AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Agricultural
Economic
Aspects

OBJECTIVES OF INTERNATIONAL TRAINING IN
AGRICULTURAL ECONOMICS

D. Gale Johnson
The University of Chicago

While perhaps not intended to apply to American training in agricultural economics for foreign nationals, the following exchange brings out points that perhaps have troubled each of us:

Q. "You have been sarcastic about what you call technocratic optimism. Does this mean that you don't put much store in the use of modern technology in the underdeveloped countries? Particularly, do you think the so-called green revolution cannot have a significant effect?"

A. "I can tell you a story. I once visited a great university here with a glorious agricultural school located in one of the most glorious agricultural districts of America. There were a hundred Pakistani and Indian students present and they wanted to see me. When we met, I said: 'What are you doing here? There is nothing you can learn here that you can possibly apply back home among your mud houses in the villages.' And they appeared to agree with me. Conditions in the poor countries are vastly different from those here. Climate. Factor proportions. Social Relations. The technology they need is different from ours. Of course it should be modern, built on the latest scientific discoveries, but it has to fit their conditions."

The responder was Gunnar Myrdal (3, p. 31). What answer can we give to the question: What can young men and women from developing countries learn through the study of agricultural economics in American universities that will help them when they return home? Is the answer, as given by Myrdal for a group of students studying some unspecified aspects of agriculture, nothing? Very little? Or a great deal?

Paper to be delivered at annual meeting of the American Agricultural Economics Association, College Station, Texas, August 19-21, 1974.

As one who believes that science is universal--that the power to understand the mysteries of life may come from any place and any time and can have applicability to other places and times--I was amazed and shocked by Myrdal's advice to the students from Pakistan and India. Either Myrdal was being sarcastic when he described the institution that he visited as "a great university . . . with a glorious agricultural school . . ." or he has little understanding of the relationship between research and technology. His response seemed to imply that all that was being learned from the American agricultural institution was technology and the technology being studied was appropriate only to the factor supplies of the United States or perhaps only of the agricultural region where the students were studying. The sciences of genetics, nutrition, pathology, physiology, chemistry and hydrology have nothing to do with factor proportions or climate or social relations. Perhaps the students were studying only technology, but I doubt this very much. And it is clear that there is a great deal of American or European agricultural technology, with some modifications, that can be applied profitably in the developing countries. Some examples might be sprinkler irrigation, the control of the cotton boll weevil or the corn borer, the control of many animal diseases, or construction of irrigation dams.

But to speak critically of the position taken by Myrdal does not take us very far in understanding what American training in agricultural economics can contribute to the improvement of agriculture and welfare in the developing countries. It is my responsibility to discuss the objectives of international training in agricultural economics.

It is my view that the appropriate objectives of graduate education

in agricultural economics for students who are nationals of the developing countries are the same as the objectives for high quality programs for Americans. We owe foreign nationals who are our students no less than we owe students from our own country. My colleagues on this program will undoubtedly suggest how we can improve the means by which we approach our ends or objectives.

The objectives of graduate education in agricultural economics are the development of:

1. A firm understanding of the major principles and theories of economics;
2. A grasp of the fundamentals of empirical analysis adequate to permit undertaking research on important economic problems involving the application of economic analysis;
3. An understanding of essentials of the analysis of public policies, including an appreciation of the strengths and limitations of economic analysis in such evaluations; and
4. The capacity to grow and develop one's capacity as a scholar, researcher, administrator and policy analyst.

Our objectives are not those of providing our graduates with answers to a series of specific questions but rather to provide them with the principles and tools that will permit them to answer the important questions that will arise in the years ahead. As our own experience indicates the most pressing questions of today are likely to be replaced by a rather different set of questions tomorrow. If the function of our education was to provide answers to questions, rather than providing the capacity for answering questions, we would almost certainly be answering yesterday's questions and not even those of today let alone tomorrow's.

These objectives, it will be said, are quite traditional or conservative and do not call for an extension or broadening of what most of us in the universities think we are now doing. This is a correct interpretation. I believe that the heritage of economic analysis and theory is a powerful and valuable heritage capable of growth and development in the future as in the past. I do not think that I am being parochial when I say that no other social science has the riches of theory, analysis and approach to the understanding of human behavior that exists in the corpus of economics. This is said not to denigrate the other social sciences, but to indicate that we should be proud of what we have to offer.

It is true that economic analysis encompasses only a part of human behavior, though recent applications of economic analysis to a wider range of problems--marriage, crime, fertility, suicide--indicates that we have perhaps underestimated the generality of economic theory and the extent to which costs and benefits affect human behavior. But even as the more imaginative among us extend the range of behavior that economic analysis may illuminate to some degree, we should emphasize to our students that not all important decisions, whether of the farm, the family, the state or the nation, rest solely or primarily upon the considerations that we are most capable of explicating. This is necessary for at least two reasons--it is true and it is perhaps of help in preventing undue or unnecessary frustration and despair when what is clearly good research or good advice is ignored, as it will be.

I said earlier that I felt that the objectives of graduate education in agricultural economics for foreign nationals should be the same as the objectives of high quality programs for Americans. There are, perhaps, two

differences of some significance that we should recognize.

First, in the United States, Canada and other industrial countries the agricultural economist has a reasonably accurate perception of the various roles that he can perform in the various institutions of his economy. And these institutions have more or less accurate expectations of what it means to employ the services of agricultural economists. But the agricultural economists in most developing countries do not go home to equally well defined situations. Some may well be the first agricultural economist with a Ph.D. degree to hold a position in a particular institutional setting in their country and perhaps the first agricultural economist with an M.A. or a Ph.D. We can, if asked, give our American or Canadian graduates a reasonably clear description of the expectations and opportunities surrounding positions in a large number of institutions, whether they be government bureaus, private firms, or universities. But I suspect that we often fail to realize how great the difference may be between the roles for which we educate our students and the actual roles envisaged by the various institutions that employ agricultural economists in many developing countries. As a directly related point, we need to recognize that in most developing countries an agricultural economist has far less support in terms of colleagues, libraries, equipment and competent research personnel than we have. I am not sure that we can do much to prepare our graduate students for their far more difficult circumstances, except to recognize these conditions and to let our students know that such difficulties will confront them.

Second, a further difference is in the desirable breadth of the educational programs provided to Americans and foreign nationals. For students

from our own country (and other industrial countries) we properly can emphasize a considerable degree of specialization. But because of the different circumstances facing the agricultural economist in the developing countries, some of which I have just enumerated, there is more need for general economic training or for more breadth in the education than we often provide for our own nationals. The agricultural economist in developing countries is more likely to be faced with problems of monetary and fiscal policy, international trade, import substitution, and exchange rates than is an American national employed in either a university or a governmental agency. Fortunately or not, the American agricultural economist can find acceptance of his role as a marketing specialist, a farm management specialist or what have you and largely ignore matters lying outside a particular field. But in the developing countries agricultural economists are often, if not generally, expected to have the competence to deal with a wide range of economic issues. Obviously, if the length of the graduate program is to be approximately the same for both groups, some sacrifices must be made to achieve greater breadth for the foreign nationals. In the abstract it is not possible to say what should be given up in order to provide a broader understanding of economic phenomena, but I believe that those of us who are involved in educational programs for agricultural economists for the developing countries should consider what parts of our traditional requirements should be modified in order to broaden their backgrounds in economics.

I have so far emphasized the teaching of principles, theory and tools as the major objectives of our training for students from developing countries. Whether or not properly classified as objectives, I would like to emphasize two additional ways in which we may be able to provide support

and assistance for such students.

The first is a matter of historical perspective or perhaps, a comparative approach in which the comparisons occur through both time and space. The contrasts between the current productivity and income of the industrial and developing countries are obviously evident to any of our students who come to us from the developing countries. On the whole, Americans are oriented to the present and the future. It is quite possible by our emphasis upon current developments--the new and the emerging--that we give the impression, undoubtedly unintentionally, that our agriculture was always pretty much the same as it is today.

While there are major differences in any productivity measure that you choose for the developing and industrial countries as of today, one does not need to go back into history very far to discover that yields per hectare of cropped land or output per farm worker in the industrial countries were similar to the current measures in the developing countries. While the yield of all grains per hectare in the United States is now three times the yield in India, the U.S. grain yield in the 1920s was only 20 percent above the average for India in 1969-71. In fact, if the world is divided into two parts--industrial and developing--the average grain yields were the same during 1935-39 while there is now a difference of 50 percent.

As we all know Japan has emerged as one of the major industrial countries of the world and has now reached the European level of per capita GNP. Yet, according to the calculations made by Hayami and Ruttan, the agricultural output per male worker in Japan as of 1910 was approximately double the figure for India in 1965 and below that of Mexico, Columbia, Peru, and Brazil as of 1965 and approximately the same as in Ceylon, the

Philippines, and the United Arab Republic (2, p. 73, App. B).

The output per male worker in France as of 1880 was below the 1965 estimate for Brazil, Colombia, Taiwan and Venezuela and the same as for Turkey. The French did not reach the 1880 U.S. level of output per male worker until the 1930s (2, p. 73, App. B).

There are other aspects of the historical perspective that it would be well to recognize, such as life expectancy. At what date was life expectancy in the United States and Western Europe the same as now prevails in India and developing countries generally, except in Africa? I will leave it to you to find out.

There are a number of opportunities for including information relevant to time and place comparisons. Speaking personally, I have done so in a course on agriculture and economic growth as a part of the discussion of the contributions that agriculture can and has made to economic growth and of consequences of economic growth to agricultural employment, share of national income and the growth of yields (man and land) on farms. I would think that similar material could be included in a course in agricultural policy that had something of a comparative approach or emphasized historical developments of agriculture. It could be included in the somewhat rare course in agricultural history, again if such a course involved a comparative approach or covered more than the United States. Since I believe that time and place comparisons also add to the perspectives of American students, I think an effort to provide such comparisons would be of value to all the students involved.

The second way in which we can provide support and assistance to our students from the developing countries is to try to understand and to have them, in turn, understand why there are such large differences in productivity

and income between the developing and industrial countries at the present time. If Hayami and Ruttan are anywhere near the mark in their Agricultural Development, An International Perspective, differences in natural resource endowments relative to the number of workers do not explain most of the wide disparities in output per worker. Output--and income--differences are due much more to differences in modern inputs, the amount of research or highly trained manpower, and in human capital per worker. While no road to development is an easy road to travel, the roads that depend on resources that can be augmented are almost certainly easier ones than if there were a limiting resource that could not be augmented at all or by relatively little.

The results by Hayami and Ruttan are clearly consistent with T. W. Schultz's analysis of the declining relative importance of land rent (4, p. 47). Their results are also strongly fortified by the important studies by Evenson and Kislev contained in Agricultural Research and Productivity. This work, which hopefully will be published in full this year, investigates the productivity of research in the developing countries. Among their most striking results is that the internal rate of return on investment in agricultural research is greater in the developing countries than in the developed. In part, this result is due to the functional form of the equation and the lower levels of investment in research in the developing countries. As estimated by Evenson and Kislev, only 11 percent of the world's publicly supported agricultural research was undertaken in the developing countries in 1965 (1, Ch. 2).¹ A further major finding was that a developing country can effectively borrow from

¹Agricultural economics research is one component of agricultural research. Separate data by fields was not given.

other countries only as it has a significant indigenous research effort.

We should not, of course, create an unrealizable degree of optimism about the rate at which the developing countries might approach the current or recent levels of income and productivity of the industrial countries. I must admit to the nagging feeling that there is very little prospect of countries with very large populations, such as India or China, can achieve income growth rates equal to those of Western Europe or North America in the late 19th century or the early 20th century. Yet is large population a relevant variable? Or is it population density? Or does even population density make any difference? Japan and Taiwan have population densities of the same general order as India, not to mention the Netherlands. These few musings indicate, I fear, that we do not have an adequate theory of economic development.

An important goal that we should have is to eliminate the need for substantial numbers of students to leave their home countries or regions and come to the United States or other industrial countries for advanced education. How fully we meet this objective will be an indication of how well we meet our other objectives.

While we can have little control over whether the developing countries will create sufficient numbers of high quality educational institutions that can provide the desired graduate education opportunities, we can contribute to that objective by providing those who now come to us for graduate education with both the skills and the motivation to develop high quality programs within their own institutions.

I do not believe that it is utopian to predict that most of the larger developing countries can have, within two decades, university-level educational and research programs in agricultural economics of high quality

and with the capacity to provide most of the required higher education. By larger developing countries I mean those with populations of 10 million or more. Most of those smaller than this will either have to forego such development or cooperate with other developing countries. Obviously it would be possible for the very small countries to develop good programs in agricultural economics if they neglected other areas of the agricultural sciences or the sciences generally. It is not at all obvious that such would be to their advantage. In effect, I believe that what is required is the achievement of a substantial level of activity of high quality in several disciplines.

One factor that may inhibit the development of high quality graduate education programs in the developing countries are two aspects of the employment of agricultural economists. In the United States we had almost a quarter of a century--say from 1910 to 1933--to develop departments of agricultural economics before government became a major competitor for the services of agricultural economics. And most of the agricultural economists who did go into governmental employment during that period were engaged in research. The rather sharp change in the role of government in agricultural affairs after 1933 which provided employment for a substantial number of agricultural economists in policy and administrative roles came at a time when there was a substantial pool on which to draw. In fact, I suppose that we have to say that under the employment conditions prevailing in the thirties that if the government had not provided employment for a considerable number of agricultural economists many completing their education at that time would not have had careers in agricultural economics.

In the developing countries today it is not at all certain that a

highly qualified agricultural economist will be a university faculty member. Government employment, which as yet in most developing countries provides little research opportunity, may be much more attractive than a university position. In addition, employment by private firms or the socialized production sector is almost certainly relatively more important for agricultural economists in the developing countries today than it was in the United States in 1930.

While I have not undertaken any surveys, it is my impression that a significant fraction of the ablest of the agricultural economists do not seek employment as agricultural economists but seek positions as general economists or in some specialty other than agricultural economics. In most of the developing countries the agricultural colleges and universities are not the prestige academic institutions. The development of our land grant universities, several of which have emerged as among the great universities of the nation and the world, has given a rather higher prestige rating to agricultural economics in the United States than has perhaps prevailed anywhere else in the world and certainly much higher than in the developing countries. And even in the United States it can hardly be said that the prestige rating of agricultural economists is at or near the top for economists generally. But if occupational prestige is an important aspect in the choice of the type of an economist one is going to be, agricultural economics in the developing countries lose some of the ablest who would be qualified as agricultural economists.

If you have stayed with me this far, you may well ask why I have been talking about the objectives for the education for agricultural economists rather than for economists. Much of what I have said is equally

relevant for economists generally, but not quite all. To a degree, and I mean this in the best sense of the word, agricultural economists are advocates. Our uniqueness depends upon our special knowledge of farming and farm people and our concern for their welfare. This is not to say that we have or should work for special privileges and benefits for farm people, but I feel that agricultural economists can quite properly emphasize the need for a relatively even handed treatment of farm people relative to urban people. In all of the industrial countries that I know anything about, there has been a systematic neglect in the provision of social and cultural services available in rural areas and a significant discrimination against farm people in the investment in human capital through formal education. Many of the urban and rural differences in the industrial countries have by now been substantially eliminated or greatly reduced, but only after the farm population is no longer a significant share of the total population. But I see no evidence that the policies of the developing countries are in any way less neglectful of farm people than were the policies of the industrial countries in past decades. Thus I believe that we can be quite proud if we attract to our universities young men and women who are interested in and concerned about the welfare of farm people and if we are successful in providing them with the knowledge and insights that may help them to prevent the developing countries from making the same mistakes the industrial countries have made.

BIBLIOGRAPHY

1. Evenson, Robert, and Kislev, Yoav. Agricultural Research and Productivity. New Haven: Yale University Press, forthcoming.
2. Hayami, Yujiro, and Ruttan, Vernon W. Agricultural Development: An International Perspective. Baltimore: The Johns Hopkins Press, 1971.
3. Myrdal, Gunnar. "Standstill in South Asia," an interview, Challenge, Vol. 16, No. 6 (January/February, 1974).
4. Schultz, T. W. Economic Growth and Agriculture. New York: McGraw-Hill Book Company, 1968.