Many factors will play a role in shaping the future of agriculture. Major among these are: (1) the changing governmental policy regarding production agriculture and rural development and (2) the changing market structure. I will start by briefly discussing each of these and then make a few remarks on the implications these factors have for agricultural extension, research, and service workers.

THE CHANGING AGRICULTURAL POLICY

The U.S. agricultural policy has had and continues to have two objectives. The first has been to assure the population of this nation an abundant supply of food and fiber and to provide products for foreign trade. The second objective is and has been to assure the farmer a fair and full share of the nation's prosperity and growth.

The first objective has been achieved. Research, education, and encouragement were the principal means used to accomplish the goals. The fulfillment of the second objective has been less successful than the first because: (1) agriculture has capacity to produce more food and fiber than can be marketed at prices which are reasonable to the farmer, and (2) farmers have few alternative economic opportunities either for themselves or their land.

The Department of Agriculture is committed to continue to support programs that will help stabilize farm prices and increase farm income. We believe this can best be accomplished by placing greater emphasis on the market system and greater reliance on decision making by farmers rather than by government.

The 1970 Agricultural Act was a major step in the direction of helping agriculture to develop its own production and market system. The act: (1) provided farmers with greater freedom in regard to what and how much they produce; (2) put greater reliance upon the market system; and (3) differentiated the problem of the farmers in the mainstream of agriculture from those problems associated with economic development in rural areas.

Nonagricultural America also has its desires and priorities. Pressure is being exerted upon government for social programs, such as
minimum annual income and government-supported medical care for everyone. These programs cost money. Knowing that it will be difficult to increase taxes to pay for them, these interests are looking for money in existing federal programs.

In answer to these present voices from the country and the city, government farm policy appears to be shifting to a stance of providing enabling-type legislation. The stage will be set, keeping national interests in mind, to permit farmers to play their own production and marketing game. What is happening in dairy cooperatives is a good example of the direction we are going.

THE CHANGING MARKET STRUCTURE

Marketing of agricultural products is coming full circle. About a half century ago farmers were hauling their produce and driving their livestock to local market centers. They sold to merchants, shippers, packers, speculators, and, quite frequently, directly to consumers.

There was farm bargaining. Prices and terms of sale were determined by farmers and buyers haggling with one another. Farmers suffered because of a lack of communications and information. They had no method for determining the true competitive price for their product. Farmers' bargaining power was weak. In general, they were forced to take the price offered. Farm income was low.

The problem of discovering the competitive price and getting a fair market value was one of the factors that encouraged farmers to market their products through the then developing terminal livestock and produce markets. These terminal markets established a place where the interaction of supply and demand discovered the competitive price. Buyers competed for the supplies available. Both sellers and buyers of farm products were assured that they were dealing in a fair competitive environment.

But the terminal marketing system began to break down during World War II when the demand for farm produce expanded faster than farm production. Retailers, processors, and packers, in order to obtain supplies, procured directly from farmers.

The economic benefits from large-scale direct buying encouraged chain store companies to increase the number of stores they operated. Competition from the large chains forced the smaller independent retail food stores and small chains to join together in buying cooperatives to gain some of the advantages of direct and large-scale procurement.

By 1970, bypassing the commissionmen and wholesalers has
become the rule rather than the exception for chain stores, cooperative buying groups, packers, and processors in procuring agricultural products. The only farm products that have escaped this change are feed grains, soybeans, and wheat.

The volume of livestock and produce handled at the terminal markets has declined. Economics has forced many livestock markets to close and is forcing others to consider closing. Produce auction markets have become centers for handling products that were not sold directly to buyers. The haggling between farmers and buyers has returned. The discovery of competitive market price and getting it has become, again, a major problem for those who produce our farm products.

In some ways, we are back where we were fifty years ago. There are some major differences, however. Two are important here.

First, the relationship of the volume the farmer produces to the volume each buyer procures has changed. The volumes procured by individual chain store buyers and by buyers for national and international processing and packing firms have increased many times more than the volumes produced by individual farmers have increased. This has weakened the farmer's bargaining power.

Second, farming today is a commercial business rather than a way of life. Farmers have large investments. They buy most of the items they use in their production process. They have sizable interest, taxes, and other payments that they must meet or be forced out of business. Fifty years ago when farm prices in a particular year became unusually low, the farmer would reduce his spending and decrease the family's living standard. Today, because the modern farmer is unable to stop his spending, the assurance of a market outlet and obtaining a fair price is much more important to him than it was to his grandfather.

Increase in Ready-to-Serve-Foods

Growing out of the changing market structure is a new food marketing system. The form in which food is delivered to the ultimate consumer is rapidly changing. Restaurants, hospitals, schools, colleges, business offices, industrial plants, government installations, the armed forces, and retirement homes are among the groups that are closing down their conventional kitchens. Some are buying food that only needs to be heated and seasoned before serving. Others are contracting for food and food service. In addition, housewives are buying increasing volumes of nearly-ready-to-serve foods in retail stores and from fast-service carry-out restaurants.
Nearly-ready-to-eat food is not new. Witness the TV dinner. However, the concept of having fresh and processed food assembled and converted into nearly-ready-to-serve food in large commissaries and then used as component parts of meals for a large portion of the nation's population is new. This new concept of food and food service is stimulating change that is affecting all segments of the food and agriculture industry.

Food processing companies and some retail stores are becoming fully integrated food companies. Some processors are integrating all the way forward into the food service and restaurant business. Others are integrating forward into preparation of nearly-ready-to-serve foods and marketing their product through retail stores. Some retail chains are entering the mass feeding business.

In order to have the right quantity, quality, and type of product at the right time and place, food companies are increasing the use of forward contracting in procuring the farm products they handle. Once processors and packers forward contract with the food converter they want farmers to contract with them. Contract terms are mostly on a product specification basis for a given quantity to be delivered at a predesignated place at a specific time. Increased use of product specifications in procurement of product is forcing farmers to use particular varieties and specific cultural practices.

Multinationalization of Food Procurement

Under the new integrated system, procurement of food products is moving toward a world base rather than a U.S. base. Some U.S. based food processing companies already have farming operations, food processing plants, and retail companies in foreign countries. These firms are moving food products from country to country as market opportunities develop.

Some retail stores are forward contracting with firms in foreign countries. It is common for these contracts to specify the type, quality, and quantity of products and the dates of delivery to the stores in the United States. Often the contracts are for more than one year.

Some agricultural groups consider the trend to multinational food firms undesirable. They view it as providing increased competition for U.S. farmers in our domestic markets and a reduction of opportunity in our export markets. Most consumers, however, look upon it as a desirable trend.

The significance of this to the American farmer is that if he is to retain his domestic market and expand his export market, he will have to outproduce and outmarket farmers in other nations.
THE NEW AGRICULTURE

No one knows for sure how the agricultural production-market system will eventually be organized. Most indications are that it will be a highly integrated system. Major companies will undoubtedly be integrated from the farm to the food service companies in the institutional trade and to the chain stores for the retail business. Individual firms will be large enough to influence changes in the system rather than being a passive reactor as agriculture has historically been.

All evidence indicates that food firms will be multinational in scope. Management will be highly skilled. Production and marketing should eventually be coordinated in such a manner as to eliminate the historical waste and surplus problems. Marketing firms will undoubtedly have to provide or arrange for much of the capital that will be needed in production agriculture.

Let us now try to evaluate how new technology and market problems are going to affect the Corn Belt farmer during the next decade.

By the mid-1980's, Midwest agriculture should look something like this. The dairy business will be under the control of the dairy farmers through their operating and bargaining cooperatives. The most common size of herd will be about 600 cows, and the business will be highly respected and profitable. The cattle feeding business will all have gone to the large feedlots with a capacity of 400,000 head or more per year. These feedlots will be tied directly to the packing and processing plants that will be owned by a large food company. The broiler and turkey industry will all be in large units tied to processing plants. The hog business will be about like the cattle feeding business. The size of the unit will depend upon the number of hogs needed to operate an efficient slaughtering and processing plant. The egg production will be in units of 3 to 5 million birds. Most of this, too, will be tied directly to the retail store.

The grain farms will be large. Most fences and farm buildings will disappear. The number of people living on the farms will be small. Agriculture in the Midwest will have become industrialized.

Agriculture does not have to go the large-scale fully integrated route. There is sufficient economic research to show that the owner-operator farmer can obtain higher yields from both land and livestock and has lower labor and management costs than the very large corporate type of farms. Studies also show that farmers as individuals cannot market the products or procure their factors of production as efficiently as large integrated operations. Data obtained from some of our leading cooperatives show that farmers who have joined
together to market their products and to procure their supplies can capture nearly all the benefits achieved by the very large firms.

How agriculture will eventually be linked or nonlinked with the market and distribution system will be decided by farmers. Four different types of industry organization seem to be developing. These include:

1. Farmers organized into bargaining associations to negotiate price and terms of contract with processor and packer. Farmer bargaining, at best, can be only an interim step toward developing a stable agriculture. This is because successful farm bargaining tends to sow its own seeds of destruction. If negotiated price results in a profit for the farmer, then he increases production. The result is usually a smaller margin at the next bargaining session. Because periodic price negotiations must take place, it is difficult for either the farmer or the marketing firm to make long-run investments.

2. Large investor-owned food-converting corporations completely integrated from the ultimate consumer back into farming. This type of arrangement would assure the food companies the amount and type of product they require at the place they want it. The food companies also would know what their production costs were. A major disadvantage is that specialized management is required. Economic studies have shown that large farms are more difficult to operate than most manufacturing plants and that management and labor costs are higher than for the owner-operator size farm.

3. Fully integrated multiple-product farmer cooperatives. The market structure of farmer cooperatives integrated forward from the farm to the ultimate consumer should offer the greatest potential for getting the maximum return for management, labor, and investment. It would assure the farmer a "home" for his product. It would provide him the opportunity to share in all the profits from production through marketing. It would protect his cherished decision-making role on what and how much to produce and how to market it.

4. Joint ventures between farmer cooperatives and investor-owned corporations. This combination provides a way for pulling together owner-operators in farming and aggressive marketing firms. Generally, farmers furnish the raw product, own processing plants jointly with the corporation, and the corporation does the marketing, product research, and market development. Some such enterprises already are in operation. A Florida citrus cooperative is joint-venturing with Minute Maid Corporation. Allied Grape Growers Association in California is joint-venturing with Heublein, a major bottler and beverage merchandiser.

32
No single market system is expected to take over the entire food industry. American farmers' desire for independence and the continuing inflow of aggressive entrepreneurs that has been the hallmark of a free enterprise system assure plenty of competition. Consequently, ultimate food consumers can continue to expect an abundant and varied food supply at relatively low prices.

IMPLICATIONS FOR AGRICULTURAL EXTENSION, RESEARCH, AND SERVICE WORKERS

Probably no group of public servants have contributed so much to improving the standard of living of the people of this nation as have the agricultural extension, research, and service workers. These three groups together have played a major role in making America's agriculture the world's most efficient.

Now U.S. agriculture is entering a new era. It is in the process of becoming part of the world's most efficient food and fiber system. This new system, as it is developing, is creating a major economic crisis down on the farm. The family farm, which for generations has been the backbone of the nation's agriculture, could disappear. It is in danger of being eliminated because those who helped to make agriculture great are not providing the type of leadership necessary.

As discussed earlier, there is adequate research to show that the efficient owner-operator farmer can produce farm products at lower costs than anyone else. In my opinion the most efficient food and fiber system would be one which combines the most efficient segments of the system.

We, the public servants of agriculture, can play a major role in bringing this about. The steps we will have to take include: (1) commit ourselves to provide the leadership and technical assistance necessary; (2) retrain ourselves so that we will have the technical competency; and (3) organize ourselves to do the job now.

I would like to briefly discuss each of these.

If we do not commit ourselves to providing leadership to develop the most efficient system, it will not develop. The opportunity for large corporations to gain short-run profit at the expense of the farmer and his family is too great. In addition, if those of us who are the professional employees in the land-grant colleges, the state departments of agriculture, and the U.S. Department of Agriculture do not provide the leadership, then production agriculture will go the route of the large corporation. This would cause heartache and tears to farmers and their families and in the long run could adversely affect the entire nation.
If we are to provide leadership in the industrialization of agriculture, we are going to need all the talent available. The solutions will require working with the entire food and fiber system. This will require the development of some new skills. I think many of the professionals in the U.S. Department of Agriculture would be eager to be retrained in order to take on the new challenge.

One organizational approach that might be used would have the three public groups represented here working together much as they have in the past. The state departments of agriculture would continue in a supporting role to research and education. The land-grant colleges and the U.S. Department of Agriculture would work hand in hand in research and implementation of programs. A team approach would be used. The team would have as its purpose the development of the most efficient industrialized food and fiber system. The team would leave the other problems in agriculture and rural America to somebody else.

In order to do this, both the land-grant colleges and the U.S. Department of Agriculture will have to make some adjustments. Researchers and extension workers would have to be on the same team. For the land-grant schools, I would suggest that the people programs such as rural development, human nutrition, and general education programs be kept on a county base. The county agents would work on people programs. Work with commercial agriculture would be done by specialists. Experiment station workers and extension specialists would all work together on the same team. The teams would work on an area basis rather than a county basis.

At the U.S. Department of Agriculture level, I would suggest the organizing of a multidiscipline team with the specific task of developing the most efficient food and fiber system possible. The team should include individuals who are interested in: (1) being part of a mission-oriented applied research team and (2) helping individual firms to implement the research findings. This agency would work hand in hand with the state groups.

I think that if we, the public servants in agriculture, provide the leadership necessary to help agriculture and associated business develop the most efficient food and fiber system possible, the problems that are worrying the efficient farmer and his family would slowly fade away. If we do not, then we will slowly fade away. In my opinion the elimination of public research and agricultural extension education would not be to the best interest of either the farmer or the consumer.