A CASE FOR GLOBALIZING U.S. COLLEGES OF AGRICULTURE

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Abstract

This is a commentary on the rationale for globalizing programs in U.S. colleges of agriculture. Arguments for globalizing undergraduate education, graduate education, faculty experience, research collaboration, and outreach are presented. The principle of integration of a global perspective into all aspects of higher education, research, and outreach in agriculture is described and supported with examples. The authors argue that the globalization of agriculture programs will be a key pathway to continuous improvement of quality at U.S. land-grant institutions in the 21st century.

What is the purpose of international programs in U.S. colleges of agriculture? This is a frequently asked question in the post cold war era because resources for traditional agricultural development activities which were common during the period 1950-1990 are now much scarcer. It may be argued that in these days of shrinking budgets and increased public accountability, all programs, including international programs, need to be evaluated for effectiveness, relevance, and impact. The core thesis advanced in this commentary is that international components are essential, integral, and central to the education, research, and outreach missions of a college of agriculture. The quality of all programs -- education of undergraduates, development of the next generation of scientists as graduate students and post-doctoral fellows, research projects, extension programs, economic development of the state or region, and support of the strategic goals of the agribusiness sector -- is enhanced when they are pervaded by multiple international dimensions. However, the rationale for globalizing each may vary.

Globalizing Undergraduate Education

Why is there a need for globalizing the education of undergraduates in agriculture? The primary reason for existence of a college of agriculture is to provide a quality education as a foundation for lifelong learning. In 1995-96, U.S. colleges of agriculture, forestry, and natural resources awarded 24,246 undergraduate degrees (FAEIS, 1998). The importance of providing a global perspective to such a large number of students and their faculty instructors...
cannot be overemphasized. This applies whether students ultimately opt for a career overseas or in the U.S. in production agriculture, agribusiness, education, or professions such as law and veterinary medicine in which they will experience constant interaction with the world’s marketplace. Multinational companies seek employees with cross-cultural and language skills. The ability to speak the other language is an important entree into another culture, and the building of personal bridges and friendships. It is important for students to have an appreciation for the diversity of cultures, history, and customs and learn the agricultural and economic systems of other countries.

Part of a quality education is the introduction of students to an international experience. Currently, U.S. colleges of agriculture need to dramatically expand such offerings to infuse a global perspective into the undergraduate learning experience (Dale, 1997). However, this need is not new. From a near-term historical perspective a major movement toward internationalization of curricula was launched in 1989-90 with the North Central Region Curriculum Committee Project (1989) and the Washington State University Conference on Internationalizing U.S. Universities (1990). A specific example of programs already instituted is Iowa State University, where students have participated in short courses or semester-long experiences in sites as diverse as Costa Rica, Mexico, People’s Republic of China, Slovakia, Ukraine, and Uzbekistan.

The relevance of a global perspective is equally important for faculty. The inclusion and teaching of international perspectives in courses are enhanced when professors have first-hand experiences of what they are talking about. Investments in faculty development are more critical and difficult to access today than a decade ago when such experiences were easier to fund through projects supported by the U.S. Agency for International Development and the U.S. Information Agency.

**Research and Science**

Why is globalization valuable to research and to training the next generation of scientists? It is increasingly evident that quality science is occurring throughout the world. Governments recognize the link between research and both sustainable economic development and the quality of life of people. Scientific advances can be attained much more rapidly with scientist-to-scientist collaboration irrespective of whether they are in the same building, institution, state, or country. Concurrently, training of future scientists is both quantitatively and qualitatively enhanced. An example might be a U.S. agricultural scientist working closely with a colleague in the European Community, Mexico, Australia, or Japan, following reciprocal exchange visits to each other’s laboratories and classrooms. Alternatively, a graduate student or visiting scientist from another country may spend time in an American college of agriculture. This will not only add to the magnitude and quality of a research effort in the American college of agriculture but, in the case of developing countries, act as a “seed” for the development of strong science and foster a long-term institutional relationship when the individual returns to the home country.

International scientific collaboration can also benefit researchers at U.S. colleges of agriculture when the partner institution has unique techniques, facilities, equipment, or germ plasm. For instance, use of winter nursery research facilities in Mexico and Puerto Rico enabled Iowa State University researchers to expedite progress in corn and soybean breeding. Unique germ plasm exists in every country and serves as a valuable foundation for scientific cooperation. In addition, international collaborative research of animal or plant populations can identify the genetic basis of key production-related traits. For instance, research using Chinese pigs enabled Iowa State University researchers to identify a gene that increases the number of piglets per litter.

Partnerships between institutions can be fostered by making available unique
capabilities, facilities, or germ plasm sources. A publication, "Engaged Globally," (NASULGC, 1993) presents nearly 30 examples of such linkages. More importantly, a college should encourage its scientists to link up internationally in various synergistic manners. This encouragement can take the form of sabbaticals or faculty improvement leaves, short sojourns in other laboratories, hosting of international visiting scientists, and the removal of disincentives that hamper faculty creativity and entrepreneurism as they relate to the international dimensions of their programs.

**Globalizing Agriculture Outreach**

Why is globalization pivotal to college of agriculture outreach programs? The ultimate goal for the outreach program of a college of agriculture is the economic well-being and quality of life of the citizens of the state, region, nation, and world. International trade is increasingly becoming the economic engine responsible for improving standards of living at home and overseas. Exports can provide a rationale for extension services to take a significant international role. In 1996, U.S. agricultural exports reached almost $60 billion; this does not include agricultural chemicals, pharmaceuticals for livestock, biologics, seeds, machinery, or consulting. A strong case can be made that technology and knowledge transfer to the Pacific Rim region offers a tremendous growth opportunity for commodity grains (wheat, corn, soybeans) and value-added meat. Not only is the United States ideally placed geographically and highly competitive agriculturally, but the countries of the Pacific Rim region, with their growing economies, have the ability to pay for U.S. produced food and animal feed. A second opportunity is the sale of U.S. technology (machinery to germ plasm to "know-how") worldwide, particularly in the countries of eastern Europe and the former Soviet Union, which have similarities to the United States in climate (and hence crops) but whose technological/economic systems require rejuvenation. Outreach efforts include working directly to aid economic/technological development in other countries and, on return to the United States, provision of knowledge in home communities of opportunities and constraints for exports. Another aspect of the outreach effort is attracting foreign companies, particularly the research and development arm, to agricultural research hubs frequently associated with U.S. land grant colleges of agriculture.

**Globalization: Paradigm of the Future**

Are there caveats to globalizing U.S. colleges of agriculture? Until the early 1990s many U.S. colleges of agriculture relied heavily on federal sources to fund their active engagement in international programs. We think the paradigm for the 21st century will be that international programs will be funded from multiple sources including international, federal, and state government, and the private sector in recognition of the direct benefits of these programs to multiple stakeholders. Relationships between institutions must be based on long-term commitments. When funding is scarce, institutions may use reciprocity or "barter" to build or maintain programs. It should be stressed that much closer and stronger linkages between the international agricultural research centers and colleges of agriculture should be developed and fostered to the mutual advantage of both. Indeed, it may be argued that the ability to feed the expanding human population will only be met through a partnership between U.S. colleges of agriculture and the global agricultural research and outreach system, including the international centers.

Particularly noteworthy in elaborating this new paradigm is the recent work of a national task force on Globalizing Agricultural Science and Education Programs for America. The report of the task force was recently endorsed and adopted by the Board on Agriculture of the National Association of State Universities and Land Grant Colleges as a national road map for globalizing U.S. college of agriculture programs for the next century (NASULGC, 1997). Also, the strategic plan prepared by the International Committee on Organization and Policy (NASULGC, 1997) elaborates on the directions
needed to advance action under this global paradigm.

In summary, we consider that U.S. colleges of agriculture are in a global environment and subject to global competition. To prosper, achieve their mission, and serve their stakeholders, U.S. colleges of agriculture must globalize their programs. In the 21st century globalization will be a key pathway to continuous improvement of quality in college of agriculture programs.

References


