FARMING IN THE 21ST CENTURY

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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”.

Keywords: qualified supplier, biological manufacturing, strategic risk, process control, economies of size, franchise grower

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Strategic Risk in Agriculture*

Dramatic changes are occurring in the agricultural sector — changes which will result in agricultural industries having many of the characteristics of manufacturing industries. These changes are resulting in new and different risks for the industry as well.

The risks faced by agriculture have often been classified into such categories as production, marketing, financial, legal and human risks. An alternative and possibly more useful taxonomy is to categorize risk as tactical or operational risk and strategic risk. As agriculture becomes more industrialized, strategic risks are likely to become increasingly more important and, as we will note, are typically more difficult to manage.

The focus of strategic risk is the sensitivity of the strategic direction and the ultimate value of a company to uncertainties in the business climate. These uncertainties include: (a) political, government policy, macroeconomic, social, and natural contingencies; and (b) industry dynamics involving input markets, product markets, and competitive and technological uncertainties. Tactical or operational risk is easier to manage than strategic risk, in part because information is generally available to measure these risks, and because of the availability of accepted tools and techniques to transfer risk to others, such as insurance and futures markets.

Most strategic risks cannot be managed or transferred through conventional futures or insurance instruments or markets. Strategic risk is multidimensional, so managers cannot assume the simple one-to-one mapping between exposures and hedging or insurance instruments. Creative strategies must be developed to manage strategic risk exposure; approaches include flexibility, adaptability, and diversification.

One of the strategic risks farmers as well as agribusinesses are facing because of the industrialization of agriculture is contractual or relationship risk. The expanding use of contractual agreements and other forms of negotiation-based linkages between the various stages within the agricultural production and distribution system, combined with the decline in impersonal, market-based transactions, results in price risk being replaced by relationship or contractual risk for many businesses. A grower may have a contract that guarantees a price for the crop, but what happens if the processor goes bankrupt? What happens to the contract next year if the processor finds other suppliers in other areas who can satisfy the requirements at a lower price? This risk is not unlike that of losing a landlord or a lender, but losing access to the product market has typically not been a significant risk in commodity-based agriculture in the past.

Another strategic risk that seems to be increasing in recent years is that of compliance or regulatory risk. Farm and agribusiness firms are facing increasing regulation in all aspects of their business transactions. Added to the traditional areas of regulation concerned with transportation, taxation, and labor use are two rapidly growing regulatory areas: food safety and the environment.

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*Adapted from Boehlje, Michael and David A. Lins. "Risks and Risk Management in an Industrialized Agriculture", *Agricultural Finance Review*, 58:1-16, 1998.

When viewed from the broader perspective of both strategic and tactical or operational risks, the total risk that farm and agribusiness firms face is much more complex and more pervasive than is often perceived. In fact, as the agricultural sector increasingly exhibits the characteristics of an industrial model, the types of risks it will face will also change. A taxonomy of the broader dimensions of risk that farm and agribusiness firms will be facing in the future is presented in Table 1. From both an analytical and managerial perspective, a major challenge in the future will be to quantify both the frequency or probability of occurrence and the magnitude of exposure from each of these potential sources of risk.

Table 1. The Universe of Risks: A Taxonomy of Risk Facing Farm and Agribusiness Firms in the Future

Categories of Risk	Illustrative Sources of Risk
Financing and financial structure	Debt servicing capacity, leverage, debt structure, nonequity financing, liquidity, solvency, profitability
Market prices and terms of trade	Product price volatility, input price volatility, cost structure, contract terms, market outlets and access
Business partners and partnerships	Interdependency, confidentiality, cultural conflict, contractual risks
Competitors and competition	Market share, pricing wars, industrial espionage, antitrust allegations
Customers and customer relations	Product liability, credit risk, poor market timing, inadequate customer support
Distribution systems and channels	Transportation, service availability, cost, dependence on distributors
People and human resources	Employees, independent contractors, training, staffing adequacy
Political factors	Civil unrest, war, terrorism, enforcement of intellectual property rights, change in leadership that revises economic policies
Regulatory and legislative factors	Export licensing, jurisdiction, reporting and compliance, environmental
Reputation and image	Corporate image, brands, reputations of key employees
Strategic position and flexibility	Mergers and acquisitions, joint ventures and alliances, resource allocation and planning, organizational agility
Technological factors	Complexity, obsolescence, the year-2000 problem, workforce skill-sets
Financial markets and instruments	Foreign exchange, portfolio, cash, interest rate
Operations and business practices	Facilities, contractual risks, natural hazards, internal processes and controls

Source: Adapted from Teach, "Microsoft's Universe of Risk," *CFO*, March 1997.