural administrators met at Cornell, at the invitation of Dean Charles E. Palm and Director Kenneth L. Turk, to discuss the necessity for a formal group to act on topics of mutual interest."² In addition to representatives from 15 universities, this meeting included leaders from the Ford and Rockefeller Foundations, The Agricultural Development Council, International Voluntary Services, U.S. Agency for International Development, U.S. Office of Education of HEW, and the International Agricultural Development Service of the USDA. Over the years at AUSUDIAP meetings, Cornell continued to be cited as a model for the organization of international agricultural programs on U.S. university campuses. Today, AIARD is described as "an association of professionals and practitioners in international development with experience and intellectual and institutional capabilities to articulate and address broad-based as well as more focused development issues in agriculture and rural development."

This historical review attempts to show how the foundations and development of IP-CALS allowed it to endure as a viable, responsive program for today and how this program contributed to Cornell having a global impact. Five main topics are addressed: (1) the genesis of the CALS international program (1900-1960), (2) the establishment of IP-CALS (1960-1963), (3) program characteristics, (4) campus activities, and (5) international activities.

² Paper by Hugh Popenoe, "The Early History of AUSUDIAP—the Precursor to AIARD," *Univ. of Florida*, June 7, 2004.

Genesis of the CALS International Program (1900-1960)

Establishing what has been called the first international agriculture program at a U.S. university was a bold and brave move. That Cornell was already a world-class university certainly contributed to the possibility of establishing a high-quality international program. Furthermore, the philosophy of Ezra Cornell expressed in the Cornell University motto as well as the commitment to service embodied in its Land Grant status were important elements in preparing CALS for a formal international program.

International engagement by CALS on-campus and abroad was justified and seen as “mutually beneficial” in the past, much as it is today. In the early days, the idea of mutual benefits usually related to links to the European scientific community, but this changed with increased enrollments of international students and corresponding faculty exposure to other world regions. The New York State College of Agriculture’s first Dean, Liberty Hyde Bailey,³ highlighted this change more than 100 years ago in his foreword to the 1911 book *Farmers of Forty Centuries* by F. H. King of the University of Wisconsin. He says, “We in North America are wont to think that we may instruct the world in agriculture, because our agricultural wealth is great and our exports to less favored peoples have been heavy; but this wealth is great because our soil is fertile and new, and in large acreage for every person. We have only begun to farm well. The first condition of farming is to maintain fertility. This condition the oriental peoples have met, and they have solved it in their way. We may never adopt particular methods, but we can profit vastly by their experience.” This reprinted book, based on King’s visits to China, Korea and Japan, remains today an excellent discourse on organic agriculture. Bailey’s comments suggest scientific humility and an early appreciation by Cornell leaders for the “mutual benefits” involved with international engagement with the peoples and institutions of the developing world in addition to the already established links with those in Europe.

What follows are illustrations of four types of international activities of CALS before 1960: international education, scientific endeavors, technical assistance, and institution-building.

³ *The College of Agriculture of Cornell, created from the Department of Agriculture in 1896, became the New York State College of Agriculture at Cornell in 1903 at which time Bailey was Dean until 1913.*

International Education

The education and training of international students was an important part of Cornell's early history and many professors were committed to this activity. Under the leadership of Cornell President Jacob Gould Schurman (1892 to 1920), who was also U.S. ambassador to China from 1921 to 1925, the Cornell Board of Trustees awarded six Chinese scholarships per year beginning in 1906. Through these scholarships and many other funding sources, 3,500 Chinese attended Cornell between 1900 and 1949. As early as 1910-11, the CALS annual report documents 48 undergraduate and 7 graduate students from foreign countries: 23 from Asia (14 Chinese and 3 Filipinos), 12 from Latin America, 12 from Europe, 5 Canadians and 3 from South Africa. By 1922, Cornell University already had 1,081 foreign alumni (including from the territory of The Philippines) representing about 3.5 percent of all Cornell alumni. The largest sources of student alumni then were Canada with 277, China with 231, Cuba with 113 and The Philippines with 91. In that year the only Cornell alumni associations were in China, The Philippines, Canada and Hawaii (before it was a state). By 1960, CALS had about 250 international students enrolled in advanced degree programs and about 60 in undergraduate programs. Clearly, a strong motivation for CALS faculty to travel abroad, by invitation or design, was due to exposure to other cultures through the international students in their programs.

One of CALS' most colorful faculty members was Erl Augustus Caesar Bates, Professor of Physical Anthropology and founder of the American Indian Farmer School in New York State. A native of Syracuse, he studied medicine in New York City and Europe in the early 1900s and served in the Congo for the British and in Java for the Dutch. Following a 14-year stint with the Rockefeller Foundation, he joined the Cooperative Extension program of Cornell University focusing on the needs of Native American communities in New York State. In 1921, the International Agricultural Society (IAS) was formed at Cornell by American and international students and Bates was described as its "guiding spirit and founding father."

In the 1921-22 College of Agriculture annual report, Dean Albert Mann announced the formation of the IAS stating that "there are 58 foreign students taking work in agriculture, about half of them registered as graduate students. The impulse for the organization of these students was their own conviction that merely to complete the college curriculum gave them an inadequate understanding of American agriculture."⁴ He goes on to say that these students wanted the

⁴ *Annual Report, New York State College of Agriculture, 1921-22.*

opportunity to visit farmers and farm communities and to learn from the experiences of other foreign students. A 1923 *Cornell Daily Sun* article about an IAS meeting shows that students, faculty and administrators enjoyed a talk by Cornell President Farrand, music, dancing and an Erl Bates-produced pageant, “The Spirit of International Agriculture.”

It is clear that CALS was actively training many international leaders for development in its early days and that both administrators and faculty were intimately involved. One could say that the IAS was reborn in 1979 as the International Association of Camel Breeders, which was organized by IP-CALS M.P.S. students with similar objectives.

Scientific Endeavors

Some of the first international experiences of CALS faculty came in the form of activities related to the collection of seeds, insects and other materials from tropical environs. Most notable were Professor L.H. Bailey’s collections (particularly of palms) that contributed to the establishment of the Bailey Herbarium. Another example was the excursion of Professor Rollins Adams Emerson, plant breeder, to Latin America in 1923-24 to collect indigenous maize varieties. In 1935 he went to the Yucatan at the invitation of the Carnegie Institution to study the probable food plants grown by the ancient Mayan peoples.

In 1924, CALS provided national leadership for international exchanges in agricultural science and education with the two-year (1924-26) assignment to Europe of CALS Dean Albert R. Mann by the International Education Board to “undertake the European organization for the agricultural exchanges in cooperation with American Institutions.” Established in 1923 by John D. Rockefeller, Jr., this Board eventually provided support for U.S. scientific exchanges in agriculture with 39 countries worldwide, including the below-mentioned Cornell-Nanking project. The Board, which existed from 1923 to 1938, was absorbed into the Rockefeller Foundation in 1929.

An early large CALS international research program focused on comparative extension education was initiated by Professor Andrew Leon Winsor in 1956 and supported by a \$500,000 grant from the Ford Foundation. This heralded the beginnings of CALS international activities in the social sciences, which were eventually supported by the Ford Foundation as part of its major contributions to CALS and CIS beginning in 1962. Professor J. Paul Leagans continued this research after 1960 with a project on the adoption of modern agricultural technology by small farm operators involving 12 Ph.D. dissertations based on



The first annual banquet of the International Agricultural Society (IAS) in 1922 was addressed by the former CALS Dean (1903-13) and Professor of Horticulture, Liberty Hyde Bailey (1858-1954); the then current CALS Dean Albert Russell Mann (1880-1947) who became Cornell's first Provost (1931-37); Professor Ezra Dwight Sanderson (1878-1944), an economic entomologist who became Head of the Department of Rural Sociology and eventually President of the American Sociological Society (1942); Professor L. H. Parker, Massachusetts Agriculture College, who was Secretary of the World Agricultural Society; Professor E. A. Bates; and students from China, India, The Philippines and Thailand. Standing in back row from left: M. Tinio (Philippines), IAS secretary; I. C. Chandratytia, (Siam); Liberty Hyde Bailey; C. S. Liu (China), IAS social committee chair; Dean A. R. Mann; M. B. Needu (India), IAS president; E. A. Bates; L. H. Parker; Dwight Sanderson.

research in developing countries. The long-term results were summarized in IA Mimeo #6 in June 1979. Leagans also served as a consultant on extension education systems to the Ford Foundation in India from 1958 to 1960.

Technical Assistance

Only a few faculty members spent brief periods in the developing world in the early 1900s, sometimes at the request of former students who went as missionaries with a focus on the improvement of agricultural production. Cornell

President Jacob Gould Schurman was instrumental in opening doors in China for technical assistance activities by Cornell graduates and faculty in those early days. For example, Schurman recommended Cornell agricultural economics graduate Gerow D. Brill to head the Hupeh Agricultural College and Experimental Farm in Wuchang, China. Brill served in that capacity from 1897 to 1901 and shortly thereafter was joined by Cornell agronomy graduate John Washington Gilmore, who returned to Cornell in about 1907 to become an assistant professor of agronomy and superintendent of Cornell University farms.

Cornell graduate John H. Reisner went to Nanking, China as an agricultural missionary in about 1914 and shortly thereafter became dean of the College of Agriculture at Nanking University. Cornellian J. Lossing Buck, husband of famed author Pearl S. Buck, went to China in 1916 as an agricultural missionary and eventually settled in Nanking in 1920. Almost immediately, Reisner asked his fellow Cornell alumnus to start a program in agricultural economics. Buck soon started the teaching program in agricultural economics and conducted farm surveys with young Chinese scholars. He went on to complete his M.S. (1925) and Ph.D. (1933) at Cornell and, in the 1930s, arranged for several Cornell agricultural economics professors (S. W. Warren, G. W. Hedlund, W. M. Curtiss, and J.R. Raeburn) to spend a year each at Nanking University assisting with teaching and the collection and analysis of farm records and land-utilization data.

The era of formal, organized “technical assistance” activities by CALS, however, began with the Cornell-Nanking Cooperative Crop Improvement Program, which took place at the University of Nanking in China in two interrupted phases from 1925 to 1931. The project was led by Professor Harry H. Love and involved two other Cornell faculty members of the Department of Plant Breeding, R. G. Wiggans and C. H. Myers. With the assistance of Dean Albert R. Mann, this famine-induced plant breeding project was primarily funded by the above-mentioned International Education Board. This program not only involved research but also many summer training institutes, classroom teaching at Nanking University, and advanced degree education of several Chinese at Cornell. One of the direct benefits to Cornell of this activity was the acquisition of Wong barley, which was incorporated into Cornell varieties to shorten the straw to reduce lodging and increase yields. Love later returned to China as advisor in agriculture and crop improvement to the Chinese Ministry of Industries and as special lecturer at the University of Nanking and the Central University from 1931 to 1934. He also provided technical assistance in plant breeding in Thai-

CALS and China

CALS activities at Nanjing Agricultural University in the 1920s and 1930s marked the beginning of CALS' formal engagement with China. With the re-opening of China in the late 1970s, Dean David Call and five professors from CALS made an exploratory trip to China in March of 1979 as guests of the Ministry of Agriculture, visiting Nanjing Agricultural University, among other institutions. At that time, the two institutions defined a joint program that provided for collaborative research as well as an exchange of faculty, scholars and graduate students. This was followed by two national workshops on Chinese agriculture and rural development organized by IP-CALS in May 1979 (see IA Mimeo #74) and April 1981 (see IA Mimeo #89), each involving about 30 Cornell faculty participants and from 25 to 30 invited China scholars. Since then, many CALS faculty and graduate students have been involved in scientific activities in China, and numerous Chinese have received professional training and advanced degrees in CALS. With the assistance of the Rockefeller Foundation and the Chinese National Science Foundation, IP-CALS facilitated the return to China of several ethnic Chinese agricultural scientists living in the U.S. for a sabbatical year in the mid-1990s. Beginning in 1999, the Tang Family Cornell–China Scholars Program provided opportunities for several distinguished mid-career Chinese scholars in agriculture and biological sciences and engineering to spend time at Cornell to strengthen their capacities for scientific leadership. In 2004, China Agricultural University and CALS developed a dual BS-degree program involving two years of study at Cornell and a joint degree.

Recent evidence of the enduring good will between Cornell and China is demonstrated by the following dramatic story, which begins with Shu Chun Teng, who studied mycology at Cornell in the early 1920s. Returning to China, he became China's top expert on fungi, spending 10 years collecting samples from all over China. To avoid destruction of his collection when the Japanese invaded the country prior to WWII, his 2,278 fungi specimens were smuggled by ox cart to Indonesia and from there to the United States by sea. These specimens reached Cornell in 1940 and were preserved in the Plant Pathology Herbarium for the next 70 years. In November 2009, Cornell President David Skorton returned much of the collection of rare fungi to China.

land. According to CALS Dean W. I. Myers, the success of this Cornell-Nanking project was one of the basic reasons for the initiation of a more comprehensive program of cooperation between American colleges and their overseas counterparts as an important part of the U.S. technical aid program.⁵ For Cornell, the widely acclaimed success of these Cornell-Nanking technical-assistance activities gave CALS faculty and administration the confidence to pursue similar expanded activities years later, especially in The Philippines.

At a ceremony on October 20, 2013 at Nanjing Agricultural University (NAU), the Global Confederation of Higher Education Associations for Agricultural and Life Sciences (GCHERA) awarded the inaugural World Agriculture Prize to Professor W. Ronnie Coffman, Cornell Ph.D. and current director of IP-CALS, in recognition for his “career at Cornell University in capacity building in crop improvement, promoting innovative global partnerships and being an inspiration to generations of young students and researchers at Cornell and worldwide.” NAU sponsors the GCHERA World Agriculture Prize.

Another example of CALS technical-assistance activities took place in Central America from 1946 to 1956. In this period, three CALS professors, Homer Thompson, Ora Smith and Howard Conklin, provided long-term technical assistance to the newly established Inter-American Institute of Agricultural Sciences (now called the Centro Agronómico Tropical de Investigación y Enseñanza – CATIE) in Turrialba, Costa Rica.⁶ Homer Thompson, former head of Vegetable Crops at Cornell, served for three years in Costa Rica as the director of the Institute’s Department of Plant Industry. In addition, several Cornell graduates eventually served in key positions at CATIE over the years. This relationship was renewed in 1993 when CATIE and CALS became partners in a graduate student exchange program where each year up to two students from each institution study at the partner institution.

Institution-Building

Based on President Truman’s Point Four technical assistance program in the early 1950s, the U.S. government funded the first of many long-term institution-building projects that partnered a U.S. university with a university abroad. In this context, and with the encouragement and assistance of Dean W. I. Myers, CALS developed a contractual relationship with the University of The Phil-

⁵ Taken from the address of W. I. Myers “Agriculture at Cornell-The First Century,” March 22, 1962.

⁶ Colman, Gould, “A History of Agricultural Education at Cornell,” 1962.

ippines College of Agriculture (UPCA) at Los Baños. This elaborate and large scale “Cornell-Los Baños project” was focused on rebuilding the UPCA, particularly its undergraduate program, during the period 1952 to 1960. It provided advanced education opportunities in the U.S. for 68 Filipino staff of UPCA, 35 of them at Cornell. What it did for CALS was to involve 35 professors in long-term assignments in The Philippines where they gained valuable experience with, and a better understanding of, agriculture abroad. These professors then brought this experience and new knowledge back to the Cornell academic environment. This project also stimulated CALS and the Ford Foundation to initiate a second UPCA program, called “UPCO,” which involved an additional 32 long-term and 26 short-term CALS professors from 1963 to 1972. Detailed information about both the “Cornell-Los Baños project” of the 1950s and the “UPCO project” of the 1960s is contained in a 500-page book by Director Kenneth L. Turk entitled *The Cornell-Los Baños Story*.⁷

From these examples, it is clear that a variety of prior international activities at CALS set the stage for the establishment of the International Programs office of CALS in February 1963. But there were external factors as well. Through State Department development agencies in the 1950s and the USAID beginning in 1960, the U.S. government organized to address institutional development for agricultural education and research in poverty-stricken nations. The USDA and the UN’s Food and Agricultural Organization (FAO) initiated training programs involving thousands of professionals from the developing world who were funded at U.S. universities for short-term technical training beginning in the late 1940s. At about the same time foundations such as Ford, Rockefeller and Carnegie made massive investments in U.S. universities to strengthen non-Western studies. Some of these same foundations also invested in agricultural research, eventually leading to the formation of 16 international agricultural research centers in the developing world and the formation of the Consultative Group for International Agricultural Research (CGIAR).

Based on increased international experience at CALS, strong student and faculty interest, and several external factors including the potential for new financial resources, the leadership at CALS decided to organize a formal international program.

⁷ Available at <http://eCommons.cornell.edu/>.

Establishment of IP-CALS (1960-1963)⁸

Institutional development is a major and complicated endeavor. So what did it take to establish IP-CALS in February 1963? Among other factors, it took the unique combination of a dynamic foundation leader, a development theorist, an enlightened administrator, an experienced visionary, an energetic program leader, and, of course, substantial financial support. It all took place between 1960 and 1963 when a remarkable series of activities laid the path to the establishment of the program. The several interlinked events that converged to make this possible are best viewed from the standpoint of some of the central figures involved. This fascinating story unfolds through their interrelationships and interactions.

Dynamic Foundation Leader Forrest F. Hill (1900-1988)

“Frosty” Hill was the head of the Department of Agricultural Economics from 1943 to 1952, Provost of Cornell from 1952 to 1955, and vice president of the Ford Foundation from 1955 to 1967 where he had primary responsibility for overseas programs. He was also a member



of the executive committee of Cornell’s Social Science Research Center that sponsored many international activities of the faculty in the 1950s, with major support from the Ford and Carnegie Foundations. In the fall of 1957, Hill presented a paper at Cornell entitled “The Human Factor in Economic Development.” At the conclusion of that talk, Hill said, “There is a need for specialization plus the more important kinds of political, social, economic and technological changes that must take place in a country as it moves from a less to a more economically developed stage.” He went on to say, “If I do

8 The content in this section draws heavily on the documents, reports, correspondence, and photos contained in the Division of Rare and Manuscript Collections of Carl A. Kroch Library at Cornell University, particularly from the papers of Dean Charles E. Palm and President Deane W. Malott.

not get at least one project proposal out of this talk, I shall be deeply disappointed in the resourcefulness and imagination of the Cornell faculty.”⁹

Shortly after, in 1960, the Ford Foundation announced a new “international training and research program for the support of non-western studies” which would, and did, provide major financial support to a few U.S. universities. It is apparent that Frosty’s connection with Ford Foundation worked to Cornell’s advantage. John Howard of the Ford Foundation received Cornell’s proposal for international studies, including International Agricultural Development, on October 23, 1961. The Foundation responded appropriately to the Cornell proposal on March 23, 1962 with a \$3.25 million grant to the Center for International Studies which included five years of funding of \$800,000 for International Agricultural Development, primarily for six new international professor positions in the rural social sciences. Both Howard and Hill made it clear in negotiations that a condition for funding the agricultural component was the establishment of IP-CALS with New York State funding. The Ford Foundation continued to provide major support for IP-CALS until 1974, and it was Frosty who arranged for Ford to provide funding for the 10-year UPCO project beginning in 1963. Frosty was one of the key architects and supporters of the CGIAR system and served as chairman of the board of the International Rice Research Institute (IRRI). He was also the Ph.D. committee chairman of John W. Mellor, who was another key player in the establishment of both IP-CALS and the Center for International Studies.

Development Theorist

John W. Mellor

Receiving a B.Sc., M.Sc. and, in 1954, a Ph.D. from Cornell University in Agricultural Economics, John Mellor also spent a year at Oxford University as a Fulbright scholar. He became an assistant professor of Agricultural Economics at Cornell in 1954 focusing his research on the role of agriculture in economic development,¹⁰ with special interest in India, and teaching internationally-oriented courses. Professor Mellor was also a member of Cornell’s Social Science Research Center and became one of the 10 members of the Cornell Internation-

⁹ Paper presented at the Second Convocation of the Graduate School of Cornell entitled “The Human Factor in Economic Development,” October 14, 1957.

¹⁰ The American Agricultural Economics Association gave Mellor in 1968 its award for best published research to his paper “Towards a Theory of Agricultural Development” and in 1978 its award for research of enduring quality to his seminal book *The Economics of Agricultural Development*.



al Affairs Committee that was established in October 1960 by the Dean of the Faculty (who was also the Dean of the College of Arts and Sciences), Professor C. Arnold Hanson, and chaired by Professor Lauriston Sharp who had established the Southeast Asia Program in 1950. In the spring of 1961, this committee recommended the creation of the Center for International Studies. After faculty and Board of Trustees approval, President Deane Malott established the Center in July 1961 with Professor Mario Einaudi of the Government Department as director, Professor John Mellor of Agricultural Economics and Professor Steven Muller of Government as associate directors, and Professor Richard Bradfield as a member of the first executive committee.

The prospect of financial support from the Ford Foundation and the planned establishment of what was later to be called the Einaudi Center as an umbrella for international activities were additional stimuli for CALS to establish IP-CALS. So, in April 1961, newly appointed Dean Charles Palm arranged for Professor Mellor to serve for several months as his advisor on what the College should do in the area of international agricultural development. During that period, Mellor was also a key member of the Bradfield Committee, which eventually made recommendations to the Dean. Working with Dean Palm, Professor Mellor authored the International Agricultural Development section of the CIS proposal sent to John Howard and Clarence E. Thurber of the Ford Foundation on October 23, 1961. On the subject of administration, Mellor wrote: “The magnitude of the total program proposed is such that additional administrative devices will be needed. It is therefore proposed that a program director, administrative staff for the program director and an advisory board be provided to administer and facilitate the various segments of the International Agricultural Development Program. A request is being made to the state of New York for financial support of this part of the program.”

John Mellor later became the Chief Economist of the U.S. Agency for International Development (USAID) and then Director of the International Food Policy Research Institute (IFPRI), one of the CGIAR Centers, and is still active with his consulting firm, John Mellor Associates, Inc.

Enlightened Administrator
Charles E. Palm (1911-1996)

Appointed CALS Dean in July 1959, when the first Philippines project was coming to a close, Professor Charles Palm quickly realized that the time was right to focus on the international dimension of CALS. Land Grant Association papers presented in Washington in 1960 and 1961 on the international dimension of U.S. universities likely influenced his decision. He later said that the question then was “how should we organize to provide our faculty with opportunities to participate and learn about the major problems of agriculture in the developing world, and, at the same time, permit them to provide leadership, working with friends in other lands?” To get an answer, he asked CALS departments in the fall of 1960 to form internal committees to study the problems of training students for international agricultural development and to report back to him. Those reports pointed to the need for more intensive study, so on



May 1, 1961, Dean Palm appointed a 14-person faculty committee chaired by Professor Richard Bradfield with Professor John Mellor providing special assistance. In Palm’s own words: “We asked the Bradfield committee to advise the administration and the faculty as to whether we should develop a program of identifiable dimension as a college responsibility, or whether we should leave it to the individual faculty member, if interested, to work out his own terms of participation, probably as a member of someone else’s team.”¹¹

By June of 1962, shortly after Ford Foundation support to Cornell for international activities was announced, Dean Palm wrote: “Opportunities for participation in international agricultural development increase as global agriculture becomes more of a reality. The needs of people for more food and fiber are being recognized in all nations, and the agricultural colleges of this nation can provide the needed technical assistance. Our young people are displaying interest in training for future careers in world agriculture; more and more students from other lands come here to study our methods and technology for adapted use in their own countries. The college is fortunate in the support it re-

¹¹ *Remarks by Dean Palm at the retirement party of K. L. Turk, May 16, 1974.*

ceives from the state, foundations, and other sources to coordinate and expand its continuing role in international agricultural development.”¹²

In his charge to the Bradfield committee, Palm notes that Professors Bradfield and Mellor, by virtue of being on the University International Affairs Committee, are “in an excellent position to see how our activities might fit into the greater Cornell picture.”

Experienced Visionary Richard Bradfield (1896-1981)

A distinguished agronomist, Richard Bradfield had considerable international experience and served as a consultant in agricultural sciences to the Rockefeller Foundation from 1941 to 1955 starting in Mexico. Like Mellor, he



was a member of Cornell’s International Affairs Committee in 1960-61, had the respect of both Dean Palm and the faculty, and was, therefore, a natural choice to chair the Dean’s committee on the role of the College of Agriculture in international agricultural development. This committee, which established the parameters of the future IP-CALS program, was composed of the following: N. C. Brady, O. C. French, D. B. Hand, G. C. Kent, G. W. Hedlund, O. Larson, J. P. Leagans, J. W. Mellor, R. P. Murphy, R. A. Polson, H. H. Schwardt, F. H. Stutz, K. L. Turk, and R. Bradfield (chairman). W. K. Kennedy represented the administration “should he be needed.” Four major subcommittee reports were organized into the final “Bradfield Report” that was presented to Dean Palm in early June 1961.

The major recommendations of the Bradfield committee, which established the basis of what IP-CALS was to become, were summarized as follows:

- That a program director be named by the Dean of the College to be responsible for any administrative aspects of international agricultural development programs and that an advisory committee be appointed.
- That the College provide a comprehensive, quality graduate program for training foreign and American students for service in international agricultural development.

12 New York State College of Agriculture Annual Report, 1961-62.

- That cooperative contract arrangements be developed with one or two foreign universities for the purpose of developing these institutions into regional centers.
- That the College take special interest in The Philippines College of Agriculture at Los Baños and explore further cooperation.

Professor Bradfield also chaired the committee appointed by Dean Palm in 1961 to review the possibility of a second institution-building project with the University of The Philippines College of Agriculture. In addition, he was a member of the Board of Trustees of the Rockefeller Foundation from 1956 to 1961 and played an important role in the establishment of IRRI, the International Maize and Wheat Improvement Center (CIMMYT) and the International Institute for Tropical Agriculture (IITA). He retired from Cornell in 1962, several months before the birth of IP-CALS. Today, Bradfield can be considered the father of IP-CALS.

Energetic Program Leader Kenneth L. Turk (1908-1990)

Professor Kenneth L. Turk was the head of the Department of Animal Science from 1945 to 1963, spending a year with the Cornell project in The Philippines in 1954-55. He was appointed to the Bradfield committee in May 1961 and became involved with both departmental and college issues related to the organizing of international agriculture at Cornell. His past administrative experience and management reputation made him an excellent choice for director of the newly proposed International Agricultural Development Program. After approval and financial support was obtained from Governor Nelson Rockefeller and the NYS Legislature, Professor Turk was officially appointed director on February 1, 1963 serving concurrently as head of Animal Science until June 30, 1963 and moving to 102 Roberts Hall (next to the office of Dean Palm) on September 26, 1963. In Ken Turk's own words in the 1962-63 CALS annual report, "The major responsibility of the director of International Agricultural Development is to coordinate the various activities and administer the diverse in-



ternational responsibilities of the College of Agriculture under the policies established by the Dean and Directors of the College.”

The earlier mutual decision to launch a second Philippines project had given added impetus to the establishment of the IAD Program since this activity would need a management home. So, in his first few months as director, Professor Turk took full responsibility for finalizing the plans for the University of The Philippines-Cornell Graduate Education Program, which was subsequently funded by the Ford and Rockefeller Foundations on July 1, 1963. By mid-1963, Director Turk had already established both the undergraduate and graduate programs in IAD. He remained as director until compulsory retirement on June 30, 1974 after which he was succeeded by five other directors (*Table 1*).

Director Turk helped lay the foundation of IP-CALS and contributed significantly to its viability, growth, accomplishments and enduring quality. He paid close attention to the recommendations of the Bradfield Committee and quickly molded them into a coherent international program. His total dedication, energetic leadership, bold initiatives, and insistence on quality were as equally applied to the newly established UPCO program in The Philippines as they were to the establishment of a first-class, on-campus international education program at Cornell.

Table 1 - Directors of International Programs, NYS College of Agriculture and Life Sciences, Cornell University, February 1963–October 2013

Director of International Programs		Tenure	
Name	Title	From – To	(months)
Kenneth L. Turk	Professor, Animal Husbandry*	Feb. 1963 – Jun. 1974	137
Edwin B. Oyer	Professor, Vegetable Crops*	Aug. 1974 – Jan. 1977	28
Joseph F. Metz, Jr.	Professor, Agricultural Economics	Jan. 1977 – Aug. 1982	67
Larry W. Zuidema (Acting)	Associate Director, IAP	Aug. 1982 – Sept. 1982	2
Edwin B. Oyer	Professor, Vegetable Crops*	Oct. 1982 – Dec. 1987	62
E. Walter Coward	Professor, Rural Sociology*	Dec. 1987 – Nov. 1989	23
Larry W. Zuidema (Acting)	Associate Director, IAP	Nov. 1989 – Oct. 1990	12
Norman T. Uphoff	Professor, Government	Oct. 1990 – Jun. 2001	128
W. Ronnie Coffman	Professor, Plant Breeding & Genetics*	Jul. 2001 – to date	148

* Former department chair

Program Characteristics

Based on Cornell's past experience, the deliberations of the Bradfield Committee, and the leadership of Director Turk, several program characteristics defined IP-CALS from the beginning and remained relevant over time. Those described below are: (1) clear objectives, (2) an integrated structure, (3) designated international professors, (4) an on-campus educational focus, (5) student research abroad, (6) comprehensive faculty involvement, and (7) diversified funding.

Clear Objectives

The following were the four initially declared objectives of IP-CALS that guided the development of program elements for much of the first 50 years of the program.

- *Develop a comprehensive program for education and training American and foreign undergraduate and graduate students to work in international agricultural development.* This was nearly identical to a recommendation of the earlier Bradfield Committee and is similar to a current objective.
- *Develop a program of basic and applied research in the biological, natural, and social sciences applicable to agriculture in low-income countries.* This is similar to a current objective.
- *Develop a program of direct cooperation with universities in other countries to assist in the development of their staffs and facilities.* This was similar to an earlier Bradfield Committee recommendation and legitimized the early establishment of the second Philippines project; however, this objective could not be sustained primarily because funding agencies moved away from supporting large institution-building projects by the late 1970s.
- *Develop an exchange of graduate students and professional staff members between Cornell and cooperating universities in other countries.*

In practical terms, IP-CALS directors and staff spent most of their time coordinating the academic program in International Agriculture and Rural Development, identifying and securing funding for CALS international activities on behalf of faculty, and managing and coordinating CALS interdisciplinary, international projects and other activities along with faculty leaders.

Integrated Structure

As early as 1962, Dean Palm referred to the emerging IP-CALS program as the “fourth dimension” of CALS, meaning that it would be integrated into the college along with research, education, and extension. This fourth dimension designation gave the program high visibility and status and sent a message to all that CALS was fully committed to this activity. In reality, the director of IP-CALS was on an administrative par with the directors of research, education, and extension and attended the Dean and Directors’ team meetings each week as an officer of the College. The distinction among these directors was that IP-CALS was created by NYS and the College, while the other units were established by the U.S. Congress with mandated financial support.

International Professors

One of the most distinguishing features of IP-CALS was the early designation of International Professors in CALS. This started with Ford Foundation support for six new faculty positions in 1962 in the rural social sciences: Professors John W. Mellor (Agricultural Economics), Robert Polson (Rural Sociology), and J. Paul Leagans (Education) moved to new positions while Professors Thomas T. Poleman (Agricultural Economics), Solon Barraclough (Agricultural Economics) and Frank W. Young (Rural Sociology) were newly hired for these positions. With a second Ford Foundation grant in 1966, linked to the Latin American year, four new faculty positions were added in the agricultural sciences: Professor Loy V. Crowder (Plant Breeding) was supported while Professors Matthew Drosdoff (Agronomy), Robert E. McDowell (Animal Science) and David Thurston (Plant Pathology) were newly hired. Ten new faculty positions in seven departments were a “dean’s dream!” The Ford Foundation grants not only covered these 10 faculty salaries, but also provided each professor a package of support that included student assistantships, travel, and staff salaries. In their five-year, \$1.2 million grant award for continued support in 1968, the Ford Foundation added the condition that these international positions eventually be supported by New York State. By 1972, with the cooperation of Nelson Rockefeller (who personally visited IP-CALS in the late-1960s) and the NYS Legislature, nine faculty lines were shifted to NYS support as “ear-marked” international positions. Over time, as faculty departed, these line-item international positions were filled by other professors: Donald K. Freebairn replaced Barraclough, Lin Compton replaced Leagans, Armand van Wambeke replaced Drosdoff, W. Ronnie Coffman replaced Crowder, Steven Kyle replaced Free-

bairn, Robert Blake replaced McDowell, Milton Barnett replaced Polson, and Randy Barker replaced Mellor. The idea of identifying international professors continues today with about 70 CALS faculty now having the designation, representing nearly all CALS departments in Ithaca and Geneva.

Education Focus

“Give a man a fish and you feed him for a day: teach a man to fish and you feed him for a life-time” was an old adage that was used to explain the rationale behind the development of a strong on-campus education program in international agriculture. A 28-minute film produced by IP-CALS called “Teach a Man to Fish” explained this to audiences at Cornell, in the U.S., and abroad. Director Turk often proclaimed that “...the CALS international program is right here on the Cornell campus and what we do abroad is meant to feed into this program in the form of international experience for faculty and education and research opportunities for students.” This approach distinguished Cornell from many other U.S. universities whose international programs were often described by them as a series of projects abroad. A common denominator for the IP-CALS educational program was, and continues to be, “leadership development” which was emphasized through course offerings, opportunities abroad, and exposure to international leaders through seminars and workshops at Cornell.

Student Research Abroad

Encouragement and support for both U.S. and international students to conduct their thesis research in the developing world was one of the early hallmarks of IP-CALS. The idea was to focus U.S. students on development issues and to allow international students the opportunity to address the agricultural problems of their own countries. Over the first 25 years, the numbers of CALS graduates conducting research abroad in any one year steadily increased and ranged from 38 to 102. Early opportunities for thesis research abroad included (1) the UPCO project that provided the support for 23 U.S. and 11 Filipino students to conduct their M.S. and Ph.D. research in The Philippines, (2) the long-term Ford Foundation support for the 10 international professors that included funding for thesis research abroad, and (3) the final Ford Foundation grant to the program in 1974, specifically for thesis research abroad, in which 28 Cornell Ph.D. candidates were supported. In addition, in the mid-1970s, the Rockefeller Foundation funded a unique and successful interdisciplinary project that supported six Ph.D. candidates from six disciplines to conduct studies on maize in collaboration with CIMMYT in Mexico. This experiment was not repeated pri-

marily due to high transaction costs and the difficulty of communications and collaboration across disciplines. *LA Mimeograph* #59 contains a 1977 report written by the six students entitled “An Interdisciplinary Approach to International Agricultural Training.”

Faculty Involvement

All of the directors of IP-CALS would probably agree that, while strong leadership was required, comprehensive faculty participation was the key ingredient to the success of the program in meeting its objectives. Some examples of how faculty participation was part of the fabric of IP-CALS are:

- IP-CALS was originally defined by the Bradfield faculty committee.
- IP-CALS was mandated to have a faculty advisory/steering committee that usually met at least two times per year for many years.
- The faculty members of the Graduate Field of IARD set policy and included a curriculum committee to support the academic program.
- The 10 designated international faculty members taught many of the initial courses and, more importantly, contributed to the academic program beyond their disciplines, e.g., the IA 602 course, which usually involved about 5 professors and 30 students in a tropical field trip each year.
- Department International Agriculture Leaders (DIALs) provided a mechanism for two-way communication between IP-CALS and the academic departments.
- Three major faculty reviews of IP-CALS were conducted in 1971 (Cline Report), 1979 (Barker Report), and 1985 (Steering Committee Report).

In short, IP-CALS was always a faculty-driven and faculty-monitored activity of CALS.

Diversified Funding

The early support of The Ford Foundation significantly influenced the development of international institutions at Cornell University. By design or cumulative decision making, The Ford Foundation achieved an amazing level of synergy in its funding of Cornell international activities between 1962 and 1974. The Foundation provided major financial support for (1) the early years of both the Center for International Studies and IP-CALS, (2) the continuation of Cornell’s Southeast Asia and China Programs, and (3) the major 10-year institu-

tion-building project involving CALS and the University of The Philippines College of Agriculture at Los Baños. This synergy included support of IRRI, established in 1960 at Los Baños, whose first director, Robert Chandler, was a former Cornell professor. Early funding from New York State was also important with its line-item support of the IP-CALS director's position beginning in February 1963 and eventually funding nine designated international professors.

From the 1960s, the National Association of State Universities and Land-Grant Colleges (NASULGC, now the Association of Public and Land-Grant Colleges, or APLU), the Association of United States University Directors of International Agricultural Programs (AUSUDIAP, now the Association for International Agriculture and Rural Development, or AIARD) and others made major efforts to obtain federal support for international programs at U.S. universities. Over the years considerable federal support was delivered through PL 480, 211D, Title XII, Title VI, Collaborative Research Support Programs (CRSPs), Technical Support to Missions (TSMs) Joint Career Corps (JCCs), Matching Support Grants (MSGs), and other federal funding mechanisms. The Board for International Food and Agricultural Development (BIFAD) was eventually created as a U.S. Presidentially appointed advisory council to USAID to facilitate federal funding of universities for international agricultural activities. This board remains in effect today.

Between 1974 and 1995, IP-CALS diversified its funding base and eventually became involved in more than 60 sponsored international activities on behalf of CALS, both on-campus and abroad. About 20 of these projects were funded by USAID. Noteworthy was U.S. Department of Education Title VI funding for the Center for the Analysis of World Food Issues (CAWFI), which among other activities, supported the IP-CALS academic and outreach program over a nine-year period. Many sponsored project activities provided substantial

International Hunger Project

Locally, in 1987, the First Presbyterian Church in Ithaca offered to join with IP-CALS in a unique, annual small grant program for Cornell graduate students committed to conducting thesis research related to reducing international hunger. Through its first 26 years, this International Hunger Project supported the research of more than 80 graduate students with funding amounting to almost \$172,000. Most of the awardees were international students conducting research in their own countries.

financial support not only for the intended activities *per se*, but also for (1) Cornell and CALS in terms of indirect costs, (2) CALS departments in terms of faculty salary recovery, (3) the many graduate students who received assistantships and funds for research abroad, and (4) CALS faculty whose travels gave them considerable international experience to share with their students. In addition, the CALS deans generously returned, through budgeting, a share of the earned indirect costs to the program.

In the late 1980s, tight funding reduced the ability of IP-CALS to provide direct financial support for the designated international professors. Then, to the relief of all, came the generosity of Cornell alumnus Charles Feeney, permitting the establishment of the Cornell International Institute for Food, Agriculture and Development (CIIFAD). This major infusion of funding (a total of \$15 million) allowed many CALS and other Cornell faculty and graduate students flexible opportunities for international engagement. From the standpoint of the faculty, a CIIFAD project of a set amount of funding was worth about three times that of a similar amount for a USAID project because CIIFAD funds could not be used for salary recovery and overhead, which was the norm for federal funding. Currently, the Bill & Melinda Gates and TATA foundations and the UK Department for International Development are providing major financial support for CALS international activities in addition to USAID and others.

Campus Activities

The academic program in International Agricultural and Rural Development has been the constant centerpiece of the IP-CALS program over the past 50 years. Several other types of on-campus program activities include professional development, publications, conferences and workshops, and the hosting of sponsored programs.

Academic Program

The student-oriented IP-CALS program manifested itself in the establishment in 1963 of both graduate and undergraduate degree programs in International Agriculture and Rural Development. For undergraduates, a secondary specialization in this area was developed and approved by the CALS faculty on May 2 1963, with about 30 students enrolled by the 1970s. In 1998, the program was strengthened by offering CALS undergraduates the opportunity to major in International Agricultural and Rural Development in one of three concentrations: economics and development, agricultural and food systems, and environment and ecosystems. This IARD major is now rapidly growing and requires those graduating to do at least an eight-week internship overseas.

At the graduate degree level, a successful proposal was submitted to the Graduate School on May 24, 1963 for a graduate field of International Agricultural Development. Initially, this field offered only a minor, with students in the social sciences being required to select a minor professor in the biological sciences (and vice versa) to emphasize the need for interdisciplinary training. A Master of Professional Studies degree in International Agriculture and Rural Development was added by this graduate field beginning in 1974. The M.P.S. degree program admitted about 10 to 12 students each year, most of whom had at least two years of prior international experience (many with the Peace Corps), with each producing an internationally-focused project paper as part of their degree program. From 1974 to 1993, the distribution of these M.P.S. students' nationalities was: North American, 57 percent; European, 6 percent; Asian, 17 percent; African, 10 percent; and Latin American, 10 percent. In this period, about three-quarters of these students had advisors from the social sciences. While the post-graduation employment was known for only about half of the students in 1990, 94 percent of those reported that they were working in developing coun-

tries. The M.P.S. degree option in International Agricultural and Rural Development is now part of the new graduate field of Global Development.

The number of international courses listed for the program increased from 15 in 1963-64 to 43 in 1973-74 to 60 in 1983-84 when nearly 1,500 students were enrolled. Most of these courses were offered in CALS departments, and the newly established international professors initiated many. IP-CALS also introduced interdisciplinary courses such as IA 602, which included a two- to three-week trip to a country in the developing world. In 2001 there were two 2-week courses; the original one (started in 1968) to Latin America (now 4010/6010) and a second to India (now 4020/6020). It is interesting to note that Cornell University's current expressed desire to increase the international exposure of its students was already a reality in CALS beginning 45 years ago with the offering of IA 602 in 1968. From March 19 to 22, 2000, to celebrate over 30 years of the IA 602 Experience Latin America course, a Millennium Conference on Agricultural Development was held in San Jose, Costa Rica. Several course alumni and Cornell faculty attended this event and the proceedings were published by IP-CALS. The Administration of Agricultural and Rural Development (IA 603) was another interdisciplinary course designed to add an important leadership dimension to the education of M.P.S., M.S., and Ph.D. students interested in international careers.

In 2004 IP-CALS and Department of Communications (Jim Haldeman and Jim Shannahan) introduced a course in response to the September 11, 2001 attacks in the U.S. "Global Conflict and Terrorism" reviewed and discussed issues concerning global development and its relationship to conflict and terrorism. After several years of success the course was moved to the Department of Development Sociology with Chuck Geisler as the faculty member in charge. Today there are 33 separate or cross-listed courses listed under IARD taken by undergraduate and graduate students.

Professional Development

Prior to the establishment of IP-CALS, short-term professional development activities at Cornell were coordinated by Fred Morris in Cornell Cooperative Extension. This activity was shifted to IP-CALS at its inception and consisted of the programming of about 300 international visitors per year in the early years, most of whom were sponsored by USDA, the United Nation FAO, foundations, and others. Also shifted to IP-CALS at that time was a summer language and orientation course funded by the Rockefeller Foundation for their in-

coming scholars. Over the years, CALS provided a temporary professional home for from 30 to 80 longer-term international scholars each year, most of whom worked closely with Cornell faculty in scientific research projects for about a year. The most significant and enduring professional development activity is the Hubert H. Humphrey Fellowship Program described separately below. More recently, IP-CALS is involved with the Norman E. Borlaug International Agricultural Science and Technology Fellowship Program, which promotes food security and economic growth by providing research and training opportunities for scientists and policymakers from developing and middle-income countries. USDA partners with U.S. Land Grant universities, international research centers, and other institutions to provide up to 12 weeks of U.S.-based training for several Borlaug Fellows each year.

While many of the larger sponsored international projects involved professional development and training, IP-CALS, along with CALS departments, also conducted several stand-alone training activities such as:

- A short course for World Bank agricultural development staff;
- A course for the USDA titled The Keys to Agricultural Development;
- Four short courses on post-harvest losses for the USDA;
- Five short courses for Southeast Asia food executives for the USDA;
- A short course on private sector development in Costa Rica for USAID;
- A workshop for USAID agriculture, rural development and natural resources officers in cooperation with the Academy for Educational Development;
- Workshop training on communication planning and strategy for development for participants from 60 countries from 1980 to 1995; and
- Two short courses for Japanese extension agents for the Japanese Exchange Council.

Other organized short courses were conducted for professionals from China, Indonesia, Czechoslovakia, Bulgaria, Egypt, the Baltics and several other countries. Most of these professional development programs were designed to upgrade the trainees' areas of responsibility, as well as develop their leadership skills and help them to build networks of experts and opportunities for future collaborations with Cornell scientists.

Publications

Within months of the establishment of IP-CALS, two publications were available: “World Agriculture: Our Challenge” gave a rationale for the program and “Cornell’s Program in International Agricultural Development, A Fourth Dimension in the NYS College of Agriculture” described the on-campus academic and overseas education and research opportunities of CALS. Shortly thereafter, separate booklets were produced describing the IA undergraduate program, the IARD graduate program, and a program of study for a semester in-residence. In order for faculty to have an outlet for the publication of their ideas, papers, presentations and research results, three distinctive publication series were developed in 1963 and continued through the mid-1980s: *IA Bulletins* (37 issues), *IA Mimeographs* (116), and *IA Reprints* (journal articles only). By the early 1990s the program had also published four books, 20 annual issues of *International Agriculture and Rural Development Dissertation Abstracts*, three papers in the “World Food Issues” series, four editions of *World Food: a Directory of Educational Resources at Cornell University*. Also published were several booklets: “Meeting the Challenge of World Agriculture” (1986); “Status of the MPS IARD degree program: 1974 to 1993”; “Ph.D. Dissertations Relating to International Agriculture and Rural Development: 1973 to 1992”; and a number of program-related brochures. For several years, IP-CALS produced a quarterly newsletter to provide the campus with information about IP-CALS activities and an international professional roster to assist M.P.S. and other Cornell students in finding internationally oriented professional positions.

Conferences and Workshops

When IP-CALS was established, the world was focused on famines, the “Malthusian dilemma,” severe rural poverty, and economic stagnation. IP-CALS focused on these and other international issues through curriculum development and the organization and conduct of major workshops and conferences. The following are examples of those early activities.

In support of the Latin American Year at Cornell, IP-CALS held a conference on the topic of “Potentials of the Hot-Humid Tropics in Latin American Rural Development” from November 29 to December 3, 1965. The 70 participants from universities, research stations, foundations, government agencies, international organizations, and industry focused on social, economic and biological problems related to the development of rural areas in Latin America. The proceedings, edited by K. L. Turk and L. V. Crowder, were published by CALS in 1967.

In January 1968, a five-day conference was held at Cornell on “Strategies for Behavioral Change in International Agricultural Development.” This interdisciplinary conference focused on the process of modernization of agriculture in developing countries. The proceedings were edited by J. P. Leagans and C. P. Loomis and published in 1971 by Cornell University Press under the title *Behavioral Change in Agriculture*.

A conference entitled “Some Issues Emerging from Recent Breakthroughs in Food Production” was held at Cornell from March 30 to April 3, 1970. This activity was supported by the Ford Foundation and included 70 participants: 17 international, 21 from Cornell and 32 from other U.S. universities, foundations, U.S. government agencies and private organizations. A book of proceedings by the same title was edited by K. L. Turk and published by CALS in 1971.

An international symposium on “Communication Strategies for Rural Development” was held in Cali, Colombia in March 1974 jointly sponsored by Cornell University and the International Center for Tropical Agriculture (CIAT). Over 70 rural development and communication specialists from Africa, Asia, Latin America and North America discussed the flow and quality of communications to and from developing rural populations. Professors R.H. Crawford and W.B. Ward edited the proceedings, which were published in 1974 by Cornell University Press under the same title as the workshop.

A workshop on “Teaching Agricultural and Rural Development Administration (TARDA)” was held at Cornell in March 1977. The focus was on teaching graduate students in agricultural fields the management principles, skills and sensitivities required for leadership in the context of a developing world environment. The proceedings were published as *LA Mimeograph* # 54 in July 1977.

Hosting Activities

IP-CALS hosts two U.S. government supported activities on campus, Peace Corps recruitment and the Hubert H. Humphrey Program. The Peace Corps and Cornell University have cooperated in several activities since the early 1960s, including a training program for Cornell students planning to go to Colombia to serve as Peace Corps volunteers. Recognizing the need for highly qualified agriculturalists to serve in developing countries, the Peace Corps worked closely with the Association of U.S. University Directors of International Agricultural Programs (AUSUDIAP) to develop a “strategy contract” with several Land Grant universities. One of the first of these Peace Corps strategy contracts

was initiated in 1976 at Cornell and this relationship continues to this day. Under this contract, Peace Corps financially supports a former Peace Corps graduate student (usually M.P.S.-IARD) who provides information about Peace Corps opportunities, mostly in the area of agricultural and rural development, to students with international interests. This mutually beneficial working relationship enables Cornell graduating students who become volunteers to gain valuable international experience before making advanced graduate degree or employment choices. Since the beginning of Peace Corps, more than 1,600 Cornell students from all disciplines have served as Peace Corps volunteers with about 1,100 being recruited through the IP-CALS strategy contract. New dimensions of this Peace Corps/Cornell relationship include the Masters International Program, which combines Peace Corps experience with M.P.S. project preparation, and the Coverdell Fellowship program, which supports returned Peace Corps volunteers studying at Cornell University.

The Hubert H. Humphrey (HHH) Fellowship Program, which was formally established in 1978, is supported by the Department of State Bureau of Educational and Cultural Affairs under the guidelines of the Fulbright Fellowship Board, and is managed under a cooperative agreement by the Institute of International Education. IP-CALS, representing Cornell, successfully applied to be among the first 11 U.S. universities to host HHH scholars beginning in 1979. This program, which continues to this day, brings mid-career professionals to Cornell from developing countries in the broad area of agriculture and the environment to spend a year improving their subject-matter knowledge and leadership skills for public service as well as build professional networks and contribute to cultural understanding. Each year, the presence of about a dozen HHH professional fellows on campus serves as a unique resource to enrich the learning environment for Cornell students. From 1979 to 2013, 347 HHH scholars have been hosted at Cornell, many from countries previously closed to the U.S. or politically unstable.

Study Abroad

For several years, beginning in 1966, IP-CALS coordinated CALS study abroad and student exchange programs for its undergraduate students. Programs at that time involved the Swedish University of Agricultural Sciences in Ultuna, Sweden; the University of Reading in England; Trinity College of the University of Dublin in Ireland; the Monterrey Institute of Technology in Mexico; and the University of Buenos Aires in Argentina. While these study abroad programs are

no longer managed by IP-CALS, the program currently provides opportunities for many of the students in the IARD undergraduate major program to gain required experience in the developing world as part of their academic programs.

International Activities

With the exception of the Nanking (1924-31) and first Philippines (1952-60) projects, most organized international activities of CALS occurred after the establishment of IP-CALS in 1963. Nearly all were financed by foundation and government agency sponsors, either directly to Cornell University or through other entities such as another U.S. university, a development organization, a consulting firm, or a non-governmental organization. In the case of USAID sponsored projects, most were obtained by bidding in competition with other universities and consulting firms. In some cases, particularly beginning in the early 1980s, USAID required multiple-entity bidding, allowing them to gain access to a greater pool of resources and spread U.S. tax dollars across a wider spectrum of institutions. In the case of these sponsored projects, the development agenda of Cornell was, in effect, set by USAID's program objectives with Cornell's interests reflected in the projects on which it chose to bid.

Cornell faculty and their graduate students have long been involved in dozens of discipline-oriented (department level) international activities ranging from research to technical assistance to involvement in international conferences and meetings. It is not possible to document these individual activities; however, an average of 55 faculty members per year reported that they were abroad for a month or more during the period 1970 to 1990. This section, therefore, highlights some of the many multi-dimensional and interdisciplinary international projects in which CALS faculty and graduate students were engaged over the past 50 years. These projects typically dealt with capacity building by means of some form of assistance to research, education, extension and other public institutions involved with agricultural and rural development. Most of the larger projects were managed by IP-CALS on behalf of the faculty involved, with one of the faculty members designated as project leader. Those that involved external entities were usually managed by a multi-institutional program committee, whether or not Cornell was the lead institution. In the case of USAID and some other sponsored projects, project monitoring and periodic evaluations were required along with several other high transaction-cost activities. Projects where Cornell was not the lead institution also incurred high transaction costs associated with coordination of program components and inputs by disparate institutions.

In reviewing the organized international projects of CALS over the past 50 years, a prevalent theme that emerges is natural resources management, specifically water and soils resources and their conservation and use by poor farmers in the developing world. A second theme that pervaded many CALS international activities early on and for many years is the process of technology development and technology adoption by resource poor farmers. A third more recent theme is plant breeding and biotechnology. Projects were predominantly, although often not exclusively, one of the following types: institution building, education-oriented, research-oriented, and technical assistance.

Institution-Building

From the 1950s to the 1980s, USAID funded several university to university institution-building projects in the developing world. Institution building and strengthening was favored by IP-CALS as a *modus operandi* for project activities abroad, particularly after the successful ventures of this type in China and The Philippines. However, only three mainly institution-building projects were undertaken: UPCO in The Philippines, South Pacific Regional Agricultural Development (SPRAD) project in Western Samoa (now called Samoa), and the Bangladesh Agricultural Research Phase II project. But this was not the whole story since IP-CALS consistently sought to insert institutional-strengthening activities into more traditional technical assistance projects. The farming systems development project at the Visayas State College of Agriculture (VISCA) in The Philippines was a prime example of such a multi-faceted project.

IP-CALS major institution-building activity was with the University of The Philippines College of Agriculture at Los Baños (UPCA) from 1963 to 1972. The development of this project, called the University of the Philippines Graduate Education Program (UPCO), started in 1961 with discussions between the parties and ended just before the establishment of IP-CALS when only one detail still needed to be addressed — money. This became the task of Dean Palm and Director Turk and was finalized by June 1963 with the commitment by the Ford Foundation of \$3.5 million to Cornell and a similar amount to UPCA for this 10-year project. The Rockefeller Foundation and a World Bank loan to The Philippines provided additional resources at various times during the project. This comprehensive institution-building project involved a total of 32 Cornell professors and their families who served in The Philippines for about two years each and 26 who made shorter term contributions. Also, a total of 37 UPCA staff received assistantships or fellowships for graduate degree study in

the U.S., of which 21 attended Cornell. Unique to this project was the opportunity for 23 Cornell graduate students to spend up to two years in The Philippines (most with their professors) to conduct their thesis research. This feature, the flexible support from the Ford Foundation, and the proximity of IRRI are among the factors that contributed to the acclaim that UPCO achieved, and distinguished UPCO from this type of project funded by USAID at many other universities. The establishment of the Southeast Asia Regional Center for Graduate Study and Research in Agriculture (SEARCA) at the University of the Philippines at Los Baños (UPLB) in November 1966 meant that UPCO eventually had an impact on agricultural development not only in The Philippines, but also throughout Southeast Asia.

The SPRAD project in Samoa was a smaller and more narrowly focused institution-building activity for CALS. It started in 1980 with Felix Wendt, former Cornell Ph.D. student in Education, requesting USAID to fund a Cornell University relationship with University of the South Pacific College of Agriculture at Alafua, along with the University of Hawaii as the lead institution. Cornell focused on education, extension and communications while Hawaii concentrated on economics and the agricultural production sciences. This 12-year project involved the service of several long- and short-term Cornell faculty members in Samoa and several staff of USP-Alafua who earned advanced degrees at Cornell before returning to their USP positions. The goal was to strengthen the capacity of USP-Alafua to effectively serve the agricultural education and research needs of the South Pacific region involving 11 small countries. Today, USP-Alafua serves as the intellectual hub for agricultural education, training and extension in the South Pacific region.

CALS, as a subcontractor to the International Agricultural Development Service, assisted the Bangladesh Agricultural Research Council in strengthening agricultural research capabilities throughout that country from 1982 to 1987. This USAID-funded institutional strengthening project involved short-term technical assistance by several CALS faculty members, in-country short-term training, and short-term and advanced degree training for agricultural professionals from Bangladesh at Cornell and other U.S. universities.

Education-Oriented Activities

One of the largest education-oriented IP-CALS projects was the USAID funded Ugandan agricultural research and training project conducted by Cornell in cooperation with Ohio State University from 1992 to 1998. While

technically an institution-building project, Cornell's role was the management of the advanced education and training programs of Ugandan professionals in U.S. universities. During the project period, IP-CALS facilitated the advanced education and training of a large number of professionals from Uganda in agriculture and related disciplines, many of whom were staff of the College of Agricultural and Environmental Sciences at Makerere University in Uganda.

Another education-oriented project was conducted in cooperation with the Pan-American School of Agriculture at Zamorano in Honduras from 1993 to 1998, primarily with USAID support under its University Development Linkages Program. While this activity had many of the elements of an institution-building activity, it initially focused on the Zamorano educational program and involved a joint M.P.S. degree program with required projects being conducted there. Eventually becoming a CIIFAD activity, faculty-to-faculty mini-grants opened the door for many CALS faculty and students to conduct joint research in a tropical environment at Zamorano and in the surrounding region. A major focus of this institutional relationship was "sustainable farming systems." This cooperative activity continues today with the recent establishment of the G. Burke Wright (a Cornell alumnus) Scholarship Fund designed to encourage and strengthen the relationship between CALS and the Pan-American School of Agriculture at Zamorano through student and faculty exchanges.

In 2003, the Cornell International Institute for Food, Agriculture and Development (CIIFAD) developed a relationship with the Amhara Regional Agricultural Research Institute, Bahir Dar, Ethiopia in the area of integrated water management. This led to the establishment in November 2007 of a unique joint-Master's program on this topic between CALS and Bahir Dar University involving 20 Ethiopian students who eventually received a specially approved Cornell Master's degree without coming to Cornell. This was followed by a second group of 14 Ethiopian students who began their course of studies in January 2010. The goal of this program is to train professionals not only for effective and sustainable water management *per se*, but also for research and university professorships in Ethiopia. A Cornell Ph.D. degree program involving Bahir Dar University was recently established as a follow-on activity.

Alfred E. Mann Library of CALS has made unique and valuable educational contributions to international agriculture in recent years. In addition to significant acquisitions related to agriculture in the developing world, Mann developed two programs designed to provide digital access to scientific literature by scientists abroad. TEEAL, or The Essential Electronic Agricultural Library,

is described on its website as “a full-text and searchable database of articles from more than 275 high-quality research journals in agriculture and related sciences spanning several years. It arrives on an external hard drive that you can run on one computer workstation or make available to multiple computers via your local area network or intranet. Since 1993, TEEAL has been improving access at institutions with limited Internet time and/or financial resources. It is a searchable, offline, digital library that contains mainly agriculturally focused reference journals updated annually and delivered on the 1TB hard drive by Cornell University’s Mann Library. This non-profit digital library includes some of the most prestigious full-text agriculture journals that leading publishers have gifted to TEEAL users.”

Mann Library was also instrumental in the development of the AGORA system managed by FAO. Derived from the TEEAL collection at Cornell’s Mann Library and the World Health Organization’s online HINARI resource, AGORA provides Web-based access for developing countries to an outstanding digital collection of full-text articles from over 1,275 journals in the fields of food, agriculture, environmental science and related social sciences.

Currently, IP-CALS is undertaking five education-oriented international projects.

- The administrative/financial headquarters for the International Service for the Acquisition of Agri-Biotech Applications (ISAAA) has been located in IP-CALS since March 1992. ISAAA is a not-for-profit international organization that shares the benefits of crop biotechnology with various stakeholders, particularly resource-poor farmers in developing countries, through knowledge-sharing initiatives and the transfer and delivery of proprietary biotechnology applications.
- In 2002, IP-CALS initiated the CALS Transnational Learning (CTL) program that leverages experience and resources from Cornell’s College of Agriculture and Life Sciences to work with partner institutions mainly in Africa with the aim of increasing food security. CTL makes global connections by providing the learning and technical resources critical to building academic and research capacity, including video learning modules, videoconferencing, academic and communications support, and access to Mann library resources. Two notable CTL initiatives are the efforts by faculty in Cornell’s Department of Plant Breeding and Genetics to train African plant breeders at the African Center for Crop Improvement (ACCI) in South African, and the West Africa Center for Crop Improvement (WACCI) in Accra, Ghana, to

Global Spread of Ph.D. Students and Their Research Topics¹

While it is not possible to document the numerous individual research activities of the CALS faculty over the past 50 years, as a proxy we can analyze the international research of their Ph.D. graduate students by reviewing the characteristics of their dissertations. Based on internally published research for the 20-year period from 1973 to 1992, a total of 565 dissertations (an average of 28 annually) relating to international agriculture and rural development were completed, 80 percent with CALS faculty members as major advisors. These students came from 68 countries: 42 percent from North America, 25 percent from Asia, 14 percent from Sub-Saharan Africa, 13 percent from Latin America, and 5 percent from other areas. The dissertations covered topics relating to 71 countries: 34 percent focused on countries in Asia (mostly Southeast Asia), 25 percent in Latin America, 19 percent in Africa, and 16 percent on worldwide topics and issues. A total of 29 graduate fields of study were represented by these 565 dissertations: 55 percent in the social sciences, 41 percent in the biological sciences, and 4 percent in other areas. Fields with the largest number of dissertations related to international agricultural and rural development were: agricultural economics (99), development sociology (76), education (56) and nutrition (53).

1 From "Ph.D. Dissertations Relating to International Agricultural and Rural Development at Cornell University, 1973-92" by Stephen Sherwood, Mary Cochran and Larry Zuidema, July 1993, IP-CALS.

tackle issues related to maize, cassava, sorghum, millet, tomato, cowpea and other crops vital to the African diet.

- The Agricultural Innovation Partnership (AIP) project, financed by USAID, endeavors to increase food security and improve the quality of life in targeted regions of the Indo-Gangetic Plains by enhancing agricultural education and extension systems and creating a convergence of public and private enterprises working towards ensuring prosperity in the region. Launched in January 2011, AIP includes a consortium of agricultural universities and institutes in India, land-grant universities in the U.S., and various private enterprises involved in offering products and services to the agriculture value chain.

- The Obama-Singh 21st Century Knowledge Initiative, initiated in January 2012 with support from the United States-India Educational Foundation (USIEF), is a unique public-private partnership that seeks to implement reformed curriculum in emerging areas of agriculture and food security in two state agricultural universities of India: the University of Agricultural Sciences in Dharwad and the Sardar Vallabhbhai Patel University of Agriculture and Technology in Meerut.
- Advancing Women in Agriculture through Research and Education, or AWARE, initiated in 2012, seeks to ensure that gender is considered in all IP-CALS activities, including sponsored and academic programs, with the supposition that focusing on women in agriculture as an underserved group holds the greatest potential to make significant impact in rural development. W. R. Coffman committed the \$50,000 proceeds of the World Agriculture Prize he received in October 2013 to AWARE.

Research-Oriented Activities

Research activities related to international agricultural and rural development by CALS faculty and students occurred within several broad-based project activities. Many of these activities involved collaborative research with the 16 centers of the CGIAR throughout the world. This CGIAR collaboration was at least partly stimulated by the “Frosty” Hill Fellowship program, which provides modest financial support for CALS faculty and graduate student research with these centers. “Frosty” Hill grants are designed to increase the capacity of CALS faculty and graduate students to incorporate international experience and knowledge into their teaching, research and/or outreach activities.

In the late 1960s, USAID began funding several development-oriented research activities of U.S. universities. Notable was a nearly \$600,000 grant beginning in July 1970 for faculty and students in the Department of Agricultural Economics for research to determine the effect of new agricultural technology (related to the Green Revolution) on rural employment and incomes. In that same year, USAID funded three strengthening grants at Cornell under section 211(d) Title 11 of the Foreign Assistance Act of 1966. The Center for International Studies along with the College of Engineering managed a strengthening grant program dealing with Policies for Science and Technology in Developing Nations, which was funded in 1971 for five years at \$580,000. Beginning in 1970, IP-CALS, along with the Departments of Agricultural Economics and Agronomy, managed two strengthening grant programs. In Agricultural Economics, a

\$240,000 grant focused on sector analysis research on international agricultural trade, market structure and development, and rural employment in Asia and Latin America. In Agronomy, a \$500,000 grant focused on the study of cultural systems of tropical soils for crop production under various environmental conditions, primarily in Latin America.

For several years, beginning in 1981, CALS was a primary partner in two of the nine USAID-funded Collaborative Research Support Programs (CRSPs), Soil Management and Bean-Cowpea, and participated to a lesser extent in at least two other CRSPs, Small Ruminants and Sustainable Agriculture and Natural Resource Management. These research programs were designed to address issues of hunger and poverty through science and technology and continue to represent a unique partnership between U.S. universities, developing country institutions, and USAID. The Department of Agronomy's prior program of soil research management on the acid savannah soils of the cerrado region of Brazil in the 1970s eventually led to its involvement in the Soil Management CRSP for several years beginning in 1981 with a focus on Brazil. In addition, the Agronomy Department was involved in international research on soils of the tropics in Africa, Latin America and the Middle East in collaboration with the USDA under the Soil Management Support Services project in the 1980s. In a three-year USAID project in Panama led by Rutgers University, the Agronomy Department provided a faculty advisor in soils for the National Agricultural Research Institute. The Bean-Cowpea CRSP (now called the Pulse CRSP), managed by Michigan State University, involved faculty and students from the Departments of Plant Breeding and Genetics, Vegetable Crops, Plant Pathology, and Development Sociology in research and training activities in Ecuador and Guatemala from 1981 to 1992. The focus of this interdisciplinary activity in these countries was on agronomic, sociological and genetic dimensions of bean production and adaptation.

Since 2000, IP-CALS has been engaged with several major technically oriented international research projects: ABSPII, DRRW, NextGen Cassava, and Genomic Selection for Maize and Wheat.

ABSPII: The USAID-funded Agricultural Biotechnology Support Project II is a consortium of public and private sector institutions that supports scientists, regulators, extension workers, farmers and the general public in developing countries to make informed decisions about agricultural biotechnology. The project is designed to boost food security, economic growth, nutrition and environmental quality in parts of Africa and Asia. Under an ABSPII-asso-

ciated project entitled the “banana biotechnology research program in Uganda,” Cornell and Ugandan scientists are working to reverse the drastic drop in production of the Matoke banana in the traditional banana growing areas of central and southwestern Uganda as a result of diseases and pests.

DRRW: The Durable Rust Resistance in Wheat project, started in April 2008, is a global collaborative effort by 20 research institutions and led by Cornell University. The project seeks to mitigate the threat of Ug99 and other stem rust races through coordinated activities that will replace susceptible wheat varieties with durably resistant varieties, created by accelerated multilateral plant breeding and delivered through optimized developing country seed sectors. The DRRW works as the secretariat for the Borlaug Global Rust Initiative and is supported by the Bill & Melinda Gates Foundation and the UK Department for International Development (DFID). The international collaboration of the DRRW project is unprecedented in its scale and scope.

NextGen Cassava: Next Generation Cassava Breeding: Building the Future of Cassava in Africa (or NextGen Cassava) was initiated in October 2012 with support from the Bill & Melinda Gates Foundation and DFID. This research project is designed to increase substantially the rate of genetic improvement in cassava breeding and unlock the full potential of cassava, a staple crop central to food security and livelihoods across Africa (and elsewhere) using a new breeding method known as genomic selection that relies on statistical modeling to predict cassava performance before field testing and dramatically accelerates the breeding cycle. This project partners Cornell scientists with breeding programs at the National Crops Resources Research Institute in Uganda, the National Root Crops Research Institute and the International Institute of Tropical Agriculture, both in Nigeria, as well as the Boyce Thompson Institute for Plant Research at Cornell and the U.S. Department of Energy Joint Genome Institute of the Lawrence Berkeley National Laboratory in the U.S.

Genomic Selection: A project supported by the Bill & Melinda Gates Foundation entitled Genomic Selection: The Next Frontier for Rapid Genetic Gains in Maize and Wheat, uses genomic selection to boost the rate of variety improvements in maize and wheat and help smallholder farmers in “at-risk” areas in Africa, Asia and Latin America. Designed to help small farmers in developing countries increase their yields and improve their livelihoods, the project partners with the USDA and CIMMYT in Mexico.

In addition to IP-CALS research activities, The David R. Atkinson Center for a Sustainable Future at Cornell, through its Economic Development

Program, organizes and supports research in the area of international agricultural and rural development with the goal of expanding spheres of prosperity in a socially and environmentally sustainable manner.

Technical Assistance

CALS faculty have been in constant demand to provide technical assistance in developing countries either as private consultants or as part of their funded discipline-oriented research programs. Many faculty members have also provided international technical assistance within organized sponsored projects managed by their departments, IP-CALS and the Rural Development Committee. While classified as technical assistance projects from the standpoint of USAID, many projects allowed for research activities as well.

Through the USAID-funded Water Management Synthesis II project, Cornell faculty and graduate students from agricultural economics, rural sociology, agricultural engineering, and government focused on the socio-economic dimensions of small-scale irrigation systems, primarily in South Asia, during the period 1982 to 1987.

For the Irrigation Support Project for Asia and the Near East, CALS faculty provided technical assistance in the form of policy analysis, training, and applied studies from 1987 to 1994. This technical assistance project was funded by USAID and managed by Camp, Dresser & McGee International. The primary purpose of the project was to assist USAID Missions within these regions to improve the capabilities of regional institutions, develop innovative solutions to irrigation management problems, and disseminate the experiences and lessons learned.

The Farming Systems Development Project in the Eastern Visayas of The Philippines involved CALS, the Visayas State College of Agriculture (VISCA) and the Regional Department of Agriculture in a USAID-funded host country contract from 1982 to 1987. While classified as a technical assistance project, activities designed to improve the lives of poor upland farmers in the region involved a range of activities including on-farm research, farmer-to-farmer extension, training and education, and institutional strengthening. This project focused on the conservation of fragile natural resources, production systems for effective use of these resources, farmer involvement in research and extension, and the strengthening of institutional support for upland farmers in the region. From 1985 to 1987, CALS was also involved in the USAID-funded Farming Systems Support Project that involved several U.S. universities and USAID in

developing and disseminating the concepts and procedures for farming systems research projects throughout the developing world.

The USAID-funded Communications for Technology Transfer (CTTA) project was conducted in collaboration with the Academy for Educational Development from 1985 to 1990. CTTA was a pioneering effort by USAID to develop a cost-effective, institutionally sustainable approach to technology generation and transfer in developing countries. CALS provided technical assistance to the Agricultural Research Foundation of Honduras using an approach that combined farmer-focused technology adjustment with an integrated, coherent information campaign focused on upland areas of the country.

The Cornell Nutritional Surveillance Program was established in 1981 by the Division of Nutritional Sciences through a cooperative agreement with and support from USAID. This long-standing program involved several faculty and graduate students from CALS and the College of Human Ecology in an activity designed to develop the theory and practice of nutritional surveillance through policy, planning, recommendations, analytical research, and training in developing countries. First based in Washington, D.C., the program eventually moved to Ithaca and involved cooperative work in several countries. This comprehensive program involved many international agencies such as FAO, UNDP, WHO, and WFP. The Division of Nutritional Sciences was also involved in many other international activities relating to nutrition and health, nutrition policy, and food economics resulting in 53 documented international Ph.D. dissertations from 1973 to 1992 and numerous publications.

SRI-Rice started as an initiative under the Cornell International Institute for Food, Agriculture and Development (CIIFAD) in 2000 to explore the System of Rice Intensification (SRI), a set of practices for increasing the productivity of rice (and, more recently, other crops) by changing the management of plants, soil, water and nutrients. Currently, the program collaborates on projects in Africa, Asia and Latin America, including development of a global SRI research network, an SRI equipment innovation initiative, a collaborative West Africa scaling up program, and a regional SRI network for Latin America.

Cross-Cutting Programs

Three programs stand out for their distinctive and significant international dimensions: CIIFAD, Eastern Europe, and TACO-AN. Their activities cross over the focuses of institution building, education, research, and technical assistance

CIIFAD • The establishment of the Cornell International Institute for Food, Agriculture and Development (CIIFAD) in 1990 represented a welcome and significant change in Cornell's opportunities and approaches for addressing critical issues related to international agricultural and rural development. CIIFAD focused on the promotion of sustainable agricultural and rural development in the poorer countries of Africa, Asia and Latin America with the following goals: (1) knowledge generation, adaptation and dissemination; (2) human resource development; and (3) institutional strengthening for sustainable development. Funded by \$15 million in grants over a 15-year period from Cornell alumnus Charles F. Feeney through the Atlantic Philanthropic Service Co. Inc., CIIFAD was located in IP-CALS, but operated separately to encourage university-wide participation. Since CIIFAD activities were primarily within CALS, the director and associate director of CIIFAD also served as the director and associate director of IP-CALS from 1990 to 2001 at which time the director functions were separated.

The establishment of CIIFAD allowed Cornell faculty groups to organize interdisciplinary, problem-focused and collaborative programs based on their international interests and experiences. In essence, CIIFAD provided unprecedented opportunities for a large number of Cornell faculty members to contribute to sustainable development abroad while gaining a practical understanding of the process, possibilities and environment of development. It also provided scores of Cornell graduate students with well-funded and supported opportunities for thesis research abroad in the context of Cornell-defined project activities involving local collaborating institutions. One result was an enriched academic environment for Cornell students on-campus since many professors synthesized their CIIFAD experiences and brought these into their classrooms.

Most of CIIFAD's initial collaborative activities were country or sub-region based topical programs and many were based on previous Cornell activities abroad. Some early CIIFAD programs were:

- Regional sustainability strategies in the Dominican Republic;
- Sustainable smallholder horticulture development in Zimbabwe;
- Community-based sustainable agricultural development in Ghana;
- Conservation farming in the tropical uplands in The Philippines;
- Integrated conservation and development in Madagascar;
- Long-term strategy for sustainable agricultural and rural development in Indonesia;

- Indigenous intensive agricultural systems in Bolivia; and
- Sustainable agricultural and natural resource use in the hillside areas of Central America.

Over time, some CIIFAD projects changed their focus or were discontinued and others were added. But, more significantly, CIIFAD eventually developed thematic programs across regions allowing for many more smaller and focused activities. For example, the theme of agroforestry was managed by the Cornell Agroforestry Working Group, which supported on-campus courses, seminars and workshops as well as electronic outreach, student research abroad, and several collaborative mini-grant activities in India, Kenya and Madagascar. Examples of other themes were farmer-centered research and extension, food systems for improved health, and community-based natural resources management. Eventually, many of the CIIFAD programs reached a level of maturity that they were able to generate additional funding beyond CIIFAD contributions. Also, some programs were sustainable locally and continue to operate at a much reduced level to this day. However, CIIFAD no longer has the benefit of the massive grant support that enabled Cornell to expand its contributions to sustainable development unencumbered by donor micro-managed contracts and grants.

Today the CIIFAD mission is to strengthen the Cornell community's capacity for making significant contributions to sustainable global development by supporting multi-disciplinary research with a problem-solving focus, partnering with developing country institutions, and facilitating campus-wide dialogue on critical development issues. CIIFAD now has three focus areas: an on-campus weekly seminar series, student-faculty engagement abroad, and international program initiatives. Programs designed to engage students and faculty in collaborative, interdisciplinary activities abroad as part of the academic experience of Cornell students include:

- Student Multidisciplinary Applied Research Team (SMART) Program, which brings together teams of students and faculty from diverse disciplines and pairs them with firms, organizations, or community groups located in developing countries;
- Food System and Poverty Reduction Program sponsored by NSF's Integrative Graduate Education and Research Traineeship (IGERT) program;
- Food, Agriculture, and Nutrition Group (FANG) which promotes interdisciplinary research, teaching and outreach;

- Stimulating Agricultural and Rural Transformation (StART) initiative which assembles flexible working groups of faculty, students and external partners to address integrative themes of strategic importance; and
- Food for Nine Billion multi-platform media project that examines the challenges of food production in the future.

An additional five CIIFAD initiatives help build successful partnerships and improve agricultural systems in the developing world through collaborative research and education: the Cornell-Bahir Dar degree program in Ethiopia, the Pulse CRSP, the System of Rice Intensification (SRI), the West Africa Water Initiative, and the Tang-Cornell-China Scholars Program.

Eastern Europe Economic Transition • Beginning in 1974, the Jurzykowski Foundation provided funds to Cornell for several Polish and other Eastern European scientists to spend up to a year at Cornell to work with CALS scientists on common problems. Building on this and other short-term training activities at Cornell for Eastern European scientists, IP-CALS in 1990 established an Eastern European faculty committee to discuss the possibility of scientific exchanges with these newly liberated countries of the former Soviet Union. Four members of this committee traveled to the then-called Czechoslovakia and to Hungary in 1992 to explore education and research opportunities. In addition to several resulting exchange visits involving these and other Eastern European countries, CALS received funds from the Mellon Foundation in 1993 to assist the University of Nitra in Slovakia and Gödöllő University in Hungary to develop academic programs in the social sciences that would enable them to shift their focus from command-driven to market-driven economies. Several CALS faculty members in the social sciences spent a month each in Slovakia providing instruction in a specially designed institute for faculty and advanced students at Nitra University. In addition, the government of the Czech Republic arranged for CALS to make presentations at a major conference on the restructuring of agriculture in that country. These activities subsequently opened the door for many other mutually beneficial Eastern European education and research opportunities for several CALS faculty in Slovakia, Hungary, the Czech Republic, Romania, and Poland where the topics and level of research was already similar to that of CALS.

TACO-AN • The Tata-Cornell Agriculture and Nutrition Institute (TACO-AN) was established at Cornell University in 2013 by an endowment provided by Cornell alumnus Ratan Tata. The goal of the institute is to enhance the individual and institutional capacity of India in the areas of agriculture, nutri-

tion and rural development. While designed to engage broadly with the Cornell community, the institute is affiliated with CALS and managed by the Charles H. Dyson School of Applied Economics and Management. It is expected that this new Institute will support multidisciplinary action research and educational programs conducted by collaborative teams from Indian universities, government and non-government organizations, and Cornell University. The donor also provided an endowment to establish the Tata Scholarship Fund which will allow Cornell to provide financial aid to several Indian undergraduates a year to study at Cornell in scientific and other fields.

Concluding Remarks

While CALS international engagement activities transcend IP-CALS, this program formed the core of international activities of CALS and spawned and supported several other department- and faculty-level activities. Accordingly, CALS was involved in an incredible array of international activities. But, what did it all mean? What did IP-CALS really accomplish? Focusing only on what IP-CALS did for faculty and students of Cornell University, the following come to mind:

- Provided access to funding for international research and education that would have been more difficult without an organized international program;
- Expanded access to national and international research centers for cooperative research focused on agricultural and rural development abroad;
- Established Cornell University as “THE place to study” to prepare for international careers and leadership positions in agricultural development;
- Provided opportunities for faculty and students to have meaningful and rewarding professional experiences abroad;
- Developed the capacity within CALS for managing complex international projects at Cornell and abroad;
- Allowed CALS to remain at the forefront of international development issues;
- Made scientific and other contributions to New York State agriculture;
- Provided a solid foundation and framework for future international engagement by CALS.

But what about the achievements of IP-CALS for the developing world? Assessing the outcomes and impacts of IP-CALS activities here and abroad is more complicated and mostly subject to individual interpretation. However, some generalizations are possible. First, it has been universally accepted that CALS efforts to strengthen the University of The Philippines College of Agriculture over the period 1952 to 1972 were particularly helpful to our Filipino colleagues in strengthening that institution to adequately contribute, not only

to the agricultural development needs of The Philippines, but also, to those of Southeast Asia. Second, the cumulative results of advanced degree training of hundreds of international students over the years surely enabled them to better address their education, research and development needs towards providing sufficient low-cost food for their peoples. Third, the internationally-oriented dissertations of nearly 1,500 Cornell Ph.D. students represent a significant contribution to addressing agricultural and rural development problems of the developing world. And finally, CALS has produced more than its share of the leaders of national and international agricultural research and education institutions that are at the forefront of development abroad.

With respect to the future, IP-CALS is uniquely positioned to respond to Cornell University's new internationalization objectives and to provide an example for other units of the university as to what can be accomplished. The specific need for a focused international program in CALS remains much the same today as when it was initiated 50 years ago and will be even more necessary in the increasingly complex world of tomorrow.

After many years of international activities in CALS prior to 1963, the foundation of IP-CALS was laid 50 years ago. This foundation provided the guiding framework that permitted growth and change in the international dimension of CALS. All of this signifies the prospect of continued excellence in focusing CALS faculty and students on the development needs of the world around us in the years ahead. The author of this document shares the sentiments of former IP-CALS Director, E. Walter Coward, who recently said, "The International Agriculture Program (i.e., IP-CALS) has been an essential part of Cornell's worldwide contributions and I am proud to have been a part of it."