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POLITICS OF PUBLIC SUPPORT OF RESEARCH AND EXTENSION

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The purpose of this paper is to discuss the state/federal partnership for research and extension, the payoff from the partnership, the research and extension agenda and the future challenges facing the system. Specific attention is given to the need for unified political action to support the system.

The State/Federal Partnership

The legislation establishing the Land-Grant system, the Department of Agriculture, State Agricultural Experiment Stations, and the Cooperative Extension Service have proven to be some of the wisest legislation passed in the history of mankind. These historic pieces of legislation set in place that state/federal partnership that has been responsible for the development and dissemination of information upon which modern agriculture in this nation is built. It has resulted in an agricultural research and extension system that is the envy of the world — attracting the attention of the industrialized nations, the developing nations, and also the third world nations. Many studies have shown that each dollar invested in agricultural research and extension returns large dividends to society. Unfortunately, the system has been so successful that it is taken for granted. We understand and appreciate it; however, we have not done an effective job in acquainting others with the system.

In the beginning of the state/federal partnership, expenditures of both state and federal funds were very meager. After the system gained momentum, new technology was developed faster than it could be applied to farms and ranches of this nation. Consequently, a backlog of science and technology or a reservoir of unused technology was developed. After World War II, the sophistication of agriculture developed to the extent that technology could be applied very rapidly.

Although research continued to develop new technology, extension also drew heavily upon the reservoir of unused technology.

The ingenuity of the American farmer, operating in a free-enterprise environment, was the key ingredient in the application of the new technology.

Many assessments of agricultural research needs in the 70s indicated that the reservoir of unused technology had been depleted. Subsequently, the application of technology to agriculture began to slow down and previous rates of increase in yields in many of our major crops began to decrease. Further massaging of existing technology is not likely to produce large additional gains. We are dependent upon new technology yet to be developed.

The Payoff from the Partnership

The development of a highly sophisticated agricultural industry in this nation is one of our major success stories. Agriculture provides food and fiber in abundance for everyone in the nation, with only 17 percent of disposal income spent for food and approximately one-third of total production exported to other countries. Last year the United States exported approximately one in three acres for a total of $40 billion. Furthermore, it is anticipated that exports will total approximately $45 billion in 1981 an approximate 13 percent increase. It raises the question, are we exporting too much of our resources in the form of food?

Agriculture in this nation is a technology-driven industry. It is an industry that has changed very rapidly during the last three or four decades. Since World War II, productivity of the agricultural industry has increased more rapidly than the other industrial sectors of the nation as a whole. In fact, we have experienced a doubling, and in some cases a tripling, of yields of most of the major crops during the last 30 years. Similar gains have taken place in animal production systems. This bounty came as a result of the efforts of dedicated scientists, agriculturists, farmers, and others pooling their talent to develop and apply technology to the production system. Furthermore, we are blessed with a favorable climate and an abundance of fertile soil which has enabled us to capitalize on the new technology. The Midwest grain belt is the largest contiguous area of land in the world with fertile soil and a favorable climate. Also, the new technology changed the land resource base by making it possible to farm large areas economically that had not previously been productive. In addition, crops moved farther north as more hardy and early maturing varieties were developed and into the arid areas as drought tolerant varieties and irrigation were developed. None of this would have been possible with the technology of 100 years ago or even of 30 years ago.

The Research and Extension Agenda

The research agenda consists of two major items: a mission-oriented thrust designed to serve the present agricultural industry

and a long-range basic thrust designed to develop the technology base upon which agriculture in the decades ahead will depend. It is imperative that both receive adequate funding; however, neither is being adequately funded at the present time. We now expend about 65 to 70 percent of the resources in agricultural research in the mission-oriented short-time problem solving phase and about 30 to 35 percent in the long-range basic dimension.

It is absolutely necessary that we increase expenditures in the long-range dimension, because the problems are extremely complex, time-dependent, and their solution will demand a sustained effort. On the other hand, we cannot further jeopardize the mission-oriented research by diverting a greater portion of the present funds to the long-range dimension. In fact, we need to strengthen the mission-oriented effort because the biological world is constantly changing and new problems emerge each year. For example, varietal development is a continual process since the average life of a new variety is only about 5-7 years because of the development of susceptibility to diseases.

In recent years there have been attempts at the federal level to substitute competitive grants for formula funding or to promote a competitive grants program at the expense of formula funds. The directors and administrators of research in the states have opposed this trend on numerous occasions before the Office of Management and Budget and the Congress. We feel that basic formula funding is essential in maintaining and supporting the system. Our ability to respond effectively to competitive grants depends upon maintaining the resource base of the system.

Continuity of funding is essential and formula funds provide this continuity whereas competitive grants do not. On the other hand, competitive grants provide flexibility and enable the directors to focus on high priority and critical problems. Both approaches need to be supported vigorously and neither of these programs should be pursued at the expense of the other. We need balanced and equitable funding for each.

Let us now look at the Cooperative Extension Service (CES). The major mission of CES is to serve production agriculture. In addition, CES is involved in many other useful activities that contribute to the well-being of society, many of these in the inner city. In all of these areas, there has been and will continue to be a very rapid increase in new technology. Further, the educational level of the clientele served by CES will continue to increase. The explosion of new knowledge, coupled with rapid developments in computer-driven information transfer systems, will necessitate that CES change its information delivery system. Consequently, CES is moving rapidly toward a computer-driven information transfer system so that timely information specifically tailored for its clientele can

be provided. Further, information can be retrieved from various sources and made available to the public either through individual terminals at the farm or in the County Office.

Future Challenges

The problems facing the scientific community of research and extension are exceedingly complex. Their solution and integration into the production, processing and distribution system will demand some of the best trained minds of our day. Furthermore, the demand for food and fiber is expected to expand during the next two decades. Dr. Jean Mayer put the demand for food into proper perspective at the International Crop Symposium in 1975 with the observation:

> *"This means that from now to the turn of the century man will have to find as much food as he has in all time up until now."*

This is a staggering challenge; however, it takes on even greater dimensions when one considers that we may be moving toward a resource-limited world economy. This means that we will probably have less non-renewable resources to be utilized in agricultural production, processing, and distribution in the future. Therefore, the next generation of agricultural research must stress the development of technology which will require less non-renewable resource input, be scale neutral so that it can be widely adapted nationally and internationally, and be socially, ecologically, and politically acceptable.

Agriculture supports all life and is sustained by a thin veneer of soil nourished by the fresh waters of nature, warmed and cooled by the gentle breezes that sweep across the land, and energized by the soft rays of the sun. Through countless centuries nature has developed a delicate balance in its life support system and all of life has prospered. In our quest to exploit and utilize the earth's resources and to produce food for an ever expanding population, man has threatened to upset that delicate balance.

On a global scale, each year millions of acres of our prime agricultural lands are being irreversibly converted to other uses. Through misuse, countless acres are being severely eroded by wind and water. This not only destroys the land but deposits sediment in our streams, lakes, and estuaries. In many parts of the world, deforestation and mismanagement of the land speed up desertification.

As the land resource is continually driven harder, productivity may decline because of reduced organic matter, soil compaction, and mismanagement unless we use appropriate technology. In some parts of the world we are literally mining our underground water resources and in others our rivers and streams are becoming closed systems. These are global problems and demand the attention of all

of us because the survival of the human race depends upon maintaining the soil and water resource base so that future generations yet unborn may live in abundance.

There are some technologies available which will maintain or enhance the productivity of our soil and we must encourage their adoption. Furthermore, we must become increasingly concerned about the pollution of our land and water resources and allowing our environment to continue to deteriorate because of man's activities. We must weigh the tradeoffs and determine the long-range consequences of our actions. These factors must be evaluated by an informed citizenry and not by a few acting on emotions and devoid of the necessary knowledge to make intellgient decisions. We all have a responsibility to become informed because these are critically important decisions that must be made.

A Call for Unified Action

My concluding message is a call for a unified effort to support and defend that historic state/federal partnership which has been responsible for developing the research and education base upon which the agricultural industry of this nation rests. As criticism has mounted, we have not always acted in a wise and prudent manner. In some instances, we argued that all is well and that we had a clean bill of health.

On the other hand, we have responded responsibly by redirecting our efforts as new opportunities and challenges arose even though we have had a static or diminishing resource base. Unfortunately, we have not done a good job of acquainting the general public either with our priorities or the tremendous contributions made by our efforts. In arguing our case, we have often talked to each other rather than trying to build linkages with other groups. At times we have failed to speak collectively on behalf of the system and our rhetoric has done little more than cancel opposing views.

We can no longer take this position. We must be willing to put our particular commodity interests aside, whether it be cotton, corn, soybeans, or cattle, and come to the aid of the research and extension system that supports all of agriculture. I refer specifically to the historic state/federal partnership of research and extension developed over 100 years ago.

We must recognize that we no longer speak from a position of strength in numbers. In fact, there is no single group in this nation that has the balance of power due to numbers alone. We are a nation of political coalitions, consequently, we must become involved with other groups. Many of these groups may seem to be strange bedfellows. However, we must identify common goals and objectives. We will not be successful if we approach these groups from a position of "poormouthing". Nobody is interested in hearing only about

our problems. They are and will be interested in working with us if we can show them there is something in the coalition for them. We must articulate in understandable terms the benefits to their group. We must get down to the common language that common folk understand.

We must realize that the world does not revolve around our campuses and laboratories. The world is out there, the problems are out there and the political support needed to address these problems is out there. I am confident this can be done, because we touch the lives of every citizen of this nation each day. We all eat and wear reasonably comfortable clothes. Again, our approach must be a unified one and it must be properly orchestrated. Anything less will fail.

Let me now relate why I think this historic state/federal partnership must be maintained and strengthened. In my judgment there are four reasons:

1. *From a financial point of view.* All of us recognize that this partnership is not a 50-50 partnership from a financial point of view but is a state-supported operation with assistance from the federal government. For example, the state-federal contribution to the Experiment Stations is roughly 80/20 percent and for the State Extension Service is somewhere around 65/35 percent. We cannot judge this partnership from the financial contribution alone. The states, both Experiment Stations and Extension Service, depend upon federal formula funds to give balance and stability to their programs. Formula funds help us to maintain a base so that we can effectively respond to contracts, gifts and grants and other sources of funds.

   We are not opposed to competitive grants, but we are opposed to developing a grant system at the expense of formula funds. They also provide continuity within our programs and allow us to focus our attention on some problems that do not have high visibility at the state level. Consequently, the state/federal partnership is important from a financial point of view even though we would like to see more funds provided by the federal government.

2. *From a planning point of view.* This partnership is also important from a planning point of view. We need to plan so that priorities reflect needs. Those of us in the states are close to the problems. We feel that we can make a significant contribution to the planning process, because we can identify the mission-oriented problems more readily than our federal counterparts. Further, since the majority of the scientists are located in the State Agricultural Experiment Stations and the State Cooperative Extension, their insights are invaluable in identifying the basic problems needing attention. The total planning effort must be conducted in such a way that the state and federal efforts are complementary.

In addition, through joint planning we can properly focus scarce resources on high priority areas. We will never have enough resources to adequately pursue all the problems needing attention, however, through adequate planning we can focus on the critical areas. I would caution that we need to make sure that our planning does provide sufficient flexibility to allow us to respond to emerging needs.

3. *From the support point of view.* There is no question but what the joint effort strengthens us at the state level. Those of us in the states are in a much stronger position at the state level because of our relationship with the federal government. If our state legislative leaders feel that the programs are worthy of direct support by the federal government, they are more apt to think that these are programs worthy of investment of state dollars. I think that all of us need to be more conscious of loose talk and criticism of each other. I know those of us in the states have been particularly concerned about loose talk and criticism at high levels within the U. S. Department of Agriculture. On the other hand, those of us in the states have often been too eager to criticize the USDA. We simply must be supportive of each other if we expect the system to survive.

4. *From a political point of view.* We have the best of two worlds if we will only use our heads. Those of our ranks who are a part of the federal system have an opportunity to influence the Executive Branch of government, because they are part of it. On the other hand, those of us in the states have an opportunity to influence greatly the Legislative Branch of government. Even though we are an ever decreasing minority and do not have the strength in numbers, we can be effective by working together. Working together I believe that we can adjust in such a way that we will be able to weather the storm and maintain a strong and viable agricultural industry.

Where do we go from here? There must be a good faith relationship between the State Universities and the Land-Grant Colleges and the USDA. Further, since other federal agencies such as EPA, USAID, NSF, NIH, etc. support research and extension in agriculture and related areas, these activities must be coordinated with those in the USDA and in the various states. In addition, all of us must do a better job of acquainting key decision makers with the payoff from previous efforts. We have a good story to tell. Let us get on with the job.

Agriculture in the 1980s