Drivers of Change

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Introduction

The 2002 Farm Bill will be debated during a time of dramatic changes in the structure of the agri-food system. Changes in the economic structure of production agriculture and in those industries aligned with agriculture throughout the food system (stretching from farm input suppliers to retailers) are being driven by economic and social changes that are often far beyond the control of farmers or other members of the food system.

These drivers of change are altering the political and economic characteristics of the agricultural and food industries, thereby influencing the alternatives available to policy makers and stakeholders in the Farm Bill debate. These characteristics further determine the consequences of each policy alternative (i.e., the potential "impact" of each policy alternative and the probability that a given alternative will accomplish its intended objective). These drivers of change also affect the policy agenda, which selects the issues that will be considered during the Farm Bill debate. This paper will examine some of the drivers of change that are affecting the food and fiber system, and the impact of these drivers of change on the policy agenda and policy alternatives that will be considered during the upcoming Farm Bill debate.

Drivers of Change Reshaping the Agricultural and Food System

At least four major forces of change in the food system deserve examination. Each of these drivers is affecting the structure of the food system and the relationships between food and agribusiness firms and farmers. As a result, the impact of these drivers of change on public policy is an important consideration.

Changing consumer food demands. The first driver of change is the changing demands of American consumers for food products. As U.S. consumers continue to enjoy rising affluence, their demands for food products continue to change. Along with this affluence comes a reduction in personal time, with many having more money than time. As such, consumer demand for convenience is at an all time high, with a larger share of consumers' food expenditures being spent on food prepared away

from home (e.g., restaurants and take-out). In addition, this rise in personal income has contributed to a continuing decrease in the percentage of incomes spent on food.

Consumer demand for an expanding variety of food products is also increasing. This is coupled with an increase in the diversity of the U.S. population, including growth in Asian and Hispanic communities. Thus, the demand for food product variety — particularly ethnic foods — is significantly increasing the variety of food products offered to consumers.

As this demand for convenience and variety continues to increase, the marketing bill for the services of food manufacturers, food service operators, handlers, and retailers continues to increase, and the share of consumers' dollars received by farmers continues to decline. This is mainly due to the fact that dollars are placed where consumers perceive value is added in the agri-food supply chain. Value is added in the processing and preparation end of the chain as consumers want to perform fewer of these tasks on their own.

The forces behind these changes (changes in family size and structure, the rise of ethnic populations in the United States, and the increasing share of dual income couples working outside the home, for example) suggest that major social trends will continue to re-shape the food system. Such changes will cause further shifts in traditional consumption patterns (more fresh products rather than processed products, for example, or more meals eaten away from home). These trends ultimately reach the farm level as changes in the demand for specific products (such as increased demand for a larger variety of fresh fruits and vegetables), or for ingredients that may be more suitable for restaurant preparation rather than home preparation.

Changing technology. At least three areas of technology will continue to re-shape the food system and the relationships between farmers and food and agribusiness firms. Biotechnology, and the debate over the use of biotechnology, continues to influence production practices at the farm level and the relationship between farmers and other players in the food-marketing channel. Biotechnology continues to change input use at the farm level and also, perhaps, farm size and structure (to the extent that it reduces some of the labor demands in agriculture). The impact of biotechnology and the potential markets for segregated GMO and non-GMO products, along with the potential impact of biotechnology in creating farm products, will remain one of the most important issues facing the food system in the coming decade. The changes that will be required to effectively segregate such products, along with consumer acceptance of these products, will almost certainly require a change in the traditional marketing and distribution systems that have dominated agriculture and food industries.

Further, biotechnology offers the potential for creating completely new food markets that may satisfy the demand for greater nutritional value in foods. Traditionally, nutritional enhancements have occurred in manufacturing — such as vitamin-enriched breads and cereals, calcium-enriched orange juice, and the new Fit Milk (which boasts more calcium than regular milk). Biotechnology offers the ability to create "designer foods in the field" that would offer similar nutritional enhancements while reducing less desirable traits (e.g., fat or cholesterol) and/or creating new traits (e.g., longer shelf life). The success of such foods hinges on consumer acceptance, but it is clear that biotechnology geared only at improving agricultural efficiencies, rather than providing tangible consumer benefits, is not likely to receive strong support.

A second area of technological change that will continue to affect the food system will be information technology. Changes in computer, telecommunications, and satellite technology are all likely to continually reduce the costs of collecting, analyzing, and communicating information. As a result, relationships between farmers and agribusiness and food firms will continue to change. Agri-food channel members who have information about consumer buying habits — mainly retailers and food service industries — will play a larger role in dictating production and processing decisions designed to satisfy end consumer demands.

At the other end of the food system, information about production practices will provide value and a competitive advantage to the party that is able to maintain the property rights of such information. There will be segments of the downstream system (e.g., manufacturers, retailers, and consumers) that

will pay more for the verification and assurance of product integrity – such as organic or non-GMO certifications, and product traceability. This technology allows consumers to become more knowledgeable than ever about their food product choices, and it highlights real consumer concerns over food safety. These concerns, even if they are unfounded, still impact consumers' willingness to purchase products. Other drivers of change — such as consumers' demand for food safety — will combine with new information technologies to permit more detailed identification of the source and destination of products from the farm level to the consumers' plate.

Technological change has the potential to expand the opportunity for a consumer direct supply chain through the Internet and other mass mailing/local delivery formats which by-pass the retail end of the food system. While Internet grocery providers are struggling lately, consumer demand for convenience will continue to encourage entrepreneurs to find the right marketing mix for this type of service. When (and if) that occurs, the location where products are produced may be of little consequence, since logistical systems can support extremely short delivery times (one-half to two days) across the world. Replenishment systems (e.g., weekly deliveries of milk, bread, etc.) as well as social retail buying situations (e.g., meal ideas and special events) may create two distinct (possibly separate) food channels.

Changes in international market integration. A third driver of change in the food system is the international integration of markets. An increasing share of U.S. food production is exported. This trend will increase since consumer demands for more variety, along with the existence of more open markets, is also on the rise. In this respect, the U.S. food system is now international in scope at nearly every level of the food marketing channel.

As markets become integrated across national borders, new policy issues arise and old policy issues gain new dimensions that make policy decisions more complex. The impact of a commodity program on either exports or imports, for example, becomes an increasing consideration for policy makers. Exchange rates and macroeconomic policy, which are well beyond the control of agricultural policy makers and perhaps beyond the control of any one national government, will begin to affect the food system. Additionally, the already complex areas of food policy, such as food safety standards or environmental regulatory standards, are further complicated when national governments struggle to adopt comparable regulatory systems.

In some cases, international policy considerations may limit the alternatives available to policy makers. Policy makers could determine, for example, that production controls are less effective in an integrated global market than in a relatively closed market in which a small share of production is traded. In such cases, international integration of markets may limit the ability of national governments to make unilateral policy decisions.

Increasing demand for environmental quality. The final driver of change affecting the food system is the increasing demand for environmental quality among the public at large. To understand the rise of environmental regulation in the United States, and the likely future direction in such regulation, it is important to consider the role of environmental "goods" among the voting public.

If voters view environmental quality as a good that is similar to another good in the economy — such as food, cars, or housing — then, it is very likely that voters will treat environmental goods (air quality, water quality, availability of wilderness, etc.) as they treat these other goods. Economic theory suggests that when individuals' incomes increase, they will increase their demand for most goods. In a wealthy country, such as the United States, some goods — such as food — may experience only a small increase in demand as consumers' incomes increase, while other goods may experience larger increases in demand. If voters view environmental quality as a good, and if their demand for that good increases as their incomes increase, then they are likely to express their demand for environmental goods by supporting an increasing level of environmental regulation across all industries — including agriculture.

This income effect, which studies of environmental quality and income levels across nations have confirmed to exist, would suggest that the food system, including agriculture, will continue to face demands from society to reduce the

environmental impacts of agriculture. Moreover, if voters' demand for food increases slowly (because consumers will not increase their demand for food when they are already well-fed) while their demand for environmental quality increases more rapidly as incomes increase, the public could be relatively unconcerned about the impact of environmental regulation on the total quantity of food produced.

In such a case, the public is likely to continue calling for stronger environmental regulations, even if such regulations affect farmers' ability to maintain the current level of farm output. This could be particularly troublesome for small farmers who may not be able to bear the cost of complying with new regulations. These small farmers may face far better returns on investment from land development than from farming. If environmental regulations increase the costs faced by these farmers, they are more likely leave agriculture or to opt for the "greener pastures" offered by real estate development.

Consequences

These drivers of change are likely to have several consequences for policy makers as they consider the future of farm policy. First, the changing structure of the food system suggests that there will continue to be changes in the relationships between farmers and agribusiness and food firms. The increased use of contracting or vertical integration, for example, could result from a number of sources, including changing consumer demands (such as the intention of food processors and retailers to trace food products back to the farm level to assure food safety) or the rise in information technology (which makes tracking of products less costly). By fragmenting food and farm markets, such changes in marketing arrangements may make it difficult or impossible to use traditional policy mechanisms. If an increasing share of grain is sold through contract arrangements, for example, the loss of transparency in market prices makes it difficult for policy makers to use traditional policy mechanisms (such as target prices or loan rates) that traditionally have been tied to open market prices.

A second consequence of these drivers of change is that the integration of U.S. farm and food markets with international markets may limit U.S. policy makers' ability to make unilateral decisions (for example, U.S. farm program options may be limited by international policy commitments negotiated under NAFTA or the WTO).

A third consequence is that these drivers of change will almost certainly increase the diversity of the farm sector, with the U.S. "farm" sector ranging from large industrial farms to small farms that are little more than rural residences. Such diversity will make a one-size-fits-all approach increasingly outdated and ill suited to address the diversity of policy issues that will be expressed to policy makers.

A final consequence is that the rising demand for environmental quality among voters is unlikely to be reversed in the near future. As a result, environmental policy has probably established a permanent place on the farm policy agenda. The need to design policies that satisfy this rising demand is probably an essential element of any farm bill in 2002 and beyond.