

The Future of American Agriculture and the Land Grant University: Toward a Sustainable, Healthful, and Entrepreneurial Food System

A White Paper of the Future of American Agriculture Symposium of Cornell University

Sponsored by the Polson Institute for Global Development
and the College of Agriculture and Life Sciences

Executive Summary (April, 2003)

The major trends outlined by Steven Blank have not been refuted and have been generally confirmed by all presenters; there was no serious challenge. The shrinking net profits and return on investment make many agricultural enterprises unattractive or impossible for existing and new farmers. Globalization of trade and the dominance of transnational food suppliers are controlling the competitive environment and setting the conditions for trade.

Economic conditions in New York will drive continued reduction of the agriculture sector.

There will not be an absolute end of agriculture in America or New York. The survivors will be high value, place-branded, and niche marketers. Land that has a good natural resource base (weather, water) and is not easily put to higher value use may remain in agriculture.

We are heading toward a bimodal structure with a few very large producers and a larger number of small, local niche (niche includes local, community-based farming) marketers. Medium sized farms will become fewer and will be a transitional group of small farms becoming large.

Public subsidies are important to encouraging agriculture to persist and will be increasingly important as net profit margins continue to be squeezed. Public subsidies should benefit public rather than private interests. Recent European proposals need more consideration here.

Large farms either will be competing on price or producing for subsidized markets. Cost reducing technologies will continue to be important. Large farms increasingly will be integrated into transnational food supply systems through contracts, strategic partnerships, etc. Large farms will not require agricultural extension as we have provided in the past, but research will continue to be very important.

Consumer preferences will continue to be very important to shaping our food supply. But we will be dealing with transnational corporations seeking to shape our preferences and our options.

Niche and local markets will not account for major shares of the food supply, but there will continue to be opportunities in this area. High value and value-added products along with place-based products will be the main opportunities. Agricultural extension will have a valuable role in encouraging community-based agriculture.

“Food citizenship” leading to improved knowledge about food systems and the food we eat needs to play a more prominent role in the college’s educational program.

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Introduction

Steven Blank's controversial 1998 book, *The End of Agriculture in the American Portfolio* (Quorum Books) has inspired numerous discussions around the country about the protracted crisis in American farming and the impact of the globalization of the food system on national food security. Because New York has experienced a reduction in agriculture as an economic and social element much along the lines described by Blank, we felt it was imperative to explore more fully the issues, forces, and trends that he describes. Consequently, the Polson Institute for Global Development convened the Future of American Agriculture Symposium with support from the College of Agriculture and Life Sciences. Monthly presentations by public intellectuals on food and agriculture were followed by interdisciplinary discussions among faculty members from around the college. The year-long dialogue about major trends in the national and global food system focused on ways that Cornell University and the College of Agriculture and Life Sciences may anticipate, evaluate, and respond to these trends so as to shape more positive outcomes for New York agriculture and national and global food security.

This document is one of the products of the symposium. It integrates and summarizes the group's multidisciplinary perspective on the rapid changes in the food system and ensuing shifts in intellectual and policy paradigms. The specific purpose of this document is to communicate the symposium's findings to other members of the land-grant community. However, its broader purpose is to stimulate a sustained, inclusive, and creative discussion concerning the renewal of the land-grant mission in an era of crisis and transformation.

What is happening in New York? (Why Should We Be Concerned?)

In 1910, the gross value of all agricultural commodities produced in New York put the state among the top four states in the nation. Today, New York has fallen to 25th in gross agricultural sales. Four long-term trends have shaped New York's food and agricultural system during this century. First, farm numbers have steadily declined from 215,597 in 1910 to 32,306 in 1997. Second, the amount of farmland decreased by 66 percent from over 22 million of acres in 1910 to only 7.5 million acres in 1997. Average farm size increased from 102 acres to over 230 acres during this period. Third, gross sales of farm products produced in New York lagged behind the country as a whole. And, fourth, with the exception of some dairy products, including fluid milk, the linkages between local production and local consumption were broken for virtually all commodities. Not only are large amounts of fresh fruits and vegetables, meat, and processed dairy products being brought into the state from the leading agricultural states and other countries, but also a once vital local food-processing sector has all but vanished from the state.

Today, most of the state's agricultural production is concentrated on a small number of very large farms. Most New York farms are highly specialized, many producing only one or two commodities for the market. And, the most highly industrialized farms are clustered together in 'agricultural pockets' throughout the state. Large-scale producers in the state are accounting for

an ever-increasing share of production. Consider that in 1950 the 500 farms with the highest gross sales in the state accounted for about four percent of total agricultural sales. By 1997, the largest 500 farms accounted for over 30 percent of the state's agricultural sales.

Throughout this century, and especially after World War II, New York farms that were once characterized by diverse agricultural activities were driven to exploit their 'comparative advantage' as they became integrated into a national and global system of food production. Like their counterparts in the Great Lake States, New York farmers have established and maintained a niche in dairy production. At the same time, producers in the Plains States have been able to raise hogs cheaper than farmers elsewhere, while farmers in California and several other sunbelt states have used subsidized water and a favorable growing season to become the leading producers of fresh fruits and vegetables. The relationships among large-scale, regionally concentrated agricultural producers, national and multinational food processors and distributors, and the structure of local food systems should not be underestimated. For example, as the agricultural landscape of California changed in the early part of this century to accommodate large-scale, corporately controlled fruit and vegetable farms, the number of fruit and vegetable farms in New York declined. At the same time New York's food system was transformed from a more locally interdependent system of production and consumption to a more globally oriented system where production is uncoupled from consumption. These changes have impacts that go far beyond the agricultural sector. The character and structure of communities have been dramatically altered by these trends.

The Future of American Agriculture: Divergent Entrepreneurial Trends

Steven Blank, an agricultural economist from UC-Davis, argues that agriculture has offered minimal returns on investment (1.5%) for the last few decades and, as a result, its concentration and decline in the U.S. is likely to continue. The decline is both relative to the overall economy and absolute with respect to indicators unique to agriculture (farm population, land in use, return on equity). Farmers are “price takers” in that they have limited ability to influence the price on their commodity. Prices are set globally while production costs are local leading to a squeeze in net profits.

Because of the squeeze between rising production costs in the U.S. and stagnant or declining prices on the global market, farmers must choose between “price strategies” or “cost strategies” to stay profitable. The major price strategies have been value added products, vertical integration of product, and increasing federal subsidies. In Iowa, 76% of cash farm income comes from direct federal payments to farmers. The major cost reducing strategy has been improved technology, driven by agricultural research, and coupled with increased scale. There is a direct link between technology and scale. This strategy increases competition among farms and leads to larger farms that have to deal with large purchasers and suppliers. Larger forms tend to produce for national and international markets. Lappé pointed out that productivity-oriented agriculture (“productivist”) also is constrained by a narrowing of choices because of the concentration of technology suppliers. In a related concern, Nettie Wiebe described how the increasing prevalence of biotech crops is reducing the possibility of growing alternative genotypes of those crops. Lappé also drew attention to the ways our food system is being subject to “control masking” and “information deprivation.” The voiced goals of free markets mask the increasing control of trade

by transnational corporations. The goal of high productivity is masking the profound personal and social costs. Weibe described how programs to increase exports actually reduce farm income.

Despite the productivity and efficiency of American agriculture, the U.S. is no longer a low-cost producer. Agricultural technologies are transnational and their adoption in countries where land and labor costs are low only enhances their competitive advantage. Food corporations increasingly rely on cheaper producers elsewhere in the world, and agriculture is becoming a smaller and smaller part of the U.S. economy. The increasing role of global markets also explains the paradox of food scarcity in regions producing for export. Beyond the global competition with other agricultural exporting countries, there exists competition within the U.S. with other industries where economic returns on investment are considerably higher. This has happened in a major way in New York and the Northeast where the labor base and cost of living demand higher return on investment activities. The end point for the U.S., Blank argues, is that “At some point agriculture must be dropped entirely from the portfolio because it cannot compete with the profitability of newer industries.”

The basic trends he describes are well known and have been operating for some time (ex. Olson and Lyson 1999). No speaker and none of the discussants refuted the underlying dynamics described by Blank. None contested the conclusion that a major restructuring of American agriculture is occurring. All felt that while Land Grant Universities are major drivers of these changes, they have been slow to respond to the changes, i.e., we may not be “ahead of the curve.”

While his book conveys a highly certain and unequivocal outcome, discussions during his visit suggested some limited “opportunities.” The first is that high value, consumer oriented products are likely to remain in domestic production longer than commodity products. Wine was frequently used as an example of the type of product that could last longer. However, the other major attribute that could sustain a domestic agriculture is products that have strong place-based production values. Thus New York wines will survive only to the extent that a reputation for region-based quality is developed and maintained. Other locally marketed products are an extension of this concept, but a reputation for quality and value needs attention to counter the usual price concern of American consumers. Connection to tourism also will become an increasingly important marketing attribute. While these considerations suggest some hope for some sectors of production agriculture in New York, they will not halt a continuing decline in farms and farmers.

Blank’s thesis reflects a new twist on a long-running analysis of increasing concentration and vertical coordination in the food system in which food corporations rely on a smaller and smaller number of producers. In his report to the National Farmers Union (1999), University of Missouri Rural Sociologist William Heffernan identifies “emerging clusters of clusters of firms that control the food system from gene to supermarket shelf (p. 3).” Open commodity markets are increasingly being replaced by production contracts that are coordinated by these firm clusters through joint ventures and other alliances. Under this new system, firms can source products globally, putting American farmers in direct global competition with low-cost producers.

Craig Yunker of CY Farms serves as an example of an entrepreneur who has created a place for his firm in the new food system through careful attention to the “exacting requirements” of processors and packers. For Yunker, farms can no longer be understood as a particular plot of land. Instead, a farm is a “collection of economic activities” that add value in the food chain. According to Yunker, the farm sector must embrace a “manufacturing mentality,” and farms must manage relationships and resources accordingly. Like many farms of its size, CY Farms increasingly depends on leased land for production and constantly shifts its mix of products to reflect comparative advantage. CY Farms is an example of a new entrepreneurial kind of enterprise that has escaped some of the problems that continue to plague mid-sized commodity producers in seeking markets for their products.

Some thinkers have challenged Blank’s pessimistic conclusion, instead emphasizing a different kind of entrepreneurial departure from the old family farm model. In a series of paper presentations, John Ikerd (2001) heralds the emergence of the “New American Farm” and predicts that a new generation of family farmers will replace the old industrial farming model with one based on principles of sustainability, diversity of crops and markets, quality over quantity, and community in the food system. Mark Ritchie, Director of the Institute for Agriculture and Trade Policy (IATP) in Minneapolis, described a series of alternative farming and rural initiatives across Minnesota that testify to the resilience and creativity of people responding to community needs in the wake of the farm crisis. Similarly, Frances Moore Lappé, together with her daughter Anna Lappé, authored a new edition of *Diet for a Small Planet* emphasizing the international groundswell of projects building an alternative food system. The projects described by the Lappés entail paradigmatic shifts in understanding the purpose of the food system, the role of science, and means of solving problems. It is difficult to see these values-based agricultural models substantially changing the predominant economic forces shaping agriculture currently; nevertheless, they serve an important purpose. They provide for those farmers and communities marginalized by industrial farming, and offer a glimpse of new models of localized food systems.

Nettie Wiebe, past president of the National Farmers Union of Canada and active in the international farmers movement *Via Campesina*, further complicated the portrait of the contemporary global food system by arguing that issues of trade are inseparable from agriculture. Farmers around the world experience the effects, and are thus confronted with both the changing techniques of production and the economics of international agricultural markets. A discussion about contemporary agriculture, Wiebe asserts, must include a discussion of the global agreements that affect producers. In the last few decades, the increased global food imports and exports resulting from trade liberalization have compromised the sustainability of national food production sectors. After the signing of the Canada–US Free Trade Agreement Canadian agro-food exports increased considerably, but net farm income in Canada decreased by over 1 billion dollars between 1988-2002. Farmers in the U.S. and Mexico are experiencing similar disappointments under NAFTA. She questions the assumption that consumers benefit from lower trade barriers, pointing out that trade liberalization has not lowered the costs of food consumption.

As the middle family-sized farm sector continues to disappear, we are seeing the emergence of a dual agriculture system, with two types of entrepreneurial responses to the present crisis.

Enterprises like CY Farms are developing closer relationships with other corporations and more distant relationships with particular terrains and communities. Other kinds of food enterprises, such as Community Supported Agriculture Associations and Fair Trade regimes are distancing themselves from the corporate-controlled food sector and forging stronger place-based and community-based ties. Both kinds of entrepreneurs are seeking new relationships with their customers, recognizing that shoppers at the end of the food chain are increasingly making their presence felt.

From Food Consumers to Food Citizens: The Sleeping Giants of the Food System

The substantial public investment made in industrializing American agriculture was justified in large part by pointing to the broad benefit to consumers of having a cheaper food supply. Consumers would directly benefit from a lower food bill and indirectly benefit from a stronger American economy powered by cheap food. However, some of the more dramatic negative outcomes of the industrialized food system, including food safety scares, pesticide residues on food, and the unfolding epidemic of diseases of over consumption are making some question the wisdom of the cheap food policy. Lappé concludes that “the cost of cheap is very, very high.”

Jules Pretty, from the Center for Environment and Society at the University of Essex, UK, points out that cheap food is a myth. While food appears relatively cheap on the grocery store shelves, we also pay for our food at least two other times: once in subsidizing farmers’ production and again for the amelioration of pollution, erosion, ill health and other problems caused by industrialized agriculture. Some costs, like the cost of removing pesticides and nitrates from the water supply, are paid directly by people. Other costs, like those entailed in the decline of rural communities, are more difficult to measure. Increasingly, European states are seeking to incorporate the multifunctionality of agriculture into policy, and use public subsidies to encourage the positive public functions of agriculture (such as environmental stewardship, open space, cultural diversity, and rural livelihoods) and discourage negative ones (pollution, soil erosion, loss of biodiversity, and farm crises). While public subsidies of agriculture continue to play an important role in this model, they are directed at public rather than private benefits.

A recent report to the UK’s Policy Commission of the Future of Farming and Food argues that the purpose of the food system is to promote “ecological public health” and “deliver affordable, health-enhancing, and accessible diets for all” (pp. 3-4). The report advises that the UK adopt a wholly updated agriculture and food policy that integrates nutrition, food safety, and the guarantee of a sustainable food supply in a way that eliminates health inequalities among wealthy and poor citizens. Among specific measures discussed in the report are (1) shortening food supply chains to cut down greenhouse gas emissions and promote food safety, (2) geo-spatial planning of retail outlets to enable more walking and bicycle use, (3) restricting food advertising for children, and (4) encouraging the production of fruits and vegetables to enable and encourage a healthier local diet.

While, the UK report implies that good health through food is a right of citizenship, the citizens of Belo Horizonte, Brazil have explicitly asserted food as a right of all members of the community. As the Lappés describe in *Hope’s Edge: New Diet for a Small Planet*, Belo Horizonte has instituted feeding programs, local agriculture programs and other measures to

ensure access by all to fresh and nutritious food. In doing so, they shifted food for all from a charity model to a state responsibility. The idea of food citizenship captures a shift in which “consumers” move beyond shopping to a broader engagement with the food system in its many dimensions.

The most recent U.S farm bill shows that as a country we have not yet embraced these alternative approaches to the food system. However, as power in the food chain increasingly shifts towards consumers, and as consumers increasingly demand that the food system respond to their values, it is only a matter of time until the U.S. confronts the same central questions that other countries are already facing. Similarly, growing concerns with food security, inspired by recent disease outbreaks and the events of September 11, demand that policy-oriented research increase its attention to protecting local and national food supplies. Cornell, as an institutional leader in both life sciences and socio-economic development, is uniquely positioned to contribute to this complex process and anticipate the evolution of a consumer-driven food system.

Toward an Entrepreneurial, Sustainable, and Multifunctional Food System: The Role of Cornell and other Land Grant Universities

The symposium presentations and discussions over the course of the year revealed how producers, consumers, and communities alike are increasingly confronted with complex questions associated with a rapidly changing food system. To serve these constituencies, Cornell must similarly move beyond an array of highly specialized fields to a dynamic, integrated, and communicable understanding of food and agricultural systems. As a leading research institution in both economic development and the life sciences, Cornell is uniquely placed to contribute new knowledge born of diverse disciplinary strengths, thus providing an ideal terrain from which to integrate varied intellectual perspectives on the questions raised by contemporary trends in agriculture and food. Through research, education, and extension, Cornell and other land-grant universities should provide public and private decision-makers with the information and tools they need to support an engaged food citizenry, a sound public food policy, and a vibrant food landscape.

The growing entrepreneurialism among both small-scale and large-scale growers points to a number of promising strategies for promoting an efficient and safe food system. These often revolve around creating new linkages between food production and consumption that account for some of the hidden costs of the food system. These new processes of engagement can lead to a variety of benefits, including:

- greater efficiency in both transport of agricultural and food products;
- better circulation of information concerning food safety;
- wider participation of local stakeholders in promoting a safe and sustainable food supply—for example local watershed management to ensure environmentally safe livestock operations;
- increased consumer knowledge about the geographic scale of the food system and the variety of inputs and practices used to produce food.

Cornell University is well placed to build on emerging interconnections between the consumption and production to promote public perceptions and policy that recognize agriculture's multifunctionality.

One example of multifunctional agriculture is seen in how the agricultural landscape encourages tourism and healthy lifestyles. Multifunctional valuation of agriculture may thus lead to a market for and the development of niche products, thereby promoting a dynamic interaction between farm and non-farm industries. The wineries of the Finger Lakes region are a prominent example of such a model. Similarly, the 'New York City Watershed' labeling project aims at increasing consumer knowledge of the added value in purchasing products from watershed-friendly farms upstream. Cornell is uniquely placed to play a vital role in catalyzing such projects. For example:

- Cornell extension can work closely with local producers to identify niche markets that support a number of different operations;
- Cornell could assist in marketing and processing of upstate apple production by facilitating linkages to possible buyers;
- Cornell may promote public education concerning the food and agriculture system with middle and high schools in the state. Here the outreach activities and curriculum development coordinated by Cornell's Area Studies programs at the Einaudi Center for International Studies presents a template.

In conjunction, the CALS Communication Department current project concerning public knowledge on agricultural biotechnology issues affords significant baseline research for a public education campaign. CALS extension, and departmental research groups, could develop curricular materials on the local food system for use in County high schools. Versions of these modules would also be employed in schools closer to New York City. Preserving the focus on the local agricultural sector, programs could emphasize the relationship between NYS food production and consumption, safe water, and a safe food supply—an issue of increasing salience in the post 9-11 environment. Such modules would have students interrogate the sources of their food, and identify both consumer and producer strategies for promoting a more food secure New York State.

These are just a few example of the areas in which the College of Agriculture and Life Sciences could take a proactive role in local agro-food issues. As various speakers in the symposium highlighted, producer and consumer concerns only appear disconnected if the food system is viewed in isolated parts. An integrative, and inter-disciplinary, understanding of the agricultural market indicates why food production and consumption, and thus the local agricultural sector, should be approached in an incorporated fashion. In such a way, CALS extension may develop an integrated approach to consumer education and producer support and thereby facilitate the relations and network key to community and institutional success.

Food Citizenship

All who participated in this symposium gained a new appreciation for the complexity, conflicts, and challenges that exist in our evolving food system. Because food is so central to our well being and because personal and public decisions about food can have profound and far-reaching

consequences, our strongest recommendation is that the College of Agriculture and Life Sciences should play a much stronger campus and national role in food citizenship education.

Changing demographics and interests of the Cornell student population have led to fewer students understanding how the food they eat gets to them. This is true even for students in the College of Agriculture and Life Sciences. We propose that there should exist a course that provides undergraduate students with an understanding of the complex interactions that are driving the food choices available to them, the dynamic relationships that will produce future food systems, and the choices that they can make as individuals and as citizens that will shape their future food supply. Several current courses offer insights into components of the food system, but no current course provides the breadth of information necessary for informed citizens of the future.

A multi-department collaboration has already begun to develop the course concept and details with an offering underway in Spring semester, 2003.

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