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University Economists Have Roles in International Agriculture

INTRODUCTION

University of Minnesota agricultural economists have long been active in research, teaching, and extension concerning farm management, agricultural prices and marketing, national farm policy, and international trade in farm products. This work continues. In addition, there has been a growing interest and involvement in the last 20 years by the Department of Agricultural and Applied Economics in the problems of agricultural development in the world's less developed countries (LDCs). This involvement occurs because of humanitarian concerns, because of trade-related dimensions of development and because the Minnesota expertise can be effectively used in dealing with some of the agricultural problems in the LDCs.

This issue describes major agricultural development issues, the need for economic research for effective development planning and programs, and the accompanying role of the Department of Agricultural and Applied Economics at the University of Minnesota. Similar examples could be drawn from many agricultural economics departments in U.S. land-grant universities.

DEVELOPING NATIONS AND U.S. UNIVERSITIES

Lee Martin[1]

Some Problems and Programs

The poor nations of the world face many problems in seeking to improve their well being. To alleviate some of these problems, most developing nations are striving to increase agricultural output which can provide more food for expanding populations, more raw materials for local industries, and more commodities for export to earn needed foreign exchange.

Insufficient food supplies for ever expanding populations is a pervasive problem for many of the LDCs. The tragic consequences are known and decried universally. Growing more food where it is needed is a major objective of economic development programs.

In many LDCs the principal manufacturing and industrial activities depend on locally produced supplies of raw materials. To develop and expand an industry requires ever-increasing supplies of the raw material. For example, to expand cotton spinning, weaving, and dyeing industries requires more and more raw cotton.

Many needs of poor nations for industrial products can be met most economically by importing. But, this requires foreign exchange and obtaining foreign exchange requires exports. So, to import a nation must also export. Increasing exports means increasing production of export commodities, often agricultural commodities.

More recently, LDC development activities have focused on providing more and better employment opportunities for rural people. A closely related goal is to increase per person incomes in rural families. These latter two goals call for greater concern with the impacts of agricultural development programs on rural employment and rural incomes. Adding employment and income goals to the earlier concern for more output increases the opportunities for economists to help solve LDC problems.

What We Can Do

To understand how the skills and knowledge of American universities can help LDCs solve their problems, consider the functions of state universities in society.

• **Basic and applied research.** Fine universities have the scientists and scholars to conduct basic and applied research and this is where much of the world's basic research is carried on. Universities, such as the University of Minnesota, also have an unparalleled capacity for applied research to help solve important problems of society. As far as agricultural and rural problems are concerned, this capacity is shared by the U.S. Department of Agriculture and the more than 60

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state universities. This capacity includes research competences in the biological, physical, and social sciences, including the capacity for focusing more than one discipline on a particular problem.

- Better known to the public is the university's earliest important mission — **undergraduate and graduate teaching.** One criterion often used to distinguish a college from a university is the university's graduate teaching program in many important scientific disciplines. Both colleges and universities strive for excellence in undergraduate teaching, but graduate teaching in universities is tied very closely to the basic and applied research being conducted by faculty and graduate students. Through undergraduate and graduate programs of instruction, colleges of agriculture train most of the professionals who make up the support system for U.S. agriculture.
- A third function is the performance of **service activities** such as information dissemination and application (extension) and off-campus educational programs, community services, and consulting (providing advice to public and private decisionmakers). In agricultural colleges, information dissemination is closely linked to research and graduate teaching and is a crucial element in the support system for U.S. agriculture. Consulting is also an important function, especially in LDCs. American agricultural scientists and scholars are often called on, as consultants, to advise LDC decisionmakers who are trying to develop projects, programs, and policies to make agricultural development take place.
- U.S. universities also assist developing countries in **building overall institutional capacity for agricultural development.** This means helping LDCs organize whatever schools, training programs, research and testing facilities, communication networks, and technical agencies are appropriate for them. This must be done quickly, with coordination, to provide the developing country a complete operating system as a basis for agricultural development. The U.S. land-grant institutional structure evolved over nearly 100 years as a result of many public and private decisions. Institution-building in the LDCs must happen more quickly. While the U.S. experience may provide useful insights, each developing country needs an agricultural support system that responds to its own cultural heritage, its resource endowments, and its special set of national goals.

Because university scholars have studied the evolution of the U.S. agricultural system, this knowledge can be the basis of advice to developing countries attempting to evolve their individual agricultural support systems.

American universities are not budgeted through usual sources (state appropriations or federal Hatch Act funds) to work on international agricultural development. To become significantly involved in international work, universities must be funded and invited by donors such as the Agency for International Development (AID), the foundations (Ford and Rockefeller are large contributors to world agriculture), Agricultural Development Council (ADC), and the World Bank. This is the usual source of financial support, whether for university-wide projects, individual faculty research or consulting, or training of graduate students from the developing countries.

In an effort to enhance the capacity of U.S. universities to assist in this institution building, Congress enacted a new source of funding in 1975 in the Title XII Amendment to the Foreign Assistance Act of 1961. Two missions to use resources of the American scientific community have been assigned to the Title XII program: to conduct research on broad problems that affect several countries or regions; and to develop and strengthen national agricultural research systems in the developing countries. The proposed Title XII budget for the 1978-79 fiscal year is around $180 million.

Perspective for the Future

Most developing countries will develop their own institutions for applied agricultural research, undergraduate and graduate instruction, and information dissemination. It may or may not be a replica of the U.S. agricultural college system. Each society needs a system that responds to goals based on its economy, natural resources, cultural values.

Agricultural development requires massive institution building efforts that take years and many types of skills from those serving as advisers. University faculties can assist in training the faculties for training institutions. They can advise on setting up national and branch research stations and establishing needed research programs. They can advise on setting up extension services and in establishing extension programs; they can assist in building an organization that has both the capacity and the will to provide the bases for agricultural development.

Because of the large number of highly trained workers each developing country will require, it may be impossible to hire foreigners to meet these needs, or even to send enough of the LDC's own young people abroad for undergraduate and graduate education to meet these needs over the next 20 years. Developing countries may find it most economical to use whatever external assistance is available, including professionals from U.S. universities, to develop their own training capacities.

Agricultural economics departments and agricultural economists will play an important role in developing the required training, research, and extension capacities outlined here. They will also play a key role in agricultural sector planning; that is, in the economic planning of agriculture, including the commodity subsectors and the relations of the agricultural sector to the rest of the economy.

THE ROLE OF ECONOMIC RESEARCH IN AGRICULTURAL DEVELOPMENT

Vernon W. Ruttan[2]

New knowledge enhances the capacity of peoples to improve their levels of living and is the cornerstone of economic development. New knowledge leads to technical and institutional changes, such as introduction of more productive farming techniques and expanded or redirected educational systems. Knowledge can be substituted for resources — an efficiently managed farm can produce more than an equivalent, but poorly managed one.

Knowledge permits replacement of expensive resources with less expensive, more abundant resources. When the United States was settled, land was abundant and labor was scarce. Farming practices evolved and machinery was developed to permit one person to farm more and more land.

Knowledge may release the constraints on growth imposed by a shortage of resources by developing techniques to make resources go further or by finding ways to use previously inaccessible resources. An example is the development of the taconite (low grade ore) industry in Minnesota when rich iron ore deposits were diminishing.

Before World War II the United States and most of the other advanced countries in Western Europe and Japan established systems that created and disseminated new knowledge.

In the U.S. agricultural sector the latest in agricultural advancements usually originate in experiment stations, and agricultural extension services. Most developing countries had no contact with either experiment stations or extension services until the 1950's and 1960's.

Research at the University of Minnesota has been a significant source of new knowledge leading to advances in agricultural technology and to improvements in worldwide agricultural programs.

International Centers

A network of international agricultural research institutes and genetics resource centers in developing countries has developed from joint efforts of organizations and governments (table 1). In addition to being important international centers for the development of agricultural technology, these are vital communication links between research institutions in developed and developing countries.

Benefits from these international centers flow back to the United States. By the early 1970's, a substantial feedback of knowledge had begun. Some of the new high-yielding wheat varieties, such as Era wheat grown in the Upper Midwest, are a product of this feedback.

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Table 1. Present structure of the international agricultural research network

Center	Location	Research	Coverage	Date begun
IRRI (International Rice Research Institute)	Los Banos, Philippines	Rice under irrigation, multiple cropping systems; upland rice	Worldwide, special emphasis in Asia	1959
CIMMYT (International Center for the Improvement of Maize and Wheat)	El Batan, Mexico	Wheat (also triticale, barley); maize (also high-altitude sorghum)	Worldwide	1964
IITA (International Institute of Tropical Agriculture)	Ibadan, Nigeria	Farming systems; cereals (rice and maize as regional relay stations for IRRI and CIMMYT); grain legume (cow-peas, soybeans, lima beans, pigeon peas); root and tuber crops (cassava, sweet potatoes, yams)	Worldwide in lowland tropics special emphasis in Africa	1965
CIAT (International Center for Tropical Agriculture)	Palmira, Colombia	Beef; cassava; field beans; swine (minor); maize and rice (regional relay stations to CIMMYT and IRRI)	Worldwide in lowland tropics, special emphasis in Latin America	1968
WARDA (West African Rice Development Association)	Monrovia, Liberia	Regional cooperative effort in adaptive rice research among 13 nations with IITA and IRRI support	West Africa	1971
CIP (International Potato Center)	Lima, Peru	Potatoes (for both tropics and temperate regions)	Worldwide, including linkages with developed countries	1972
ICRISAT (International Crops Research Institute for the Semi-Arid Tropics)	Hyderabad, India	Sorghum; pearl millet; pigeon peas; chickpeas; farming systems; groundnuts	Worldwide, special emphasis on dry semiarid tropics, nonirrigated farming. Special relay stations in Africa under negotiation	1972
IBPGR (International Board for Plant Genetic Resources)	FAO, Rome, Italy	Conservation of plant genetic material with special reference to crops of economic importance	Worldwide	1973

Table 1 (continued). Present structure of the international agricultural research network

Center	Location	Research	Coverage	Date begun
ILRAD (International Laboratory for Research on Animal Diseases)	Nairobi, Africa	Trypanosoiasis; thaileriasis	Mainly Africa	1974
ILCA (International Livestock for Africa)	Addis Ababa, Ethiopia	Livestock production system	Major ecological regions in tropical zones of Africa	1974
ICARDA (International Center for Agriculture Research in Dry Areas)	Lebanon Syria Iran	Crop and mixed farming systems research, with a focus on sheep, barley, wheat, broad beans, and lentils	Worldwide, emphasis on the semiarid winter precipitation zone	1976
		Associate Centers		
AVRDC (Asian Vegetable Research and Development Centre)	Shanhua, Taiwan	Vegetable improvement (Mung beans, soybean, tomato, sweet potato, Chinese cabbage, white potato); cropping systems	South, Southeast, and South Asia	1971
IFDC (International Fertilizer Development Centre)	Muscle Shoals, Alabama, U.S.A.	Development of new and improvement of fertilizer materials and processes	Worldwide	1975
IFPRI (International Food Policy Research Institute)	Washington, D.C.	Food policy	Worldwide	1975

Source: J.G. Crawford, "Development of the International Agricultural Research System," in *Resource Allocation and Productivity in National and International Agricultural Research,* ed. Thomas M. Arndt, Dana G. Dalrymple, and Vernon W. Ruttan (Minneapolis: University of Minnesota, 1977), pp. 282-3. Crawford's basic material was reproduced in Nicholas Wade, "International Agricultural Research," *Science* 188 (May 9, 1975):587. Budget data for 1976 were obtained from the Secretariat of the Consultative Group on International Agricultural Research, World Bank, Washington, D.C.

Research at Minnesota
Agricultural Productivity

Often research efforts in the Department of Agricultural and Applied Economics have been aimed at higher productivity in agriculture. One of these projects dealing with **sources of productivity growth** in the agriculture of developed and developing countries was conducted primarily at the University of Minnesota. It involved collaboration, however, with researchers from both western Europe and Asia who traveled here as post doctoral researchers.

An example of the findings of these studies is the relationship between land and labor productivity in various countries as of 1970. These countries were chosen because reasonably reliable data are available. To compare total agricultural output for such a diversity of countries, output of all commodities was transformed into a common measure (details are available from the author).

Figure 2 summarizes results. The point marked USA indicates that one worker in the United States produces about 160 units of agricultural output, compared to about 50 units for one worker in Argentina or nearly 200 units for one worker in New Zealand.

Output per land unit is read off the vertical axis. For the United States it shows that 1 hectare of land (a hectare is 2.5 acres and the common designation for acre around the world) yields about one unit of agricultural output. Output per hectare in Argentina is a little less and in New Zealand a little more than in the United States. But in Taiwan and Japan more than ten units of agricultural output are produced per hectare. These two countries fall near the low end of the horizontal scale that measures output per worker.

Notice that most of the European countries appear in the middle portion of the figure. This means that their output per worker is less than in the United States but more than in Taiwan or Japan. But, their output per hectare is more than in the United States and less than in Taiwan and Japan.

The figure is labeled "The Japanese-type Group" in the upper left corner, "The European-type Group" in the center, and "The American-type Group" at the bottom to classify countries according to their output per hectare and per worker.

Most of the countries of the world are clustered in the lower left corner, caught in the low productivity trap, with low land and labor productivity.

Figure 1. Historical growth paths of agricultural productivity in the USA, Japan, Germany, Denmark, France, and the UK, 1880-1970

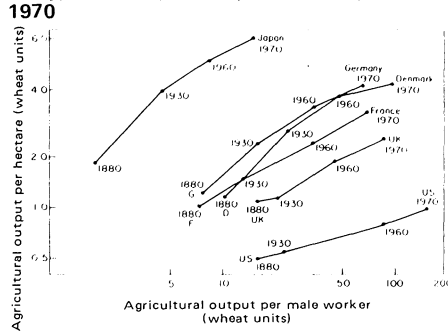

Figure 1 Source: Vernon W. Ruttan, Hans P. Binswanger, Yujiro Hayami, William Wade and Adolph Weber, 'Factor productivity and growth: a historical interpretation' in Hans P. Binswanger and Vernon W. Ruttan, *Induced Innovation: Technology, Institutions and Development,* The Johns Hopkins University Press, Baltimore, forthcoming.

The challenge for those interested in agricultural development is to help countries escape from the low productivity trap. What direction should they go — toward the American-type group, the European-type group or the Japanese-type group?

To help answer that question, consider an analysis of the development path of some of the countries which have escaped from the low productivity trap. Figure 1 illustrates the historical growth paths for six countries.

Figure 2. International comparison of labour and land productivities, 1970

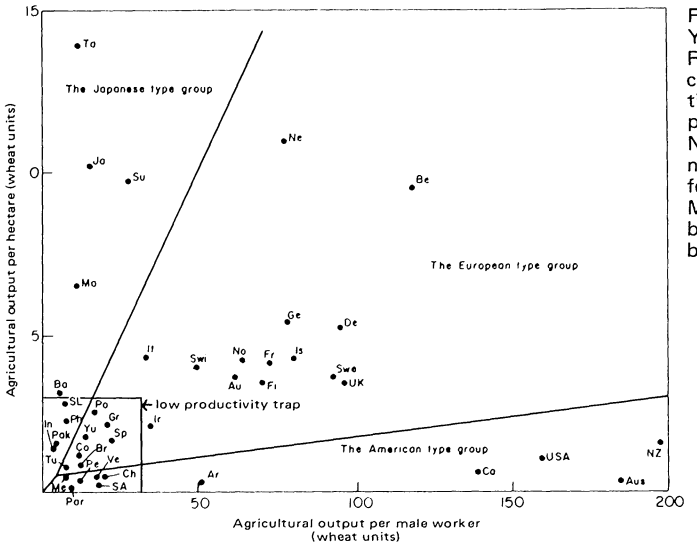

Figure 2 Source: Saburo Yamada and Vernon W. Ruttan, 'International comparisons of productivity in agriculture,' paper presented at The National Bureau of Economic Research Conference on Productivity Measurement, Williamsburg, Virginia, November 13 and 14, 1975.

Argentina	Ar
Australia	Aus
Austria	Au
Bangladesh	Ba
Belgium	Be
Brazil	Br
Canada	Ca
Chile	Ch
Colombia	Co
Denmark	De
Finland	Fi
France	Fr
Germany, Fed.	Ge
Greece	Gr
India	In
Ireland	Ir
Israel	Is
Italy	It
Japan	Ja
Mauritius	Ma
Mexico	Me
Netherlands	Ne
New Zealand	NZ
Norway	NO
Pakistan	Pak
Paraguay	Par
Peru	Pe
Philippines	Ph
Portugal	Po
South Africa	SA
Spain	Sp
Sri Lanka	SL
Surinam	Su
Sweden	Swe
Switzerland	Swi
Taiwan	Ta
Turkey	Tu
United Kingdom	UK
United States of America	USA
Venezuela	Ve
Yugoslavia	Yu

Note that different countries have followed different paths in escaping from the low productivity trap. The United States, for example, with abundant land resources, emphasized increasing land productivity. The European countries followed an intermediate path of increasing both land and labor productivity.

The history of these countries illustrates the importance of developing a research strategy and capacity that can develop substitutes for the resource constraints which limit agricultural production. Researchers concerned with expanding output in a country in the low productivity trap can compare its resource endowments — its land and labor supplies — with those countries outside the trap. If it appears that the American pattern is appropriate, U.S. type of technology seems a good choice. If a country is more like Japan, the Japanese technology may provide answers.

Technology Transfer

A second project, conducted as part of the University of Minnesota project in Tunisia, involved providing information on the problems of the diffusion of new technology and on the distribution of economic returns from new technology. For instance, an effort was made to identify the factors that were necessary to achieve high wheat yields in small nonirrigated wheat farms.

The modern bread wheat varieties were introduced in Tunisia from Mexico in the late 1960's. In Mexico they were developed under irrigated conditions while in Tunisia, they are grown under dryland conditions. The better farmers were achieving yields approximately one third higher than the best local varieties — when grown under comparable conditions.

University of Minnesota team researchers, cooperating with the International Maize and Wheat Research Center and the Tunisian Ministry of Agriculture, showed that the Mexican wheats were far more sensitive to management or control variables than the Tunisian varieties. High yields could be obtained only with good seedbed preparation, appropriate date of planting, the correct seed rate, high levels of phosphate and nitrogen fertilizer, effective weed control, and correct timing of nitrogen application. Many of the farmers with largest acreage had the ability to achieve high yields. Many farmers with smaller acreage lacked both the knowledge and the resources to achieve the high yields. Wheat breeders realized they would have to build some of the characteristics of the older Tunisian varieties into the new varieties if Tunisian wheat yields were to be improved for small acreage farmers, too.

The new bread wheats were introduced to Tunisian farmers in 1969 and new durum wheats in 1971. The new durums, developed primarily from local genetic materials, possessed agronomic and quality characteristics which made them more acceptable to the small acreage farmers. By 1973 percentage of farmers who had adopted new durums was higher than those who had adopted the new bread wheats. More recently, progress has been made in the development of bread wheats with more acceptable quality and agronomic characteristics.

Social Science Research — Now A Priority

Tunisian study results also point out a second set of issues which must receive more careful attention from agricultural economists, rural-social scientists, and planners. Where some progress has been made in developing the new technology needed to expand food production, the use of the new technology is constrained by institutional factors. Extension services capable of providing farm management and marketing information are required. Agricultural policies that encourage the effective use of the new technical opportunities have to be implemented. Group farming activities that make use of modern

equipment may have to be organized.

Traditional land tenure and credit and marketing institutions may need replacement with more modern institutions.

The case for institutional reform had been eloquently expressed by Wolf Ladejinsky, who until his death last year was one of the world's leading scholars and practitioners in the field of agricultural development. He said it was not the fault of the peasant producer or of the new seed-fertilizer technology "that the credit service doesn't serve those for whom it was intended; that the panchayate (village councils) are essentially political rather than developmental bodies; that security of tenure is a luxury of the few; that rental is exorbitant and that land ceilings are not enforced; and that wages are hardly sufficient to keep soul and body together."

This accentuates the need for social scientists capable of contributing to the design of new rural institutions or to improvements in the performance of existing institutions. It has led to a demand for further research on problems related to institutional design and performance especially in agricultural economics, rural sociology, rural administration, agri-business communications, anthropology, and planning. The University of Minnesota is widely recognized as a leader in these areas. It has willingly contributed these same capacities toward supporting policy oriented research and in building institutional capacity to serve agriculture in the developing countries.

The most serious challenge, both to agricultural scientists and social scientists and to the political leadership in the developing countries, is under-use of labor in rural areas. National and agricultural leaders must begin to view the existence of poor or under-used labor resources as an opportunity for development just as they have, in the past, viewed poor or under-used land and water resources in this way. The world can no longer afford to accept the attitude of a well known economist who, when asked about Indonesia's major development problem replied, "Too many peasants." Both technical and institutional innovations must be found to put rural people to work more days per year and at higher daily levels of productivity.

A combination of continued rapid growth in rural labor force, pressing against inadequate rates of growth of productivity, is increasing poverty in rural areas in many developing countries. Many observers anticipated that the disruption in rural social and economic life associated with the introduction of new agricultural technology would lead to revolutionary changes in political and economic institutions in the 1970's. Unless productivity can be raised, population growth moderated, and institutional changes implemented to balance production and participation in the fruits of production, the stress on the fragile political institutions of many developing countries will boil over into demand for radical restructuring of rural society.

UNIVERSITY OF MINNESOTA AGRICULTURAL ECONOMISTS AND THE WORLD SCENE

Malcolm J. Purvis[3]

International Experience of Faculty

Twenty-four current members of the Department of Agricultural and Applied Economics faculty have had professional agricultural overseas experience. Fourteen faculty members have lived abroad 12 months or longer on various international assignments in 13 countries for a total of about 45 years. Although much of this experience was gained before coming to the University of Minnesota, 23 years were since joining the department — over 10 of these from the USAID project the department ran in Tunisia from 1967 to 1976. Two faculty members are currently abroad — one on a year-long sabbatical in Malaysia, and one on a short-term assignment in Bolivia.

Short-term assignments are, of course, far more common. These include attending international professional meetings as invited lecturers, signing on with government agencies, and consulting for private business. In nearly all overseas travel, travel and salary expenses have come from sources external to the University — mainly AID, the World Bank, USDA, U.S. foundations, UN agencies, and recipient countries. (Contracts with other agencies which do involve the University not only cover overseas salary and travel costs but also bring in overhead money to the University for associated costs of the program.)

Twenty-three departmental faculty members have visited 75 different countries during their professional careers (table 2). Four faculty members have worked in over 20

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Table 2. Short-term overseas professional assignments by department faculty, by region

Region	Number of faculty visiting	Number of countries visited[a]	Total number of faculty visits[a]
Africa	16	12	29
Middle East	8	9	14
Latin America and Caribbean	10	13	34
Asia	14	16	50
Australasia	4	2	5
Europe (incl. USSR)	12	23	73
Total	—	75	203

[a]Excludes multiple visits by same faculty member to any one country. Excludes travel to Canada.

countries, and one has worked in 36; Europe and Asia are most frequently visited. Excluding multiple visits by the same individual to any one country, this makes 203 different foreign country professional experiences from the department. The most visited countries are Tunisia (14 faculty) and Italy (10). The headquarters of the UN Food and Agriculture Organization (FAO) is in Rome, which contributes to the large number of visits to Italy. No attempt was made to measure the amount of time spent on each of these visits (nor the number of multiple visits to each country). But, the length of these visits ranged from a few days to six months. So, the international experience of the faculty amounts to the equivalent of over 30 years of professional involvement overseas. This does not include the on campus time spent researching and teaching international topics.

Because of the rather extensive overseas activities, it is not possible to describe all activities in detail. A few examples are given in "Meet the People" on the final page.

Apart from the long-term assignments (mainly as participants in technical assistance projects financed by the U.S. government or by foundations and when faculty have been on leave of absence from the University) short-term assignments have been organized and financed by many different agencies. For example, a faculty member may be asked to participate in a USDA-Foreign Agriculture Service team to study dairy marketing in Europe; as a consultant to USAID on sector planning in Mauritania; as a participant at a professional farm management conference in Great Britain; as a visiting professor in India; or as a World Bank consultant on economic analysis of agricultural investments in Guatemala (all actual cases).

Students and Teaching

This international agriculture interest is reflected in students in the department (table 3). Of about 90 graduate students, almost one third (27 including 3 Canadians) are foreign students coming from 17 different countries. Nearly half of these students are from Asia. Foreign students are usually supported by grants from their home governments or from international agencies; few are studying under financial arrangements similar to U.S. students, i.e., self-financed education or supporting themselves by working as research assistants in the department.

Table 3. Graduate students in department by area of origin

Area	Number of students (1978)	Number of countries represented
Africa	3	3
Middle East	—	—
Latin America and Caribbean	3	2
Asia	12	6
Australasia	2	1
Canada	3	1
Europe	4	4
Total	27	17

Of U.S. graduate students, 15 already have some professional experience overseas, such as in the Peace Corps or in other previous jobs, and a like number have strongly expressed interest in international aspects of agriculture, both for dissertation research and careers. In 1977/78, U.S. graduate students from the department have done research in Malaysia, Tunisia, and Brazil. A review of Ph.D. dissertations completed (1972/73-1976/77) shows that of 40 completed, 22 were on international topics. The department offers five graduate courses and seminars in the international area.

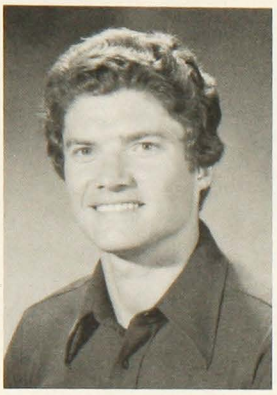
At the undergraduate level, there are few foreign students. Domestic students are interested in international aspects of agriculture and the department serves these interests by offering five undergraduate courses which deal with the economics of world food, agricultural development, and trade. There is first hand teaching knowledge from faculty who have lived there.

Research

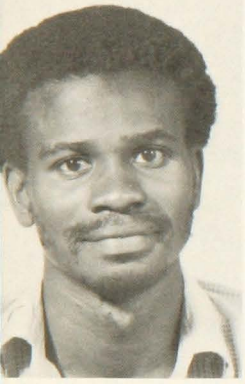
A number of past issues of the Minnesota Agricultural Economist have dealt with questions of foreign trade and demand for Minnesota farm commodities. Reviewing all faculty publications for 5 years (1971/72 to 1976/77) shows that about 25 percent of the department's total publications addressed international issues. To give a flavor of the research and publications of departmental faculty and graduate students, a selection of titles from the most recent follows:
(1976/77) list of publications:

— "Thailand's Maize Export Agreement Policy: An Economic Analysis" (Ph.D. dissertation), C. Konjing.
— "A Study of U.S. Exports of Soybeans and Soybean Meal" (Experiment Station publication), James Houck and Mary Ryan.
— "Hunger Signs in the Developing Countries" (staff paper), John Blackmore.
— "Benefit Cost Analysis of Surfaced Roads in the Eastern Rice Region of India" (journal article), John Spriggs.
— "New Techniques in the Use of Mathematical Programming to Analyze Nonlinear Relationships: A Tunisia Subsector Model" (seminar paper), Terry Roe.
— "French Experience with Group Farming" (book chapter), Philip Raup.

◀Delane Welsch



Robert Deuson ▶



◀Jo-Jo Biaduforson

Philip M. Raup ▶

MEET SOME OF THE PEOPLE

Delane Welsch, professor, worked in Nigeria 1 year as a graduate student and, most recently, in Thailand 9 years as a Rockefeller Foundation visiting professor of agricultural economics. He now carries a major responsibility for farm management research and teaching at Minnesota. "There are more similarities than differences among farmers in the countries I've worked in," says Professor Welsch, "particularly in the values they hold and their attitudes toward their family and toward risk." He finds his overseas experience a valuable asset in helping to understand farm people, including those in Minnesota.

Robert Deuson, student, is a native of Belgium who did his M.S. work at New Mexico before coming to Minnesota to work on his Ph.D. He was born in Zaire, Africa, and has worked there and in Honduras and Mauritania. Planning a career in international agriculture, he says, "Development economists often have to work under difficult conditions and need an even more rigorous training than those who are going to work in the U.S. with all the resources one can draw on here. The U of M seems to be one of the very best places to get such a training."

Jo-Jo Biaduforson, student, is from Nsawan, Ghana working on an M.S. degree. Jo-Jo is studying to become a teacher and researcher at the University of Ghana, Accra. Jo-Jo said he hadn't realized how cold Minnesota winters are, but "I really like the University and have found my fellow students and the professors very friendly. Apart from studies, I'm learning a lot about teaching which will be useful when I go home."

Philip M. Raup, professor, aside from teaching in the area of world agriculture, has an international reputation in land economics and in agriculture of Europe and other regions of the world. He has worked for FAO and in many countries abroad but is well known in Minnesota for his studies of land values and farm issues. "You're not worth much as an 'expert' overseas unless you have a professional base at home," says Professor Raup, "but it is also true that you're much more useful here at home if you have an international interest. Look at what's happened to farm product and land prices in the U.S. since 1972. Knowing something about agriculture overseas is essential to an understanding of what's been happening to Minnesota land values and farm incomes."

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