

FARMING IN THE 21ST CENTURY

by

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Preface

The U.S. agricultural industry is in the midst of major structural change — changes in product characteristics, in worldwide production and consumption, in technology, in size of operation, in geographic location. And the pace of change seems to be increasing. Production is changing from an industry dominated by family-based, small-scale, relatively independent firms to one of larger firms that are more tightly aligned across the production and distribution chain. And the input supply and product processing sectors are becoming more consolidated, more concentrated, more integrated.

Agriculture in the 21st century is likely to be characterized by: 1) adoption of manufacturing processes in production as well as processing, 2) a systems or food supply chain approach to production and distribution, 3) negotiated coordination replacing market coordination of the system, 4) a more important role for information, knowledge and other soft assets (in contrast to hard assets of machinery, equipment, facilities) in reducing cost and increasing responsiveness, and 5) increasing consolidation at all levels raising issues of market power and control.

These profound changes in the agricultural industry present new challenges and new opportunities that require new ideas and concepts to analyze and implement. They require new learning and thinking. Some of those new ideas and concepts are presented here, not as empirically verified truths, but as “thoughts” to stimulate different and better thinking. They have been developed based on observations, analysis and discussions with numerous managers and colleagues in agribusinesses in North America and Europe. This series focuses on Farming in the 21st Century; companion series are also available on Financing and Supplying Inputs to the 21st Century Producer (Staff Paper 99-11), and Value Chains in the Food Production and Distribution Industries (Staff Paper 99-10).

Our purpose in sharing these “thoughts” is to invite discussion, dialogue, disagreement — in general to encourage others to develop better “thoughts”.

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Farm Policy in an Industrialized Agriculture

The significant changes now occurring in production agriculture that are transforming it from the Jeffersonian model of small and modest size family farms to an industry characterized by larger production units that display the characteristics of the industrial model and biological manufacturing has profound implications for the debate concerning the appropriate agricultural policy of the future. This change in the characteristics of the production industry combined with increasing global production and competition, concerns about environmental and other externalities related to production agriculture, and growing interest on the part of consumers for safe as well as healthy foods has the potential to profoundly redirect the focus of agricultural policy debates. What might be some of the key issues in this new agricultural policy debate and discussion? And equally important, will the goals and objectives of agricultural policy be different in the future than they have been in the past?

Let's first look at the potential changes in the goals and objectives of agricultural policy in the future compared to the past. As exemplified and stated by every Farm Bill since the 1930s, the prime goals of agricultural policy have been to enhance or reduce the risk of low incomes for farmers; to keep agriculture from building up unmanageable surpluses; to protect land and other resources from degradation; and to provide U.S. consumers with adequate and nutritious food at reasonable prices and essentially eliminate the prospects of a U.S. food shortage. Generally, these objectives have been accomplished by a variety of farm programs that have buffered production agriculture from market forces, and in essence attempted to minimize the exit or dislocation of resources — both human and capital — from the sector.

In 1996 a profound change in stated public policy concerning agriculture was implemented with passage of the Freedom To Farm legislation. This legislation was predicated on the argument that farmers should not be buffered from market forces, particularly with respect to production decisions and the market clearing prices that would occur as the result of those production decisions. Some have argued that the 1996 Farm Bill initiated a new era in farm policy with respect to buffering the industry from market forces, but did not complement that policy with one that assisted in the adjustment process for those human and other resources that might possibly not receive reasonable compensation from the market. Thus, the transition is incomplete in that the new farm policy is allowing the market to impact the industry, but is not facilitating the resource adjustments that may occur when the market suggests that some of these resources are in excess.

As one views the future from the perspective of a globally competitive, industrialized agriculture, additional goals of public policy with respect to the industry may become relatively more important than those that have been the focus of past policy. These goals might include:

1. Facilitating producers ability to manage the increasing risk and volatility that they will face in a more market-driven industry,
2. Maintaining or protecting the productive capacity of the land, capital and human resource base during periods of short-term surpluses for longer-term world-wide food security,

3. Facilitate the transition out of agriculture of permanently excessive human resources through jobs training and other transition assistance,
4. Maintain market access for producers in both input and product markets,
5. Protect farmers from potential exploitation by processors and input suppliers,
6. Protect farm employees from exploitation by farm entrepreneurs,
7. Maintain adequate food supplies to minimize the probability of a food shortage or significant increases in food prices,
8. Protect consumers from any form of food contamination in the production/distribution channel,
9. Reduce environmental, odor and other externality conflicts between farmers and other members of society,
10. Enhance agricultural productivity, creativity and innovation,
11. Assist farmers and residents of rural communities in adapting to change and adjusting to new social and economic environments.

So if these are some of the potential goals or objectives of farm policy in the future, what might be some of the agricultural policy and program options and alternatives? Our purpose here is not to specifically identify the details of a policy option or the institutional structure to implement a particular farm program, but to identify four critical issues that farm policy of the future must resolve to accomplish the broader set of goals previously identified. These issues or alternatives are generally not part of the current policy debate and are presented not because they are fully developed and analyzed, but to stimulate new ideas and new thinking in policy discussions that have historically been dominated by variations of farm price and income support systems and resource conservation and protection programs.

1. Develop and fund programs for transition/adjustment assistance — As has been indicated earlier, markets sometimes inflict pain in the form of low compensation for resources. One role of public policy is to mitigate that pain through temporary assistance. But if the resources are in permanent surplus, public programs to facilitate transition of those resources to other uses are appropriate. For example, a program to assist farmers who may find permanently lower prices and incomes because of international competition or other forces might be provided jobs training and relocation assistance to transition from farming to some other occupation. This transition assistance approach may be the logical follow-on program to legislation that provides less buffering for farmers from market forces.
2. Develop an institutional structure around vertical market systems and supply chains to reduce the potential of market power and exploitation (similar to the institutional structure around markets) — The development of tighter vertical alliances in agriculture and the formation of supply chains has raised numerous questions about the issues of market power and the potential for exploitation of those with limited size

or market power, particularly producers. One public policy response would be to prohibit the formation of these vertical alliances. Such a policy might not only be difficult to implement, it might eliminate opportunities to develop a more efficient and responsive food production and distribution system. An alternative policy approach is to develop an institutional structure surrounding vertical supply chains (not unlike the institutional structure surrounding markets) that responds to the public policy concerns. Such a structure might include open access to information on prices and terms of trade of all transactions whether they be within a vertically aligned chain or not. It might include redefining anti-trust legislation to acknowledge concerns about market power related to position in a vertical chain as well as market concentration and size. It might include provisions to minimize opportunistic behavior and exploitation by mandating compensation if, for example, contractual obligations in a vertical chain are not fulfilled. Another policy response would be to alter the power potential in negotiation between producers and others in vertical chains by increasing producer bargaining rights. And new arrangements and institutional structures for more equitable sharing of risk and rewards in vertical alliances as an alternative to fixed price contracts might be mandated or encouraged including various forms of profit and loss sharing arrangements. The fundamental principal here is to develop a new institutional structure to surround vertical systems of economic activity to eliminate the potential of power or exploitation so as to accomplish the same goal as the current institutional structure is to accomplish in a market environment.

3. Redefine intellectual property rights — The recent advances in biotechnology and information technology suggest that information and intellectual property will be critical resources to enhance market position and generate economic rewards in agriculture in the future. In the past, much of the information and many of the new ideas for production agriculture were generated by public sector institutions — the Land Grant University System and the US Department of Agriculture. But increasingly, private sector firms are generating new innovations and information and capturing value from that activity by charging farmers technology fees, and generally limiting access to those who have the ability and willingness to pay for information and technology. Our current set of patent and copyright law was developed in an era of open markets and a major role for the public sector in providing new R&D and information. These rules and regulations concerning intellectual property rights and information dissemination should be revisited given that the market is now being characterized by vertical alliances and linkages, global competition, and a significant role of the private sector in the development of new technology and the dissemination of information.
4. Increased support for public sector R&D — As noted earlier the private sector is playing an increasing role in the technology and information markets, and many are concerned about the distributional consequences of restricted or closed access to the latest and best information and technology. A critical public policy issue is the appropriate level of funding for public R&D, technology transfer and information systems and the adequacy of funding of those activities. It is unlikely that current funding sources will be adequate to expand support for public, open access R&D and information programs. New and creative ways of funding such programs are a critical

public policy concern. Creative structures and public sector — private sector joint ventures should be part of this discussion, including the potential for taxing the profits from private sector intellectual property and directly allocating those revenues to public sector, open access research and information programs focused on those who may not have access to the latest private sector technology and information.

The four areas of public policy identified here have not been the focal point of agricultural policy debates and discussion in the past. But they may be equally if not more important than traditional farm price and income support and resource conservation programs in shaping the efficiency and opportunity for the agricultural production and distribution system in an increasingly globally competitive market in the future. The future policy debates in agriculture must be much broader in focus and concept to respond to the critical public policy issues that will face the food production and distribution system in the future.