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# ECONOMIC RESEARCH AND EDUCATION FOR COMMERCIAL AGRICULTURE

R. L. Kohls, Purdue University

First, I want to lay before you the limitations of my competence. For almost twenty years I labored and I am biased enough to believe, productively, in the vineyard of teaching and research in Agricultural Marketing. However, for almost ten years now I have been in academic administration -- six of which have been as Dean of Agriculture at Purdue.

Contrary to some faculty opinion I have found the job of being Dean to be one which requires my full energies. Therefore, I admit freely to being only observationally acquainted with much of the research and extension developments in Agricultural Economics in recent years. Rather than go through a superficial literature research effort to look highly informed, I will present my opinions and observations as they are. You will have to assess their value and validity. I would mention, however, that my recent employment gives me some perspective of research and extension problems, and I believe these are to some degree shared by other Deans of Agriculture, Directors of Experiment Stations and Extension Services.

## The Setting for Commercial Agriculture

I have become wary of making grand prognostications about what the long distant future will be like. Most futuristic predictions are fundamentally current trend extensions. But trends do change -- and these critical times of changes are what predictors have difficulty in idenifying. My time horizon, therefore, is quite limited -- 10 years at the outside. The real challenge anyway is to keep our outlook up-dated as time and events march on.

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In this time frame, several things, I believe, will be happening. Without any elaborate model development, I suggest the following are major problem and situation shapers in commercial Agriculture:

1) The ancient cross of the cost/price squeeze in Agriculture is not going away. In fact the results of the present and near future situation may give the seemingly chronic disease of Agriculture considerably different and virulant dimensions:

....There will be increased possibilities of much greater price variability for Agricultural products than has existed anytime in the post-World War II period. Expanding involvement in international markets; the increasing use of untraditional raw products in ever-increasing processed food products -- both indicate more demand and supply variability and perhaps a change in the nature of the functions themselves.

....Prices of the Agricultural input industries will certainly not develop any such volitivity. The nature of its competitive structure means increasing importance of pricing practices and marketing behavior.

....There will be pressures for the increased use of debt financing in Agricultural production, both real estate and non-real estate, which will mean still more fixed charges to be handled.

2) Food will be of increased public concern -- its supply and relative prices, its purity and healthfulness; the ethics and economic behavior of its business operators.

3) All levels of the food business face the prospect of increased public regulations aimed at restricting the rights of private property and freedom of entrepreneural action. The so-called free market faces great increases in bureaucratic red tape and costs.

4) The speed of technological change may slow down. Significant technological discoveries and developments are more costly to obtain; introduction of new technology into practice will be more costly and more difficult.

5) The food production establishment will become increasingly vulnerable to technological crises. The search for efficiency results in less variation in plant materials, animal nutrition and management and general production management practices. When something goes wrong, it increasingly can go wrong in a big way!

6) The clientele for our research and extension services will remain diverse. The "bigs" will not completely take over. In fact, schemes of running sizeable farming operations in concert with other employment is a relatively permanent organizational pattern not to be confused as a route "in or out" of farming. The young and beginning farmer will be of greater importance.

The Definition of Commercial Agriculture

In the discussion here, "commercial agriculture" is broadly construed to encompass the producing farmer as well as the industries selling to him and marketing his product. It makes less sense now

than in the past, and will make still less in the future to deal with the food and fiber producing and marketing chain as separable components.

On the producing side "farmers" must include the "medium sized" and "part time" operations as well as the relatively few giants. It makes sense to sort out the "subsistence group" from this package -- but that is about all.

I might, at this juncture, quickly protect myself from the criticism of all of those in Agricultural Economics whose activities are related to the problems of world development, community development, resource development, etc. These problems are important and have a rightful place in the total activities of Agricultural Economics. The subject of this paper however, is limited to only one of the important segments of the profession.

The Revitalization of Policy Research and Extended Education

Agriculture Economics played a major role in the basic policy issues that faced us in the immediate post World War II years. Research tackled the fundamental issues in price supports, storage programs, land retirement proposals, etc. Extension developed the strategy and won public approval for doing educational work in these controversial areas. In fact it does not stretch the facts to assert that Agricultural Economics played a major role in formulating policies that finally evolved.

For some reason research and extension efforts in the public policy arena seemed to have sharply declined in recent years. The major role of both policy research and education is to help clarify

the problem issues, develop and evaluate potential alternatives for solving them. Perhaps there were no substantive issues or the problems themselves were too obscure in the public consciousness to deserve attention.

Whatever the reason for recent inactivity, I suggest the situation has changed and the problems of public policy again are in need of the illumination that Agricultural economists can give it. The present situation of Agriculture and the food industry can best be described as "policy-less".

Only a very optimistic few hold that a new era of great prosperity for Agriculture is here. I hope they are right, but I do not believe they are! As suggested earlier the income problems arising from disadvantageous cost/price relationships probably will return upon the scene with renewed vigor and new dimensions. The nature of the problem has been complicated by growing international trade. The trade issue additionally is not entirely an in-house one of expanding Agricultural market outlets. The U.S. economy must generate a growing source of international exchange in order to buy critical materials from abroad. In this effort the relative efficiency of Agriculture is a trump card.

However, as recent events have sharply demonstrated, pursuing these markets vigorously runs head-long into the relatively cheap food for domestic consumers which has been a major result of past Agricultural policy. Heavy involvement in international markets also injects a degree of income risk and uncertainty that has not been with us for twenty years. Proposals for various kinds of storage and

reserve programs have already surfaced as one issue needing definitive research and educational attention.

Other socio-economic political issues are crying for intelligent attention. Though many would like not to admit it, the behavior of our food marketing system does not fit the model of highly effective competition. The type of access to markets (both input and output) that will be available to farmers remains a critical question. The whole array of regulatory control over land use and entrepreneural decision making cries for attention. How "free" should the market system be; how "private" should property be; how much "public protection" of individuals is in order? These question take on the labels of land-use policy; environmental protection; consumer protection; transportation policy; energy policy, etc. Currently they suffer from an extreme dosage of emotionalism and over-simplification.

Frankly, considering the problems that our country seemingly faces in the whole broad range of economic policy, this may be the opportunity for Agricultural Economics again to lead the way. I recently read an article that was commenting on the state of the profession of economics. The comment was that the profession must be in considerable disarray for the lack of its usually vocal reaction to important economic issues of the day was deafening! The recent fine work in pulling together appropriate educational material to focus on the question of "Who Shall Control Agriculture" demonstrated again the leadership role that Agricultural economists can play. Hopefully it is just the beginning.

The Market Place Presents New Challenges

Immediately after World War II, Congress, through the Research and Marketing Act, gave a priority direction to the marketing work in Agricultural research. Following normal procedures, the research establishment resisted the change in direction with predictable reaction. It first tried to redefine marketing so broadly that the additional resources could be funnelled to support work already underway. (This same procedure again has been followed as Congress has attempted to emphasize rural community issues.) However, such reactions are normally temporary and to take credit, added research and extension activity on marketing problems did evolve. Much improved knowledge about the efficiency and behavior of our marketing system was developed and extension efforts in the area did expand in the 1950s.

Many recent developments, however, have indicated that our marketing knowledge basis has become old and fairly full of holes. Statistical series do not shed much meaningful light on market behavior -- data used for measurement often appear to have inadequate bases. Much of the substantive measures of consumer demand are based on data from before the early 1960s. Analysis of advertising and demand enhancement has been largely relegated into the hands of those selling the service itself. The high cost, inefficiency and chaos of the food transportation system has all the ingredients of a national scandal. The growing institutional markets for food usually receive only afterthought analysis and attention.

From the farm producer's standpoint, I doubt whether we yet can

answer in a definitive way whether there is a substantial difference in competitive advantage among farmers of different sizes. The same reservation applies to the important question of impact upon price and output stability of the changing size structure of farm units. Extent of meaningful knowledge is limited concerning the impact of cooperatives and their activity in the modern scene.

In the language of the extension educator, teachable moments concerning food and its marketing system have been occurring recently with great frequency. Have we reacted positively to the opportunities with forward-looking, soundly-built programs which enhance the marketing understanding and knowledge of farmers, firm managers, consumers and the general public? Unfortunately the basic educational job in this arena is never done. Each new generation of people must relearn again some of the basic propositions about the nature of marketing margins, channels, producer and consumer behavior, competition, etc., etc. The challenge is not only to effectively teach, but also to have something more than popular myths for content.

The Farm Firm A Continuous Challenge

If the various propositions laid out earlier are accurate observations of the future, then our research and education work with this clientele will need sharpened emphasis and attention. The fundamental conclusions for farm operators from much previous research and educational efforts can be summarized fairly succinctly: get bigger -- more land -- more machinery -- more fertilizer -- more capital. The assumption for the manager was rather narrowly confined -- he should consider farming his full time occupation and his goal should be to

maximize his dollar income. The market assumptions were also rather straight forward -- the critical inputs such as land, equipment, fertilizer, energy, were considered available and relatively cheap and market outlets would be available where products could be sold at the going price.

The research and education work done following this rather restricted model has been fruitful. However, a short period ago we were sharply challenged as to whether following this route served only the very large farmer and ignored the remaining farming structure. And of course, recent shortages, galloping input costs, increased uncertainty of output prices and a whole host of other technology-restricting constraints related to land use and the general environment has posed still additional variations to the management theme. These events have sharply altered previous costs and income assumptions and levels. In the biological area it is widely acknowledged that each new technological advance re-opens problems previously considered solved. I suspect that management research falls more into this same category than we like to admit and that many rather basic managerial research problems need continuous re-doing.

The extension education challenge is fully as difficult and frustrating as the research. A task force was recently assembled to address the issue of improving extension education for a growing Agriculture. One of its conclusions was that the extension effort should effectively reach more of the mainstream farm producers who produce 90% of our food and fiber. It particularly singled out the needs of the average limited-resource and the younger farmer. This,

of course, is a bigger and more diverse clientele than the large and progressive farm leaders with rather unlimited progress and growth capabilities. To effectively serve this group of farmers will require special creative effort on the part of both research and extension.

Extra effort is needed to assure that in both extension and research there is improved cooperation between the Agricultural economists and the many other subject matter disciplines serving Agriculture. There are increasing restrictions on how the activities of farming are to be carried out and these have total management ramifications. New rules and regulations are continually proposed. These need the cost-and-returns analysis of economists as well as the input of the particular technology involved. Intellectual ivory towers and disciplinary jealousies have little place in the problem-solving mission of our Agricultural Experiment Station or Extension Service.

A Closing Note

From the above, it should be evident that I consider the future role of the Agricultural economist in the research and education efforts with commercial Agriculture to be of importance. Certainly many of the current and developing problems can be better handled if they receive constructive input from this discipline.

Will Agricultural economists play an expanding role in this research and educational need? This is another and separate question. Since World War II there has been a substantial growth of Agricultural research scientists in our experiment stations. However, during this time span the growth in Agricultural Economics personnel has been just about the same as those in other disciplines. This development

occurred during the time in which there was an effort on the part of Congress to expand the research effort in marketing! Why has this gap between potential and actual involvement developed? Will it change in the future? From my viewpoint the following questions hold a key to the future development:

1) Will Agricultural Economics improve its cooperative relationship with the other plant, animal and related sciences in Agriculture? If I understand my history, Agricultural Economics split off from economics partly because of this cooperation question. It made some of its finest contributions by attacking important problems in close working relationship with agronomists, horticulturalists, animal scientists, etc. Recently there has been a tendency to turn inward and focus upon itself.

2) Will Agricultural Economics re-focus its attention to bringing economic analysis to solving work-a-day problems of importance to its clientele? Can the profession restrict its love affair with abstract model building and talking to itself to at least a part-time occupation? Many of the problems seeking attention are not on the periphery of knowledge. Much of effort will be that of re-plowing some old ground. Other economists may not have much respect for it. But if well done, farmers, business people, consumers, citizens, and taxpayers will praise it and therefore may be willing to support it.

3) Will Agricultural Economics be willing to work at effective

communication with the various groups of its public? This, of course, is a similar question to the one above. Unfortunately each new generation of people have to start their learning from scratch. Economic literacy, whether it be for farmers, consumers, citizens or environmentalists, is an acquired characteristic not an inherited one. And most people do not fight to drink at the fountain of knowledge -- they have to be persuaded. The subject matter again is basic and maybe uninspiring. But unless we can communicate with our audiences (and incidently also to our station and extension service directors) expanded support cannot be expected.

4) Can we in the experiment stations and extension services of the universities become more responsive to solving short-run important problems? Such problems often require a team-of-disciplines approach. They often are not easily adaptable for use in the slow moving graduate training structure. Much of our research effort is heavily entwined with the graduate operation aimed at producing other Agricultural Economists. It also is usually more comfortable to work alone rather than in harness with others. However, unless we can improve in our ability to handle such problems, such work either will increasingly be funded to special research agencies or the experiment station will have to reduce its commitment to the graduate training enterprise.

Many academicians will react to a presentation such as this in a

predictable way. They will agree that there are many things needed -- and many of the points raised are valid. If the Dean and university administration will allocate additional funds, they'll agree to get someone to do the job.

I recognize that the simplest and least painful way to adjust the activities is through the "add-on" procedure. I also have to share my firm opinion with you that this relatively painless way of allocating resources in the educational establishment has a low probability of becoming reality. Three observations are behind this conclusion:

1) Extra resources are most easily attracted to an area because it is useful -- not because it can be useful. Extra resources come most easily to demonstrated performance; it is most difficult to fund promises.

2) There is little evidence to date that the increased public concern about the food and Agricultural operation will translate itself into hard support. There has been more hot air than hard dollars to date! In fact in recent years, there have been efforts at the national level to severely cripple, if not to kill, the decentralized system of state extension services and experiment stations. The extension and research system of our land-grant colleges is widely recognized abroad as one of the unique keys to our Agricultural superiority. Domestically, our leadership often acts as if it believes our Agricultural productivity and efficiency were automatic developments which will continue indefinitely without effort. This greatly complicates paying the bills --

especially when inflation means it takes more to stay even. The shocking fact is that the total experiment station and extension program effort is probably less than in the middle sixties.

3) The research establishment of higher education in general has lost a great deal of the public support given during the immediate post-war years. Each can develop his own explanation for this development, for there are many and varied reasons proposed for this disenchantment. Again, this situation is greatly complicated by the sharp inflation of all costs of operation.

In many ways, research and extension establishments have to practice what they know is a very difficult and often painful process for others -- adjustment to stay relevant in a model of little real growth. They also must accept what they know is true for others -- if adjustments are not taken, support to the enterprise diminishes still further. Even so, I am optimistic. If we contribute to the solution of important problems and work vigorously at the continuous and difficult job of effectively communicating our contributions to others that we will receive substantial long-run public support.