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# The Role of Agricultural Economists: The Next 100 Years or Less

Roland R. Renne

The topic assigned me gives me considerable lee-way in discussing the role of agricultural economists in the years ahead—that is, “one hundred years or less,” unless the emphasis is primarily on the “or less.” Of course, the title is appropriate in our bicentennial year when we are prone to review events of the past two centuries. However, the changes in the last 100 years were certainly not foreseeable even by the most visionary futurist. I am sure any predictions I might make today of the role of agricultural economists a century from now will not and should not be taken too seriously.

## Agricultural Trends

The changes in U.S. agriculture just in the last half century (1925-1975), I am sure, were far beyond the thoughts and contemplations of agricultural economists in the twenties. As a graduate student in that decade, I detected no long-time appraisal or predictions by our agricultural economics leaders that would have included the major issues, changes, problems, and programs in agricultural policy that developed and are now major areas or fields of interest of agricultural economists. And, the rapidity and scope of these factors indicate that we can expect many more changes in the years ahead.

One of the most important developments of our last half century is the broadening of the scope of agricultural matters in which agricultural economists have become involved. Agricultural economics becomes more like economics in the sense that interest will be more along the lines of applied economics because of the increasing

interaction of agriculture with other enterprises. In other words, more aspects or branches of economics become involved.

Under these circumstances we cannot expect agriculture to be a field for immense growth in agricultural economics because the agricultural phases become less significant than the economic aspects. For example, the number of farms in the U.S. has shrunk from more than six million (6,350,000) in 1940 to less than three million (2,818,000) in 1975. At the same time, the average farm size increased from 167 acres to over 385 acres. During the same period the number in Montana shrunk from 44,500 to less than 25,000 farms, and the average size increased from 1,111 acres to over 2510 acres (or more than doubled).

Another example is the marked decrease of manpower in agriculture and a tremendous increase in machinery on U.S. farms. In Montana a new tractor is now made at Havre, in the northern part of the state, called “Big Bud.” Some of the parts are manufactured in Montana and the tractors are assembled and distributed at Havre. In preparation of the soil for seeding it makes a swath of fifty-four feet and sells for \$93,000. This multiplies the acreage one farmer can operate by several fold compared with earlier tractors, and many times more than the farmer could manage with horses as his main draft power. Of course, the labor employed by the farmer is correspondingly reduced.

Thus, engineering and manufacturing technology become very significant and important factors in the farmers' operations. The economics involved are more similar to economics involved in factories and industries than to the individual farm family working on the farm along with hired workers. The human factor has been greatly reduced and the intensity of interaction between agriculture and other non-agricultural enterprises greatly increased.

Roland R. Renne is President Emeritus and an adjunct professor, Department of Agricultural Economics and Economics, Montana State University, Bozeman.

## Changes in Agriculture

Evidence of these changes includes markedly increased personal income of farmers compared with non-farmers and increased proprietor's equity per farm. In 1940, per capita personal income of farmers was 37 per cent of per capita non-farmers personal income. Today it is around 92 per cent. Proprietor's equity in 1940 was \$6,900 per farm compared with over \$151,000 per farm today. However, agricultural income as a percentage of total national income has declined from 13.5 per cent in 1940 to approximately 9 per cent today. It is interesting to note that in 1925 agricultural income was 18 per cent of national income. The overall relative importance of agriculture in the U.S. economy today is thus markedly less, based on these statistics, than in earlier years.

These facts point up the changing aspects of the agricultural economics profession and the need for thorough preparation in general and applied economics as well as the technical aspects of agriculture. The role of the agricultural economist is the application of economic principles to the solution of problems involving the management of producing and marketing the products of the agricultural enterprise.

## Economic Growth

There are many problems today that provide important opportunities for agricultural economists to play effective roles in their solution. One is the rate of U.S. economic growth. There are many people who believe our rate of economic growth needs to be slowed. Growth lies in applying new knowledge effectively and in a larger flow of inputs. Innovations in products, processes, and institutional arrangements have advanced rapidly to rates as high as any in the last two years. The result is more output, or more voluntary leisure, or more unemployment.

Output growth has been encouraged because its full costs have not been realized or they have been ignored. By leaving out costs of the damages to our environment producers have been able to offer goods and services at understated prices. Thus, the public is not aware of their full costs. Land and water resource developments such as

dams for irrigation, power, flood control, and recreation use, and drainage operations to improve land productivity often ultimately cost much more than originally estimated and financed. This is an area in which agricultural economists, especially in the western states, should be interested and effective. It is becoming more and more obvious with the rapidly rising world population—now over four billion—that economic growth from now on will have to be more prudent than ever before if mankind is to have a reasonably satisfactory living situation, or possibly to survive.

Recently (June 28, 1976), the leaders of the world's seven top non-communist industrial powers, in a conference at San Juan, Puerto Rico, pledged to follow a go-slow approach in their economic policies and study plans to help one another in times of financial difficulties. After a two-day economic summit conference, the seven leaders representing Britain, France, West Germany, Japan, Italy, Canada, and the United States said "restoration of balanced growth is within our grasp. We do not intend to lose this opportunity." They believe this policy will benefit not only their peoples but the international economy as a whole. This joint statement gave the U.S. what it most wanted—a pledge to pursue orderly economic growth with policies that do not threaten a renewed bout of serious inflation.

The U.S. has experienced great material prosperity over the years of its existence, but this has not brought social contentment. Was the growth too rapid? Or, was the primary emphasis wrong? I remember writing an article for the *New Republic* in the early thirties entitled "The Badness of Bigness." Recently the book "Small is Beautiful" has had a wide reading. Economist Robert Heilbroner recently said, "Growth can't go on forever. Within a hundred years from now we will have to bring growth under very stringent control—perhaps down to zero and much sooner we will have to monitor and put a brake on our growth."<sup>1</sup>

## The Future

Will the trends in farm personal income, farm size, proprietor equity, and agricultural income,

<sup>1</sup>Robert Heilbroner, in *U.S. News and World Report*, March 8, 1976, p. 56.

as a percentage of national income, discussed earlier in this paper, continue in the future? Of course, we cannot say, but there are certain absolute limits that would make the continuance of some of the present trends impossible. For example, in the case of agricultural income as a percentage of national income, if the present trend were to continue, agricultural income as a percentage of national income would be zero by middle of the year 2007. This of course, makes no sense at all. I am sure all of us here, while we might agree certain changes might be made, would not want to eliminate agricultural income completely.

Consequently, we must conclude that while there may be significant changes in agricultural income in the years ahead, agricultural income will not reach zero, or if it did, our whole economy would be completely changed. As agricultural economists, such a stupendous change would certainly affect our profession adversely, to put it mildly. Nevertheless, the exaggerated possibilities should lead us to appraise probable trends carefully for the next 25 to 50 years.

In the case of disposable personal income per capita of farmers compared with disposable personal income per capita of non-farmers, the percentage increased from 37 per cent in 1940 to 92 per cent in 1975. In 1973 it was 106.8 per cent of non-farm income. With the significant advances that have been made and are in progress, and the increasing world population, U.S. disposable personal farm income per capita could soon exceed the 100 per cent mark. Some writers recently have contended that the trend will continue, the poor will be squeezed, the rich will be subsidized, and in the end only the biggest and best integrated operations will survive.<sup>2</sup> Farmers and ranchers can no longer be automatically included among the poor in our nation.

Agricultural economists, particularly those in the principally agricultural states, should consider the side effects of these possible developments along with the strictly economic aspects. This is a logical part of the role of agricultural economists as social scientists. This brings us to the second of four major trends, namely farm size.

If the trend in farm size continues, the average size of all farms in the U.S. will be 657 acres in the

<sup>2</sup>Peter Barnes, "The Sharing of Land and Resources in America," A New Republic Pamphlet, Harrison-Blaine of New Jersey, Inc., 1973, p. 22.

year 2025, compared with the present 385 acres, or an increase in average size of approximately 100 per cent, double the present size. The February, 1970 issue of *National Geographic* contains stunning photographs of an egg factory near Los Angeles where two million caged leghorns eat 250 tons of feed and lay one million eggs each day; a cattle metropolis in Colorado where 100,000 steers are fattened on formulas prescribed by a computer; a \$23,000 tomato harvesting machine, developed by the University of California that picks off specially bred tomatoes for farmworkers to sort while taped music purrs in the background.<sup>3</sup>

Many tremble at these mammoth farm enterprises and prospects of many more to come. One alternative is the establishment and operation of farm cooperatives. In this case, the individual farms are relatively small and can be operated without the necessity of hiring much labor, if any. The farmers are members and owners of the cooperative and if adequate operating capital is secured, especially for the first three to five years, and good management is employed, the farmers who have about average-sized operating units can operate efficiently and profitably. Agricultural economists can play a very important role in advising and appraising the cooperative's performance and in making recommendations that will assist in assuring successful operations.

The third trend—proprietor's equity per farm—if current trends continue, will increase from the present \$151,000 per farm to \$282,500 per farm by the year 2025. This approximate prospective doubling reflects the increased mechanization, increased size of farms, and relatively profitable farm product prices of the past several years. This increase is due to a large extent to the decreasing number of farms resulting in much larger acreages which contributes significantly to the ten-fold increase in the proprietor's total equity in the U.S. from \$43.8 billion in 1940 to \$426.6 billion in 1975.

Land reform has been suggested from time to time, as a means of stopping the exodus from the country to the cities. Frederick Jackson Turner, 70 years ago, talked of the frontier as a "safety valve" for urban discontent. Some contend urban problems are virtually insoluble and that city

<sup>3</sup>Ibid.

residents seem on the verge of a mass psychic breakdown.

In recent years, and for years to come, agricultural economists are going to be concerned, and many involved, in land reform programs. They should play an important role in resource protection as well as in resource development. Again, the problem is much greater in urban than in rural areas. The shrinkage in number of farms in the U.S. from some 6.3 million in 1940 to 2.8 million in 1975 indicates that there has not been a great exodus from the city to the countryside. And, unless economic opportunities, as well as scenic and soothing qualities of the countryside are available, there will not be an exodus from the cities. Actually, the trend has been from countryside to urban areas because of more employment and related economic opportunities in the urban areas. Despite the recent occurrence of reverse migration, our farm population is still decreasing not expanding.

The fourth and last trend, agricultural income as a percentage of national income, will probably continue to decline, but the decline is likely to be smaller in the next 25 to 50 years. In view of the fact that there has been a large decline in the number of farms, but a large increase in the individual farm proprietor's equity, American agriculture currently is in a rather healthy state economically.

## Conclusion

The rapidly increasing world population reached four billion on March 31 of this year. There are no signs of a major decrease in birth rates or in longevity. Under these circumstances the abilities of American agriculture, and those of Canada, to produce more food, especially food grains, than are needed at home, constitute an important factor in the present and future economic health of our agricultural sector. In return, we can secure products through importing what we need, which helps to bolster the economies of nations exporting products to us.

Overall, American agriculture appears to be in a relatively good state of health. Agricultural economists can and will play an important role in maintaining a healthy American agriculture and a strong nation. But, the economic and social environment of both domestic American agriculture and world-wide agriculture in the next 25 to 50, (or 100 years) will be different from the past. As social scientists, agricultural economists must understand the current environment, predict the future environments, and then put forward solutions that will enhance the well-being of all members of the community we refer to as the Planet Earth.