A view of agriculture’s future through a wide-angle lens

by Kristen Allen

Traditional agricultural policy and its attendant narrow focus may have had its heyday. In the coming decades, agriculturalists must be better prepared for the rapid integration of forces not typically viewed as connected: changing consumer tastes and attitudes about food, agriculture, the environment, and resource use in an economically, socially, and politically changing world, with very new production and processing technologies. The combination of these forces will affect agriculture both directly and through their influence on other policies. For the agricultural community the message is adapt, learn, educate—or perish.

The Food, Agriculture, Conservation, and Trade Act of 1990 may have been the largest farm bill document yet, but physical size does not necessarily convey great significance. In fact, within the next twenty years we may come to view the 1980s as the beginning of the decline in relevance of traditional agricultural programs for the U.S. food and agriculture system. The Food Security Act of 1985 began this decline, by looking coyly in the direction of the market for farm price and income determination. Within twenty years, other factors will almost certainly be far more important in determining the health and vitality of the food and fiber sector than are farm price and income policies. Three factors will be particularly important: changing public attitudes, tastes, and preferences; international conditions and events; and technological developments. The interactions among these factors will be especially important.

Baby boomers and environmental and personal health concerns

Domestic markets will account for only a small part of future growth in demand, but U.S. consumers will have a significant impact on the type and mix of agricultural products demanded and hence produced. As importantly, consumers’ beliefs, tastes, preferences, and actions will have a profound effect on where and how products are produced, processed, and marketed.

For personal health reasons, people are increasingly interested in, and concerned about, what is in and on the products they eat and wear and the practices employed in the production...
of those products. More consumers are expanding their view of food to include medicinal uses. They also question agricultural production and processing practices, from the use of chemical inputs to the ethics of some animal confinement systems, to processing technologies that prolong the shelf life of perishable foods. The questions are based on health, environmental, and philosophical concerns and contain the seeds of change for American farmers and processors.

Although the depth of concern about environmental quality waxes and wanes with changing economic conditions, it does not disappear altogether. This concern touches a philosophical nerve; it raises questions about the right of one generation to deplete, degrade, and despoil the natural environment and pass on to the next something of lower quality than that received. The issues are complex; simple, sound-bite answers will not sit well with today's skeptical consumers and voters.

Concern for environmental and personal health is particularly important because it is so firmly rooted among baby boomers. This population cohort makes up about one third of the American consuming and voting public. Many of them experienced public and political activism in the 1960s and early 1970s. They are skeptical and used to being heard. They are largely urban and suburban dwellers, generationally and psychologically a long way from their agrarian forebears. Chances are high that the rising of their political star will coincide with the setting of the star of the agricultural lobby.

Partly related to the environmental/personal health concern is agriculture's historic dominance of natural resource use. Use of water and public land will be increasingly controversial. Already in the western United States we see fierce competition for water; agriculture versus household versus recreation versus wilderness. Environmentalists and taxpayers scrutinize below-market rental rates for public grazing lands. Shifting public preferences will impinge on historic agricultural use of natural resources.

The agricultural lobby is losing much of its political clout. It continues to be able to make politically persuading arguments for keeping such plums as low-priced water and grazing land largely because it has not yet faced a truly sharpened. Stewards now are viewed as keepers and protectors of resources; they may use those resources for economic gain, but society doesn't give them unlimited exploitation rights. The result of this changing view will be decreasing support for production-related farm subsidies, growing interest in principles that promote a more sustainable agricultural system, and increasing pressure for regulation of some farming activities or for making farm subsidy payments and benefits contingent upon certain practices. The balance among these approaches will be driven partly by domestic concerns and partly by developments in the international arena.

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**The changing global environment**

The dramatic changes in the world order over the past decade have already affected, and will continue to affect, po-
Thus, in the long run, we may see some of the former centrally planned countries look to the stable, mature countries and world markets for policy guidance they will receive some mixed messages.

After six years of attempting to negotiate acceptable rules for the game of world trade under the General Agreement on Tariffs and Trade (GATT), the negotiators are still mired in the issues of agricultural trade and agricultural subsidies. Negotiators strongly profess interest in lower trade barriers and greater market orientation in world agricultural trade; clearly it is to world markets that producers in the United States and other industrial nations must look for any growth in demand for their products. However, it is clear that a move in this direction will mean some loss of control of national policy agendas. Some GATT negotiators are apparently immobilized by the difficulty of balancing national interests and necessary world trade adjustments.

At the same time that government leaders contemplate lower traditional trade barriers, environmental and personal health concerns drive calls for barriers based on environmental, health, and safety concerns—real and perceived—at least for the short term. In the longer run, however, the importance of the world market will eventually drive attempts to harmonize and standardize regulations on environmental, sanitary, and phytosanitary issues. The complex mix of tastes and preferences, tradition, emotions, politics, risk assessments, and economics promises to make negotiations on the subject protracted and controversial.

New products, new processes, new institutions, and old fears
Technology increasingly affects American agriculture. Resource conservation and environmental quality are becoming more important than greater agricultural outputs. In production and processing, the emphasis is shifting from increased output to resource-use efficiency and environmental protection. Perhaps nowhere will the public’s schizophrenia be more apparent than in this area. We want cheap food produced by a system that uses fewer chemicals, preserves more resources—or returns them to their natural state—and produces less waste. At the same time, we are highly suspicious of many of the biotechnologies that may hold the greatest hope of meeting these often conflicting goals. The public in general has a low tolerance for involuntary risk when personal or family health may be in question, and is distrustful of government and corporate experts who might try to assure any fears.

In the area of information, technologies now on hand could revolutionize the food and fiber system by allowing marketers and producers to identify certain product characteristics desired by consumers. Consumers could be differentiated on the basis of these preferences and companies could produce and sell products designed to suit the tastes of different groups. For concerned consumers, information on many corporations’ social, ethical, and environmental stances is now available in pocket-sized books for reference during shopping trips. More convenient would be shelf bar codes containing the same information, which shoppers could read with scanners attached to their shopping carts. By the year 2010, these technologies may seem commonplace.

The combined impact of the many production and information technologies currently available, especially in concert with the changes we are witnessing in consumer tastes and preferences, could stimulate major changes in agricultural production, processing and marketing. Forward contracting and vertical integration in the food system may become the norm, as processors and wholesalers or retailers move to assure themselves of a consistent supply of a product with...
specific characteristics. Bulk marketing of homogeneous products may give way to specialized marketing of identity-preserved products. Such developments would have far-reaching implications for many current food and agricultural policies.

Challenges for the agricultural community

One of the important lessons to take from these predictions about the future is the need for flexibility in our view of agriculture's place in the general economy. Robert Reich wrote recently of the blurring of the lines between economic sectors and between nations, in terms of a product's origins. Increasingly, we purchase not just a good but a package that includes one or more goods and a set of associated services. Each package is a combination of research, development, design, manufacture, marketing, and future servicing and maintenance, and will probably contain components from several different sectors and nations. Packages may be tailored to meet the specific needs of different market segments. Assigning sectoral or national origin to the packages is difficult.

The same forces are at work in changing what we think of as the agricultural sector. Tom Urban has pointed out the inevitability of agricultural industrialization. He describes phenomena occurring in agricultural production, processing, and marketing that match those Reich describes for other parts of the economy. Agriculture now produces end and intermediate products; food and fiber certainly, but also products with industrial, chemical, medical, and pharmaceutical uses.

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Another need presaged by this glimpse of the future is the need for education, both formal and informal, for everyone involved in the food-agriculture-resource system. To continue to compete effectively and successfully in the world market, participants will collectively need a combination of skills: technical, legal, financial, marketing, political and policy, and human relations. They will need to know who and where their customers are and how to satisfy them, both with the initial product and with follow-up services. No educator can afford to ignore the combinations of forces that will influence U.S. agriculture in the coming decades.

The development of human capital may be the most important factor that will determine the competitiveness of a region or nation in the future. The participants in the food and agriculture system must see and understand their customers and the world broadly. They must be cognizant of the forces driving the changes in demand and in policies and regulations and prepare for the impact of the interactions among these forces.

Open dialogue between the general public and the agricultural community will also be crucial. Public concerns are vitally important in shaping the policy environment. Yet the public generally is largely scientifically illiterate, with only the vaguest understanding of how food and fiber are produced and processed. Fear and ignorance of technologies and low tolerance for involuntary risk and political activism could in combination have a devastating effect on U.S. agriculture's ability to compete at home and in world markets. While citizens may have the right to question products and processes and to seek to protect ecosystems and environmental quality, loud and vociferous arguments based on incomplete information and relying on raw emotional appeal, with little sensitivity to differing views, often achieve only heartburn and animosity among all parties involved. As agricultural professionals, we owe it to the agricultural community at large to make every effort to reach out to and listen to, to educate and to learn from, the general public.

We could start with such topics as perceived and real relative risks, the costs and benefits of various practices and processes, and the difficulties inherent in trade-offs involving health and safety, environmental quality, and the cost and availability of food.

The challenge we face is to find opportunities to turn adversarial relationships into mutually advantageous ones. This paper looks toward the future, but the changes in attitude and actions must occur now. We have much to learn and much to teach, and we must do both if U.S. agriculture is to prosper in the twenty-first century.

For more information
