Crossroads Resource Center

7415 Humboldt Ave. S. / Minneapolis, Minnesota 55423 / 612.869.8664
kmeter@crcworks.org www.crcworks.org

Tools for Community Self-determination

Ohio's Food Systems – Farms At The Heart Of It All

By Ken Meter
Crossroads Resource Center

March 30, 2011

Commissioned by the University of Toledo Urban Affairs Center
with funds from the Ohio Department of Agriculture

Table of Contents

Acknowledgements

Special thanks to Paula Ross at the University of Toledo for her careful stewardship of the project, and for connecting me with so many Ohioans who were happy to share their experiences, even while busy making a difference. Neil Reid, Chet Bowling, Casey Hoy, Brian Williams, Noreen Warnock, Morgan Taggart, Carolyn Carr, Theresa Heiland, Joan Stockinger, and Marilyn Grantham also offered generous assistance.

The author

Ken Meter, one of the most experienced food system analysts in the U.S., is president of Crossroads Resource Center in Minneapolis. He taught the economic history of U.S. agriculture at the University of Minnesota, and microeconomics at the Harvard Kennedy School mid-career graduate program. Meter has produced local economic studies of 59 regions in 26 states, and provided strategic consultation for a wide variety of local partners across the U.S. He has consulted to USDA, EPA, and the American Planning Association.

Executive Summary

Ohio's Food Systems — Farms at the Heart of it All

KEY FINDINGS:

1. **Clusters of community-based food businesses are forming across Ohio. These clusters create jobs, but do even more; they create collaborative groups of new business owners.**

2. **Food is a major industry in Ohio, yet the industry has suffered some erosion in recent years, despite Ohio's rising personal income and increased food consumption.**

3. **The most sustained rapid growth in farm sales involves direct food sales from farmers to consumers.**

4. **The key "lever" driving change in the Ohio food system is commerce based on relationships of mutual trust, through clusters of firms that grow in concert with each other to create both resilience and stability for Ohio.**

5. **Emergent business networks are often led by people who hold significant experience in low-income communities or developing nations.**

6. **The distinction between for-profit and nonprofit enterprise is becoming less rigid; both types of firms seek subsidies.**

7. **Public bodies hold a clear responsibility to support the growth of local-foods business clusters by constructing supportive infrastructure.**

8. **Ohio agriculture (and related public policy) has long been focused on distant markets, rather than state consumers, to the detriment of the state economy.**

9. **$30 billion flows away from Ohio each year due to the structure of the farm and food economy; recapturing these dollars would create significant economic opportunities.**

10. **The prevailing food system is deeply dependent upon fossil fuels, which may become prohibitively expensive, creating exceptional vulnerability for the Ohio food supply.**

Executive Summary

Clusters of community-based food businesses are forming across Ohio. Complementing each other as they grow, they create mutually supportive economic opportunities, build financial resilience, and strengthen the state's social fabric.

These clusters create jobs but accomplish even more — they build new business ownership opportunities. Emerging business owners who invest in keeping the state strong, and who form supportive business and social networks, will help the state economy cohere, while flexibly adapting for an uncertain future.

Interviews completed for this report have tracked the emergence of hundreds of new businesses, tens of millions of Ohio food sales, and thousands of jobs. It only makes sense to invest in strengthening this emergent sector.

Business clusters have been effective for Ohio

Indeed, Ohio firms have made effective clusters before.[1] Northwest Ohio has long featured a cluster of firms that revolved around the region's ideal conditions for tomato production, combined with the former presence of cheap natural gas, which supported an extensive season-extending greenhouse industry. Further, the Northeastern Ohio region is reclaiming its identity as a cluster of energy-related technology firms.

Yet the Ohio Department of Development also tracks some erosion in the prevailing state food industry. "After adjusting for inflation, the volume of [food] industry goods produced in 2005 was at its lowest level since 1997," a department fact sheet reads. Employment fell 6% in the years 2001-2006, and is forecast to fall another 1% by 2014.[2]

Moreover, industry analysts point out that the prevailing "just-in-time" food delivery system is increasingly vulnerable to disruptions in the supply of oil, weather crisis, or breakdowns in communications. "American grocery shelves only have three days of food available at any given time, and American citizens only have five days of food stored in their homes," a *Forbes* magazine reporter learned.[3]

Food is a major industry, with more than $60 billion in sales

This is of deep concern, because food is a major industry in Ohio. In addition to the 75,000 farms that work the land, selling some $7 billion of products each year, the related food industry directly accounts for 13% of the state's business. Overall sales for food and beverage manufacturers totaled $25 billion in 2006.[4] Farm input industries sell over $5 billion of products so farmers can farm. Retail food businesses sell an estimated $12 billion of food, while dining establishments garner $20 billion in sales.[5] The 594,566 employees who work in 29,584 food-related businesses (not counting farmers) earn $10.5 billion of personal income each year, 6% of the state's payroll.[6]

Important food industries call Ohio home, including Bob Evans Farms, Chiquita Brands International, Kroger, Lancaster Colony, JM Smucker, and Wendy's International. Among these are global industry leaders: the Campbell's Soup factory in Napoleon is the largest in the world, and the Heinz runs the largest ketchup factory on the globe in Fremont. General Mills operates the world's largest pizza plant in Wellston.

Farmers and consumers are disconnected

The weakening of food industry is curious in a farm state like Ohio, where personal income has increased 70%, and food consumption has risen 32%, over the past four decades. It is difficult to explain how the state's food industries could be declining in the face of such growth. This suggests a disconnect between producers and consumers, one that is weakening the overall food industry.

Moreover, the most rapid growth in the Ohio food sector involves direct sales from farmers to consumers. These increased 70% from 1992 to 2007, or 5% per year, to a total of $54 million. The value of these direct sales ranks right between tomatoes and sweet corn in the state farm economy — if this were a single product, it would count as the 13th-ranked farm commodity. Although direct sales make up only 0.8% of commodity sales, this is twice the national average, making Ohio a leader. During the same period, commodity sales fluctuated widely.

A hunger for connection

This rapid growth in direct sales reflects a deep hunger that is emerging across the U.S., as consumers switch to buying food from local farms they know and trust. Many farmers, in turn, want to know the people who consume the foods they produce.

This desire for relationships of trust also fuels emerging food businesses clusters. Repeatedly, interviews with leading practitioners in the state found that most viewed relationship-building as the key "lever" that is driving change in the food system.

Businesses build relationships of trust

To offer only one example of many presented in the interviews that follow: Snowville Creamery in Pomeroy is one solid nexus of activity that promotes the growth of several businesses simultaneously, with multiple benefits. The creamery (a) buys milk from two Ohio farms practicing sound environmental stewardship; (b) produces exceptional quality pasteurized milk and cream; (c) distributes these products to retailers across the state, and to urban markets in Pennsylvania and Washington, DC; and (d) produces the base used by Jeni's Splendid Ice Cream in Columbus to make world-class ice cream. Jeni's, in turn, (e) buys tons of fresh produce from Ohio farms to flavor their ice cream, which (f) creates additional business for Ohio farmers and suppliers. This in supports (g) wholesalers, (h) distributors and truckers, and (i) grocery retailers. Moreover, organic wastes from the dairy farm get cycled into (j) new fertility for the soil.

Of course, Snowville also offers consumers the benefits of access to grass-grazed, non-homogenized milk and cream; and reduces environmental impacts through careful reuse of water and efficient use of energy. Moreover, the two farms that nurture the cows that produce milk for Snowville foster better water quality by relying on permanent grass pasture; raise animals in ways that reduce the potential for contamination; create the conditions under which family-based business can thrive; build wealth in their local communities; ensure that the skills of food production are advanced in Ohio communities; and protect rural landscapes.

This creamery, of course, is only one example of the formation of a cluster of food-related business. Each of the firms interviewed for this report is part of a cluster that grows

uniquely to the resources, opportunities, challenges, and leadership in its own community. Aided by supportive nonprofits, extension educators, and public officials, these clusters create networks of mutual trust, and cycles of money, that tend to build health, wealth, connection and capacity in Ohio communities. This is an essential strategy for economic recovery, given the current crisis in lending and finance.

Emergent networks are based on developing-world experience

These emergent business networks are often led by people who hold significant experience in developing countries, or in low-income communities in the United States. These innovators are driven by a deeply informed sense that America will thrive only if it learns to do business in a more inclusive manner, with a sharper sense of limits (knowing the limits of the use of power, working to share power effectively rather than dominating others, and being more contained within our boundaries). This requires patience, an engagement with community, and a long-term view. Many established business managers have had no opportunity to develop these capacities, due to their immersion in a fast-paced and competitive business climate that favors short-term results.

Both for-profits and nonprofits look for subsidy

Indeed, the interviews with food-industry leaders compiled for this report show that new entrepreneurs are blurring the distinction between for-profit and nonprofit enterprise. Many for-profit ventures are requiring subsidy to take root, and many nonprofits are earning income in entrepreneurial ways. There is also a re-emergence of co-operative forms of business.

Public investment must create supportive infrastructure

Public bodies have a clear responsibility to support the growth of these business clusters by creating supportive infrastructure. This report uses the term "infrastructure" in a very broad way, including at least the following: (a) efficient market channels, transportation and distribution systems that connect Ohio businesses with local consumers; (b) physical facilities such as warehouses, root cellars, coolers and freezer space that ensure the state can build up and maintain food reserves in case of financial or other crises; (c) regional investment funds that support local and regional food visions; and (d) knowledge bases that ensure that community-based foods initiatives can rely upon the best technology and expertise available, and can effectively measure progress in creating a more sustainable Ohio economy.

Our research found that the prevailing food system is more a creation of public infrastructure investments than of market forces. Policy has augmented commerce's tendency to focus on commodities and distant markets, rather than on the communities of people who live in Ohio. This is good news, because public policies may be changed, while market forces seldom can be.

If Ohio builds infrastructure that creates local efficiencies, this may be the first time in the history of the state that this has been accomplished. This new way of doing business will draw upon Ohio's history, and its many economic assets, but will also create new opportunities and structures that were never imagined before.

Ohio has long looked to distant markets

Early Ohio agriculture was formed to please commercial markets, largely in urban centers like Baltimore, New York, New Orleans, and St. Louis, rather than local markets, which were not viewed as large enough to support Ohio farmers. Agriculture was also structured largely around waterways, then railroads, and then highways, rather than around the goal of creating lasting infrastructure supporting Ohio communities.

A 1982 study by Ohio farmer Jon Shafer, writing for the Cornucopia Project of the Rodale Institute, concluded that the agricultural economy of Ohio had developed in ways that were similar to those of a colony.[7] As a producer of raw commodities that were sold into global markets, the state was not effectively feeding itself, and moreover had very little power over its own commerce.

The emergent food sector in Ohio is at long last tackling this challenge, and attempting to reverse these patterns of dependency. The economic case for Ohio to produce more of its own food is quite compelling. Over the twenty-year period 1999-2008, Ohio farmers gained a surplus of $300 million per year (about $4,000 per farm), but depended heavily on other sources of income — government subsidies, rental income for renting out land, and most importantly, making sure that one or more family members hold off-farm jobs — to make ends meet. The year 2010 brought high crop prices, yet also skyrocketing input costs. After adjusting for inflation, the net farm income from producing crops and livestock nationally was slightly less than in 2008.

Moreover, Ohio farmers spend about $4 billion each year buying farm inputs that are sourced outside the state. This creates a significant flow of money away from rural communities in Ohio. Simultaneously, this represents a huge economic opportunity for the state, if these input costs can be provided by local sources.

Meanwhile, Ohio consumers buy $29 billion of food each year. Yet about $26 billion of this food is sourced outside of the state. Repatriating these consumer dollars also represents a prime economic opportunity.

The Ohio farm and food economy sustains losses of $30 billion each year

All told, then, the Ohio farm and food economy causes $30 billion to flow away from the state *each year*, as farmers farm and consumers eat. Bringing these expenditures — money Ohio residents already spend — back to Ohio is not necessarily easy. The infrastructure that would connect Ohio farms with Ohio consumers will need to be carefully constructed, through both private and public investment.

This also represents economic opportunity

Yet the payoffs are clear. If Ohio residents purchased only 15% of the foods they eat at home directly from Ohio farmers, with no intermediary, this would result in $2.5 billion of new farm income for the state — more than a third of what farmers now sell to fickle commodity markets.

Moreover, the federal subsidy system, by offering cash for commodities, has essentially subsidized the extraction of wealth from the state. USDA data show that Ohio farmers spent, since 1949, $152 billion *more* paying for external inputs than they received from farm

subsidy payments. This means that even when some individual farmers are earning a profit, the farm sector is shipping immense quantities of money out of the state — consequently, rural communities lose wealth and capacity.

One result of this extractive economy is that over 3.1 million people (28% of the state's population) earn an income of less than 185% of the poverty line — the level at which children qualify for free and reduced school lunch. It is a significant challenge for Ohio to acknowledge that more than one quarter of the population, in a prominent farm state, is unable to afford the food they need. Moreover, low-income residents of Ohio make up a substantial market, spending $6.5 billion each year buying food.

It is not surprising, given these extractive relationships, combined with prevailing subsidies given to established businesses, that the emergent food sector would require subsidy of its own to flourish. Yet how to support is a critical issue, because some subsidies draw wealth out of Ohio. The most lasting public investments are likely to be infrastructure investments.

Peak oil creates great uncertainty

Further, Ohio heads to a future of great uncertainty. The prevailing food system is fundamentally dependent on the availability of relatively low-cost oil. This assumption is rapidly breaking down as oil supplies peak. There is no way to know whether oil will be available in 20 years — nor if it is, how much it will cost. Climate change is creating unpredictable swings in temperature, rainfall, and damaging weather events. Farmers, of course, are the most vulnerable element of our society to such weather trends.

In this period of uncertainty, small businesses are often better positioned to respond with flexibility to changing conditions, simply because they are small, and by their nature are responsive to local markets rather than global ones. By clustering, as in the Snowville example above, these small firms may be able to build greater stability.

Business clusters create jobs, stability and resilience for Ohio

Moreover, if small firms are networked with each other, and with the communities in which they operate, this will build both scale and critical social connectivity. Building this "social capital" will be of prime importance, both for economic recovery and for keeping peace during uncertain times. Those communities that are the most effectively networked will be those that can be the most resilient. Business clusters have a clear role to play in fostering this social capital, along with their community partners. This will ensure that job creation lasts.

A note on Methodology and Approach

The study offers a systemic view of the Ohio food system. Drawing upon prior work (See *Mapping the Minnesota Food Industry*)[8] this report will focus on what is *emergent* in the Ohio food system. A technical definition of emergence is: "those new developments that could not be predicted simply by examining the prevailing conditions in the food system." That definition focuses on the ways elements of a system organize themselves in creative or surprising ways to create resilience. A more popular way to phrase this would be: What initiatives are Ohioans creating in an effort to transform the Ohio food system so it becomes more responsive to the vision and needs of state residents?

Central to this analysis are the comments of "wise practitioners" who are experienced in the workings of the food system, thoughtful about the trends that fuel these new developments, and articulate in expressing their points of view. Accordingly, considerable attention has been devoted to interviewing food system practitioners in as many parts of the state as could practically be visited. These interviews have included farmers, food buyers, processors, food retailers, distributors, extension agents, and researchers.

Also critical to the study has been a review of selected historical literature, focused on the book, *History of Agriculture in Ohio to 1880,* by the late Marietta College historian Robert Leslie Jones, along with selected local histories located in academic and historical libraries.

Data from public sources — Bureau of Economic Analysis, Federal Census, Census of Agriculture, Centers for Disease Control, and Bureau of Labor Statistics — also help to understand the historical development of Ohio farm and food systems, and current conditions in related industries. As time-series data, these offer solid insights into systems trends.

This treatment also aspires to be a nonpartisan view, which draws upon insights held by Ohio residents of all persuasions, and defines a position of the center that would unify policy discussions as Ohio works to support emerging business clusters.

Demographic overview

Ohio's population has begun to recover from the decline of manufacturing industries that undermined its metro regions. Both rural and urban areas show steady increases in population since 1969, although both are rising at a slow rate. Overall, the state's population increased 9% over the past four decades.

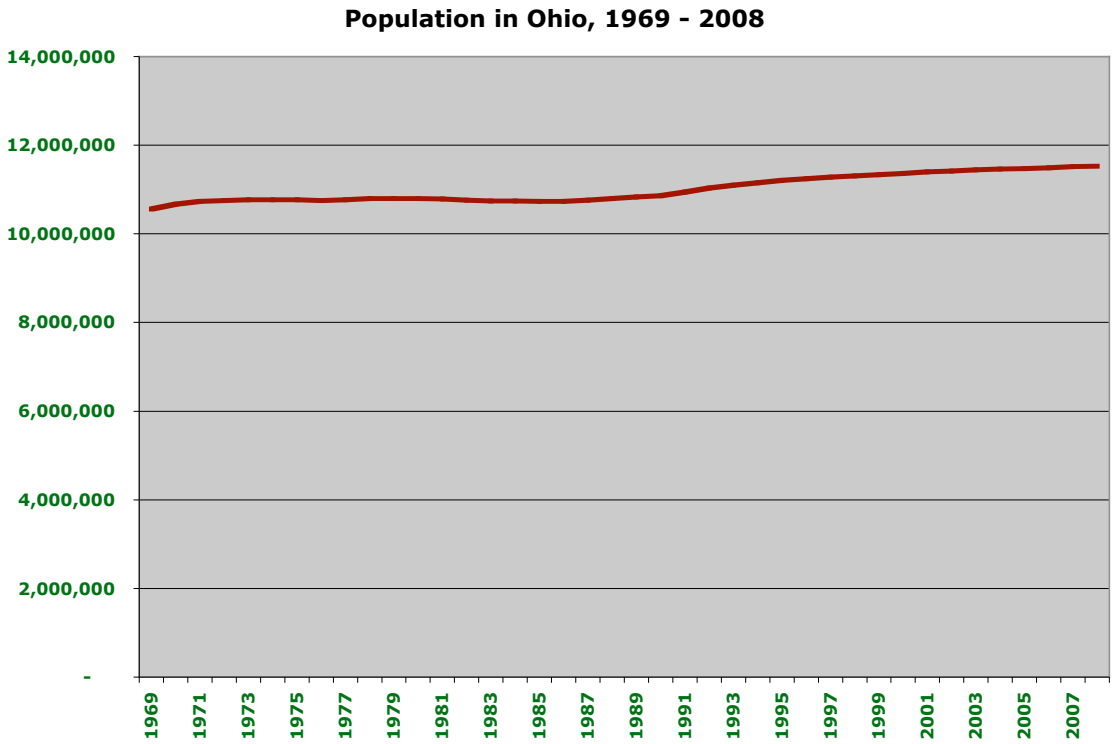

Chart 1 — Source: Bureau of Economic Analysis

Racially, the population of Ohio in 2009 was predominantly White, with African-Americans the next most prominent group, followed by Latinos:[9]

Table 1: Ohio population by race

White	84.7%
Black	12.1%
American Indian and Alaska Native	0.3%
Asian	1.6%
Native Hawaiian and Other Pacific Islander	0.0%
Hispanic or Latino	2.8%

Personal income has risen more rapidly than population, increasing 70% since 1969, after inflation is taken into account, to $414 billion. Moreover, this has been a steady and persistent increase.

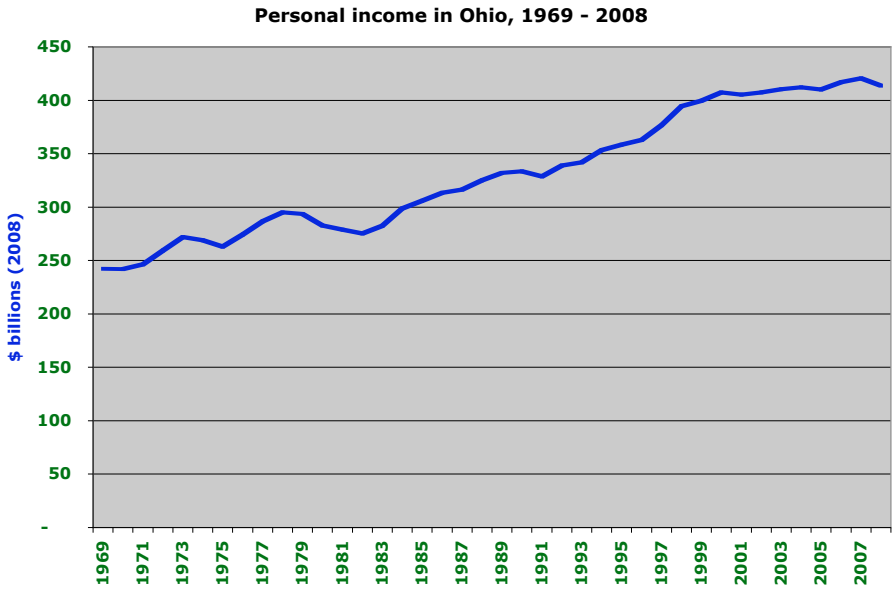

Chart 2 — Source: Bureau of Economic Analysis. Note that data are shown in 2008 dollars.

However, this overall rise in personal income masks a decline in the proportion of income that is earned by manufacturing workers, which fell steadily from 2001 to 2008, as shown on the next chart. Retail workers also are earning less as a sector. Government workers, who represent the second largest source of income in Ohio, gained only slight increases in pay over the same years. The main sector experiencing stronger personal income was health care and social assistance.

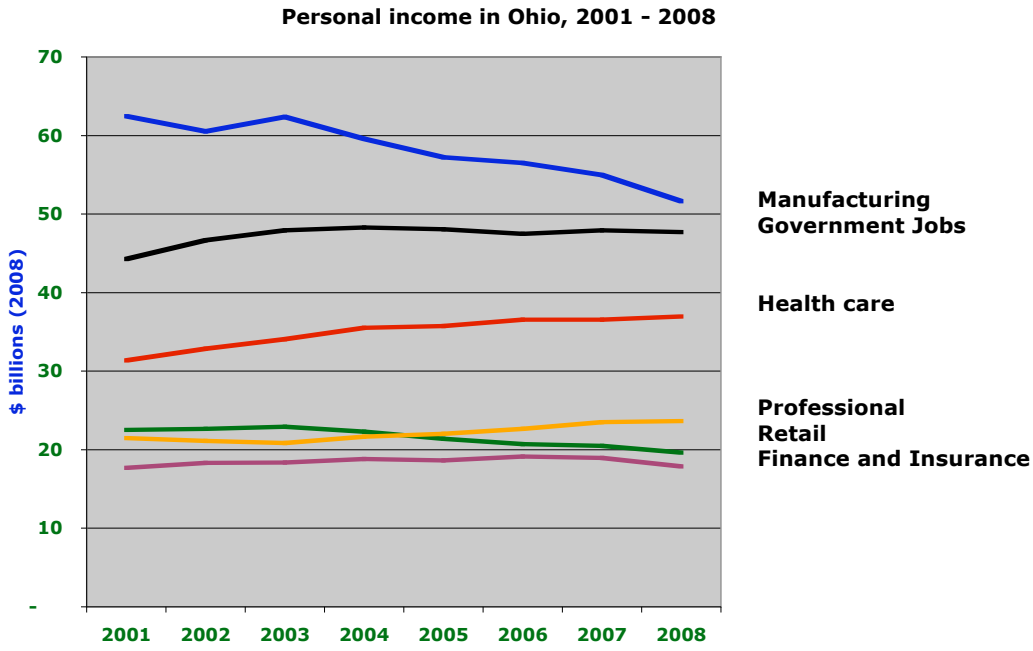

Chart 3 — Source: Bureau of Economic Analysis. Note that data are shown in 2008 dollars.

Moreover, Bureau of Labor Statistics surveys of consumer expenditures show that Ohio households *lost* an aggregate total of nearly $17 billion of net worth in 2008 alone, largely as a result of taking on new debt.

Household income data from the 2005-2009 Census also show that 370,000 households (about 950,000 residents) in the state earn less than 10,000 per year *[see chart below]*. Over 3.1 million people (28% of the state's population) earn an income of less than 185% of the poverty line — the level at which children qualify for free and reduced school lunch.

It is a significant challenge to Ohio to acknowledge that more than one quarter of the population, in a prominent farm state, is unable to afford the food they need. This despite the fact that low-income residents of Ohio spend $6.5 billion each year buying food.[10] About $1.6 billion (30%) of their purchases are aided by SNAP coupons (formerly called food stamps); WIC coupons make up $279 million of these food purchases.[11]

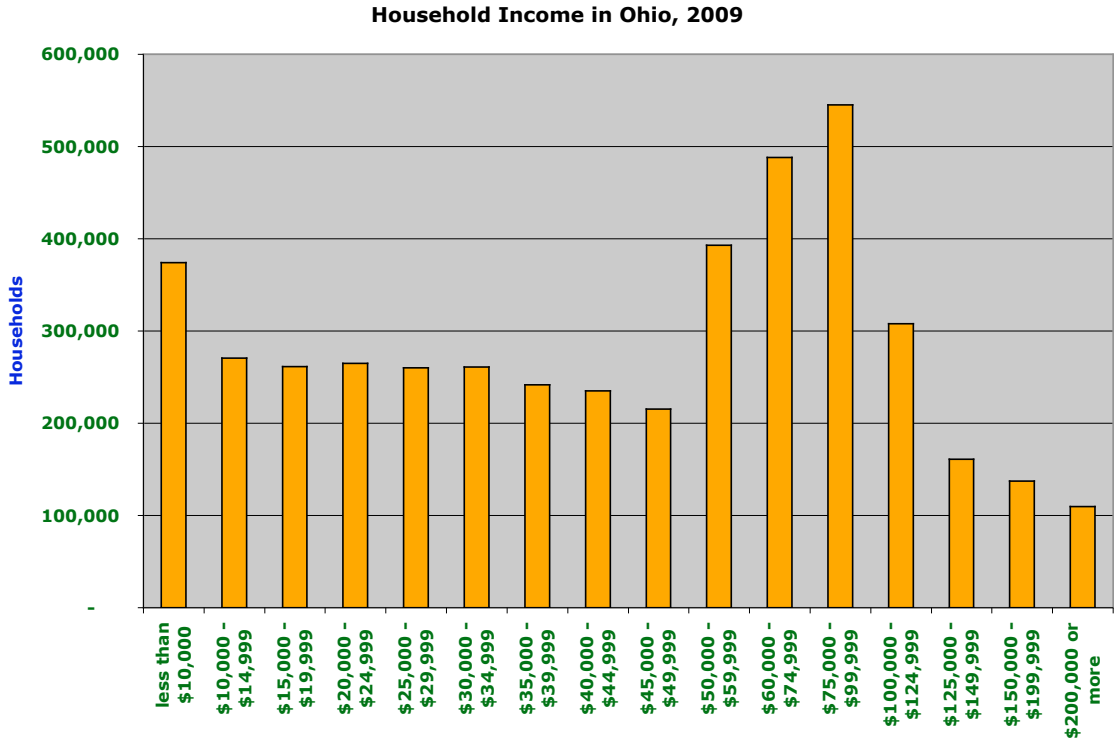

Chart 4 — Source: Federal Census, American Community Survey, 2005-2009

Food-related health concerns:
21% of Ohio residents report they eat five or more fruits and vegetables each day; 79% do not. This is a key indicator of health, since proper fruit and vegetable consumption has been connected to better health outcomes.[12]

49% of Ohio adults report they have at least 30 minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20 or more minutes three or more days per week; 51% do not.[13]

67% of state residents are overweight (37%) or obese (30%).[14]

10% of the population has diabetes.[15] The medical cost of treating diabetes and related conditions is estimated at $6.6 billion per year.[16]

14.5% of all adults aged 18-64 in the state have no health insurance.[17]

The food assistance system in Ohio provides emergency food for an estimated 1,430,000 different people annually.[18]

31% of households in Ohio that receive food assistance report having at least one household member in poor health.[19]

Among programs that existed in 2006, 85% of pantries, 74% of kitchens, and 67% of shelters in Ohio reported that there had been an increase since 2006 in the number of clients who come to their emergency food program sites.[20]

Industry analysts point out that the prevailing "just-in-time" food delivery system is increasingly vulnerable to disruptions in the supply of oil, or breakdowns in communications. "American grocery shelves only have three days of food available at any given time, and American citizens only have five days of food stored in their homes," a *Forbes* magazine reporter learned.[21]

Elements of the Food and Farm Economy of Ohio

Food is an important industry in Ohio, representing 11% of state employment. The $10.5 billion of personal income earned by workers in food-related industries (not including farmers) amounts to 6% of the state payroll.

Table 2: Employment and Payroll for Ohio's food industries (2008)

	Employees	$1000s Payroll	Establishments
Ohio totals	4,728,416	182,093,270	263,761
Agricultural Support Services	842	23,918	142
Food Manufacturing	50,993	1,978,660	914
Grocery & Related Wholesale	27,862	1,303,222	871
Farm Product Raw Material	2,432	99,261	248
Beer, Wine, & Alcohol	5,745	277,905	107
Farm Supplies, Wholesale	2,418	98,240	262
Food & Beverage Stores	98,904	1,829,682	5,110
Refrigerated Warehousing	173	5,103	8
Farm Product Warehousing	4,729	158,374	86
Food Services & Drinking	400,468	4,714,169	21,836
Total food-related	**594,566**	**10,488,534**	**29,584**
Percentage	13%	6%	13%

Source: Bureau of the Census: County Business Patterns 2008

The OHFOOD model created at the Ohio State University produces even larger counts (for 2004), since it includes not only personal income, but the overall output of each industry.[22]

Table 3: Economic output and state value generated by Ohio's food industries (2004)

Industry	Total output $ billions	Gross State Product (GSP) $ billions
Farm inputs, equipment, and professional services	5.3	1.3
Farming	7.2	3.8
Food Processing	28.1	6.6
Food and Forestry wholesale and retail *(note this includes forestry/wood)*	18.1	12.1
Food Services	20.3	9.2

Important food industries call Ohio home, including Bob Evans Farms, Chiquita Brands International, Kroger, Lancaster Colony, JM Smucker, and Wendy's International. Among these are global industry leaders: the Campbell's Soup factory in Napoleon is the largest in

the world, and the Heinz runs the largest ketchup factory on the globe, in Fremont. Dannon operates the world's largest yogurt plant in Minster. General Mills operates the world's largest pizza plant in Wellston. The Ohio Department of Development (ODOD) also notes that the Weight Watchers processing plant in Massillon hires 800 employees.[23]

Yet the ODOD also identifies some erosion of the strength of the food industry. "After adjusting for inflation, the volume of [food] industry goods produced in 2005 was at its lowest level since 1997," a department fact sheet reads. Employment fell 6% in the years 2001-2006, and is forecast to fall another 1% by 2014.[24]

With $7 billion in sales in 2007, Ohio's farm sector ranks 15th in the U.S. Crop sales totaled $4.1 billion, or 58% of 2007 farm product sales. The remaining $2.9 billion (42%) involved sales of livestock or livestock products.[25]

Ohio has 75,861 farms, 2% less than in 2002, with 14 million acres of farmland. Average farm size is 184 acres. 99% of Ohio farms are owned by Whites.[26]

The state is one of the primary poultry producers of the U.S., ranking 2nd for the number of laying hens, with 27 million, and 6th in the U.S. in pullet hens (pullet hens lay eggs that are incubated to raise young chicks as laying hens).

Ohio is also eight-largest producer of hogs and pigs in the U.S., eighth in grain sales, and eighth in sales of nursery and ornamental crops. The state ranks tenth in the inventory of hogs held by farms.

The state also ranks 6th in the nation for the number of acres devoted to soybean production in 2007, and 8th nationally for acres devoted to corn.

Key farm commodities:
Ohio's major farm products in 2008 are shown on the next page.

Table 4: Top farm products in Ohio, 2008

		$ millions
1	Corn	2,071
2	Soybeans	1,874
3	Dairy products	1,005
4	Chicken eggs	585
5	Hogs	435
6	Wheat	424
7	Cattle and calves	357
8	Greenhouse/nursery	325
9	Broilers	148
10	Turkeys	134
11	Hay	108
12	Tomatoes	79
13	Corn, sweet	36
14	Apples	32
15	Other	83

Source: USDA / ERS

The same information presented as a pie chart:

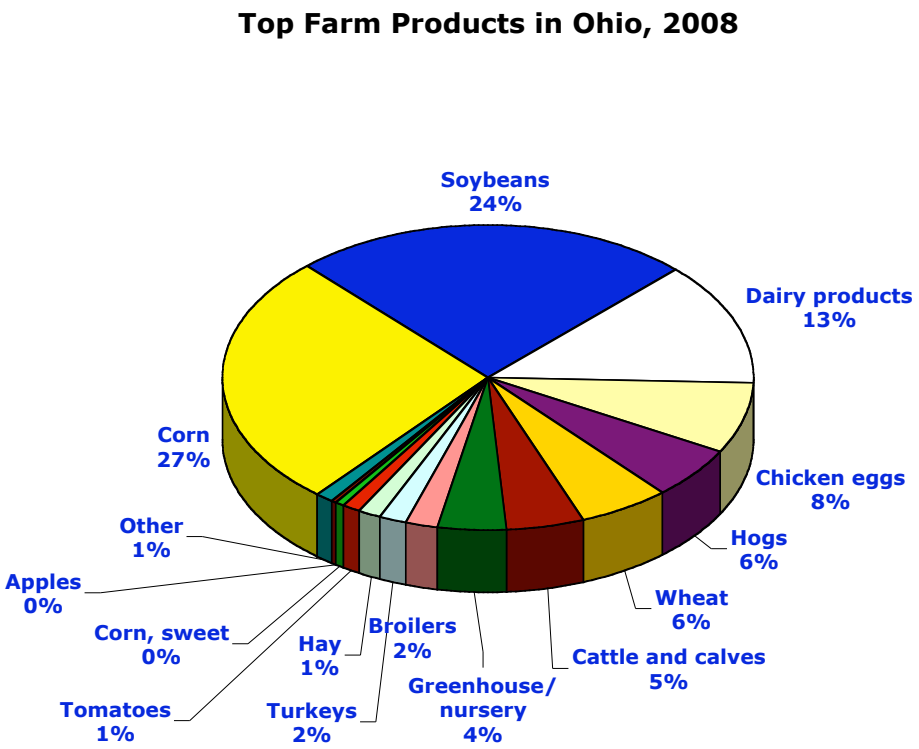

Chart 5 — Source: USDA / ERS. Note that this is the same data as in Table 4, presented as a graph.

A Brief History of Food in Ohio

The early days of Ohio's agriculture left an indelible imprint on the state, one that still echoes as Ohioans wrestle with contemporary food choices. Today, some argue that the state needs to return to an era when local foods were common. Yet the reality is not that simple.

It might be easy to imagine rugged pioneer families carving out meager lives on homesteads nestled alongside the Ohio River in the 18th Century. This image is partly true. Yet the brave pioneers who bore the brunt of early settlement were themselves constrained by broader political realities.

This report draws in large part upon the excellent study, *The History of Ohio Agriculture to 1880,* written by the late Robert Leslie Jones, formerly a professor at Marietta College. This carefully researched book outlines in satisfying detail the early development of farming in the state. The author of this report has relied on it heavily, as a straightforward, practical work that is deeply relevant for today's food pioneers, since Jones held a primary concern for identifying what was unique about Ohio's agriculture in history. The interpretations that follow are those of this author, not Mr. Jones, unless explicitly stated.

Indigenous Agriculture

The book begins with a summary of the food products that were cultivated by, or available to, the indigenous populations of Ohio prior to White settlement. The central element of Native American agriculture was a combination of corn, squash, and beans, called the "three sisters" because the three plants helped each other grow, and also provided complementary nutritional qualities. A diet based on the three crops allowed Native eaters to build their own protein by eating complementary amino acids, rather than relying upon protein from external sources such as animal flesh.

Often this was a village-based agriculture, yet historical documents cited by Jones show that several larger plantings were made, of as many as 3,000 acres, all cultivated by hand. The variety of foods grown by tribes prior to European contact is greater than what would be found in most modern communities. Jones lists, in addition to corn, beans, and squash: four varieties of pumpkins, two types of watermelons, gourds, muskmelons, cabbages, turnips, potatoes, cucumbers, sunflowers, strawberries, blackberries, raspberries, gooseberries, currants, three varieties of grapes, several plum varieties, haws, cranberries, and crabapples, and maple syrup, as well as harvested wild fruits and nuts (hazel nuts, hickory nuts, walnuts, and chestnuts), animals, and fish.[27]

Jones points out that hundreds of settlers scattered across the state before the American Revolution, but that few of these left lasting traces. Many were trappers. Most occupied their land illegally. The first settlers often adopted Native techniques of farming, including the "three sisters," which persisted even as these farmers turned to commercial production. Some moved further west as populations began to enter the territory, and others became invisible as a new narrative developed after the end of the Revolutionary War.

Ohio's first formal settlements were organized as a corporation
Central to understanding this new narrative was that Ohio was formally settled by a corporation. The Ohio Company of Associates was formed in a pub in 1786 in Boston, Massachusetts, by a group of war veterans, led by Rufus Putnam of Sutton, Massachusetts, and Benjamin Tupper of Stoughton. As veterans of an army that could not pay its soldiers a regular salary, these men had been promised allocations of land in compensation for their heroic service. By organizing a corporation, they were entitled to invest in their claimed lands.

The roughly 20 members of the Ohio Company claimed an extraordinary amount of acreage, totaling 1.2 million acres in Ohio, accumulated in two major purchases and one donation. They loaded themselves and a few belongings into boats and traveled down the Ohio River until they came to the junction of the Muskingum and the Ohio Rivers. Marietta, their new settlement, was named after Queen Marie Antoinette of France.

One of the reasons the federal government was eager to turn over ownership of such large tracts was that having settlers occupy the land would both inhibit Native American claims to their ancestral homelands, and would also assert that America was ready to command dominion over all of the land west of the original thirteen colonies.

Three categories of early farmers
The settlement patterns of the Ohio Company did not reflect the notion that pioneers came to Ohio to create thriving communities. Jones lists three general categories of early farmers: (a) land clearers, (b) ordinary farmers, and (c) wealthy farmers, many of whom speculated in land.

The Ohio Company veterans scattered miles from each other, selecting the highest points of land with the best views, or the most propitious trading sites, as their own, surrounding themselves with lesser lands they hoped to sell to newcomers. It was, indeed, more of a land speculation deal than a farming enterprise. Its focus was on building wealth for war veterans, not on building strong communities in Ohio.

Still, among the corporate leaders were accomplished farmers. They moved to Ohio to raise food, at least for a while. Yet after a few years of establishing themselves, and gaining the experience in their new territory to know they could feed themselves bare essentials, these farmers looked for markets. There were few markets indeed in Ohio, given that most everyone who lived in the territory owned land, and preferred to feed themselves. This meant the newcomers looked elsewhere. The most obvious place to turn was to feed those soldiers who were patrolling the new territories west of the colonies, asserting America's claim to its continent.

This is to say, both the patterns of land ownership and the access to markets for farmers were dictated by America's hopes of expansion, of her need to show some command over her territory in the face of foreign claims, and by the personal needs of that military presence. The corporate Ohio settlers were further constrained by the need for credit to buy farm inputs necessarily came from elsewhere — England, eastern states, or relatives — which meant these new landowners farmed to please external creditors, as well.

These earliest settlers often related to newcomers as landlords or speculators, perhaps selling land to new migrants, perhaps leasing land, or offering sharecropping arrangements. Several of the original corporate owners made money from this wave of incoming farmers, and moved themselves further west where they could repeat the pattern.

Early settlers respond to market forces

As Jones concludes, "The idea of rural self-sufficiency, either in the pioneer period or later, is one that cannot be justified. It is better to consider that owners and tenants were always, out of their own felt necessity, responding to market forces."[28]

Other groups of veterans from Virginia obtained land in the Virginia Military District, a north-south allocation of 4 million acres between the Little Miami and Scioto Rivers in the Southwestern part of the state. The Connecticut Western Reserve, running from Pennsylvania to the center of the current state of Ohio in its northernmost regions, attracted 57 of the wealthiest Connecticut men at the time, who formed themselves into the Connecticut Land Company to purchase 3 million acres of land.

As more and more settlers poured into the Ohio territory, also in search of distant markets where they could sell crops and livestock, and also in debt to eastern lenders, they would quite naturally gravitate toward those rivers that offered both a means to travel from their previous homes to their new ones, and also a path for their farm products to make their way to distant markets.

Ohio's favored position for water transport

Ohio occupied a favored position in an era of water transport, since it was bordered by both Lake Erie and the Ohio River. The major rivers of the state flowed into one waterway or the other. Travel on Lake Erie offered access to markets in Pennsylvania and New York State, especially once the Erie Canal was opened. Travel on the Ohio offered easy reach of markets in emerging urban areas such as Cincinnati, St. Louis, and New Orleans — and as the Ohio canal system grew, it became cheaper to ship to markets in Baltimore and Washington, DC, as well.

Thus, by the 1800s, waterways became one of the leading forces determining what products would be produced where. Various regions of the state developed specialties based on what transport and storage infrastructure offered advantageous access to which markets, and based also on how natural conditions of the land offered competitive advantage to different commodity producers. Thus, the Muskingum River Valley focused on raising wheat. Miami River valley farmers tended to specialize in hog production. The Scioto Valley specialized in corn-fed cattle. Farmers in Madison County and its surrounding region devoted themselves to grass-fed cattle. Dairy was the specialty of the Western Reserve.[29]

Jones recounts that one Circleville farm was so fertile, that its owners harvested corn for over 65 years without rotating or manuring.[30] The mentality of some farmers, he points out, was exemplified by farmers who would grow corn continuously for 40 years, until its fertility was exhausted, and then move further west to exploit new lands. Of course, there were also farmers who were exceptionally careful stewards of their land. Yet even they were constrained by a prevailing ethic that favored rapid expansion of markets.

Regions develop production specialties

Thus, Ohio was more or less subdivided into regions that specialized in a few select commodities, destined for transport down a specific river, to be shipped to growing urban areas near that river. Cincinnati became known as "Porkopolis" to some, due to its concentration of pork processing plants. New Orleans purchased much of this pork. Important hog breeds included Poland China, Berkshire, Bedford, Grass, Byfield, Essex, Suffolk, Hampshire, Irish Grazier, and Russia.

Dairy products were shipped from Western Reserve farms and creameries to Pittsburgh, Cleveland, Cincinnati, and New Orleans. Corn was primarily raised to be fed to livestock living on the farm that produced the corn, but distilleries rapidly developed in Marietta and spread to 30 other Ohio counties, so whisky was soon imported down the Ohio River. Wheat was milled locally for family use, and in Marietta and Cincinnati for shipment as flour to New Orleans.

Beef became somewhat of an exception to this general rule. In Ohio's early days, cattle were being raised further west, and were actually driven by cowboys through Ohio en route to New York, Pennsylvania, and Baltimore. Gradually, however, a home-grown industry developed. Starting with mongrel cattle of Dutch, Spanish, West Indies, and Devon origin, growers became more dedicated to purebred varieties of Shorthorn, Patton, Durham, Devon, and Hereford cattle. Using first shipping lanes and then railroads, finished animals were conveyed live to Cincinnati, and then to eastern markets such as New York.

Jones identifies several markets for fruit and vegetables raised in Ohio. Fresh peaches, he says, were the first fruit to be raised commercially. Orchards had been planted at Fort Harmar, across the Muskingum River from Marietta, before the Ohio Company settlers arrived. In addition to selling peaches fresh for eating, they were dried and their pulp was also distilled into peach brandy. Having these preserving options made orchards profitable early. Although peaches were not originally of high quality compared to eastern products, they could be sold in Illinois and Indiana where settlement was less developed. By the 1850s, Ohio peaches were being shipped from Cincinnati to Detroit, Indianapolis, Chicago, northern Ohio, and upstate New York.[31]

Apples were more ubiquitous, with one account claiming that nearly every farm in the Western Reserve had planted apple trees by the 1830s. John Chapman, also known as Johnny Appleseed, cleared land and planted trees in advance of settlers arriving in the north central part of Ohio, so he could sell them trees when they arrived. Israel Putnam's orchard near Belpre featured twenty-three varieties of apples that had been imported from Long Island and New England.

Among the apple varieties named by Jones as being raised in the early 19th Century were: Seek No Further (Westfield), Chandler, Pound Royal, Tolman's Sweeting, Queening, Rhode Island Greening, and Roxbury Russet. The latter variety was in strong demand in New Orleans and the West Indies. The Rome Beauty was developed from a single tree in Washington County. Orchards located close to the Ohio River sold apples in fresh, dried, or cider form in markets along the Mississippi, Missouri, and Illinois Rivers as well as the Ohio.[32]

Plums, pears, and cherries were significant crops in the Lake Erie region as early as 1815, although fireblight devastated pear orchards beginning in 1818. Diseases also limited the commercial potential for plums and cherries.[33]

Cincinnati became a center for strawberry cultivation, with one family, the Longworths, reported to have the best varieties, that sold for prices of $.25 to $.38 cents per quart — a value of something like $7 per quart in current dollars. By 1848, the Cincinnati region was said to have 250 acres of strawberries under cultivation, including land across the Ohio River in Kentucky. Three years later, strawberries were being packed in ice and shipped by steamboat to New Orleans. Belmont County farms shipped strawberries to Baltimore and Chicago by 1870.[34]

French settlers in Gallipolis planted Muscatel vineyards as early as 1796. Hamilton County featured 300 acres of vineyards by 1844. Yet grape rot quickly made wine grapes precarious, so production in southern Ohio peaked in 1850. This also led to an early version of climate uncertainty. According to Jones, "the grape growers were convinced that the climate had changed in consequence of the clearance of the forests and that they were helpless" to bring grape production back (Jones adds that copper sulphate fungicides, which were not developed until 1885, would have contained the condition). New vineyards were opened up in northern counties, especially on the large islands in Lake Erie. Significantly, Jones adds, there was little attention to raising grapes commercially for table use until 1850 — the desire for more lucrative markets in wine had been too much the focus until then.

Potatoes were one crop that tended to be used by pioneering families for their own use, Jones adds, at least until railroad and water transport provided consumer outlets. Several varieties of potatoes were cultivated commercially in Ohio by 1850, including Neshannock, Pink Eye, Peach Blossom, Flowers of Edinburgh, Baltimore Blue, the Rohan, and Peachblow. Over eight million bushels were produced commercially in 1859. Potato blight also took a toll on production starting in the 1840s.[35]

Commercial sales of vegetables totaled $907,513 in 1859, worth about $20 million in current dollars, or one-seventh the value of current (2007) vegetable sales for the state of Ohio. At the time, Ohio had about one-fifth the population it has today. Many Ohioans at the time were farmers themselves, and had the capacity to grow vegetables for their own use, without needing to buy from a grocery. Jones does not describe in depth the markets where these vegetables were sold, other than to say that perishable products were likely sold locally, and that farmers later developed export markets for vegetables that could be stored for shipment via waterways or railroads.[36]

One of the first greenhouses built in the state was built in a Zoarite community in Tuscarawas County in the 1820s. It featured twelve-foot-high lemon and orange trees.[37]

Separate market channels shape agriculture

The overall pattern is clear, but complex. The market for food became several markets at once, depending on which product was being traded, and where it was being shipped. As far as local consumption is concerned, in a territory and a young state full of farmers, many families had the means to produce much of their own food. Most farmers owed money, and needed cash to repay debts, and looked to commercial products that could be sold, either to

urban centers, or to pioneer territory where farmers were not yet established. Their reach to those markets depended upon being located near waterways, and upon public investment in building canals, railroads, and loading facilities that gave farmers access to markets.

Public investment underscored the notion that commodities were traded in markets. Only rarely would it be asked how to build infrastructure that ensured that local food could be traded to local consumers, no matter which commodity.

Transportation routes change

Yet markets come and go, while communities grow. Waterways gave way to trains, which at times gave way to trucks. As more and more of the continent was farmed, farms found once reliable markets turning precarious. Many a farmer across the grain belt celebrated mightily when railroads arrived, offering quick access to urban markets — without stopping to think this meant that distant producers now had access to those same markets, if not the very market where the farm family lived. With new competition, an expansionist mentality, and a lack of tolerance for public sector interference in the marketplace, there was little that could ensure that local authorities could plan carefully to make certain everyone would eat well — and there was so much food being produced in the United States that the question on everyone's mind was, rather, where should we export? Certainly local food trade existed, and was important, but often was seen as secondary to finding distant markets that needed products American farmers could grow. Creating stable systems for local food trade was seldom a matter of public policy. Today may indeed be the first era in our young nation's history in which such planning takes root.

With the Civil War came a new demand for food that could be shipped to support Union troops as they camped in the southern states. While feedlots had been a feature of Ohio agriculture as early as 1820, the large-scale animal production industry was launched as the Union army grazed thousands of cattle on what is now the Capitol Mall in Washington, DC. Grazing here close to railroad tracks, the cattle could be shipped live in boxcars to the camps where troops were deployed, with the meat processed for the soldiers' use.

Yet the Civil War did not bring important growth for the Ohio cattle industry. Railroads had indeed brought cattle ranchers in contact with immense markets in New York and other eastern states, yet the railroads had also offered access to competing producers in Illinois and other states farther west.

The growth of mechanization in the late Nineteenth Century made it possible for farmers to exploit more and more acres with exceptional efficiency, and fostered the farming of lands that had been overlooked when people had relied on the physical power of humans and horses. Now the goal became how to produce as much product as possible, both by using new equipment and by moving new land into production. The story of farming in Ohio almost gets lost at this point, because the expanding nation creates a more homogeneous farm economy.

Farmers experience difficulties with debt

Yet with new equipment and rising demand came new debt. Farmers perceived, often correctly, they were always on the short end of the stick. Business cycles and banking failures brought immense upheaval in the 1890s. Many farms failed as credit evaporated. A

wave of Populist farm organizing, centered in the Southern states, called for money to be issued by the Federal Reserve Bank in regional Reserve banks, based on the amount of farm commodities that had been produced, and loaned to farmers based on what they had stored in reserve. Farmers devised this approach in response to the fact that eastern industry had tied up most of the lending capital in the 1890s, leaving none for farmers. The Populists lost political momentum after their presidential candidate lost in the 1892 and 1896 elections (it is not clear the candidate, William Jennings Bryan, fully understood the farmers' economic case, nor did he identify closely with their class background). Yet they had in fact, by 1914, designed some of the key elements of what became the regional banks of the Federal Reserve system. As ultimately designed, however, the Federal Reserve system included regional banks, but made no effort to connect the creation of new money to farm production.

Farmers enjoyed their most prosperous era in 1910-1914, after currency was somewhat stabilized, and as Europe began building up for war. As European nations shifted men to soldiering and manufacturing, they sought more food to import. The U.S. was the main global supplier. Production in the U.S. was strong, so income was high. In fact, this era is still known as the "Golden Age" of U.S. agriculture, because farmers earned so much money. Families who were lucky enough to own farms in this era often became the most stable landowners for generations to come; some were able to buy out their neighbors during the sparse years of the 1920s and 1930s. At this point, bankers were of only limited use to farmers: 75% of all farm debt was held by individuals.

Farm numbers decline as America grows

The number of farms in Ohio has steadily decreased since 1910, with the exception of the years during the Great Depression, when a lack of jobs forced many families to turn to farming for their subsistence. The number of farms dropped more rapidly than usual in 1973-1974 as farm families were encouraged to get out of farming by lenders and in the late 1980s as a result of the farm credit crisis (see text below).

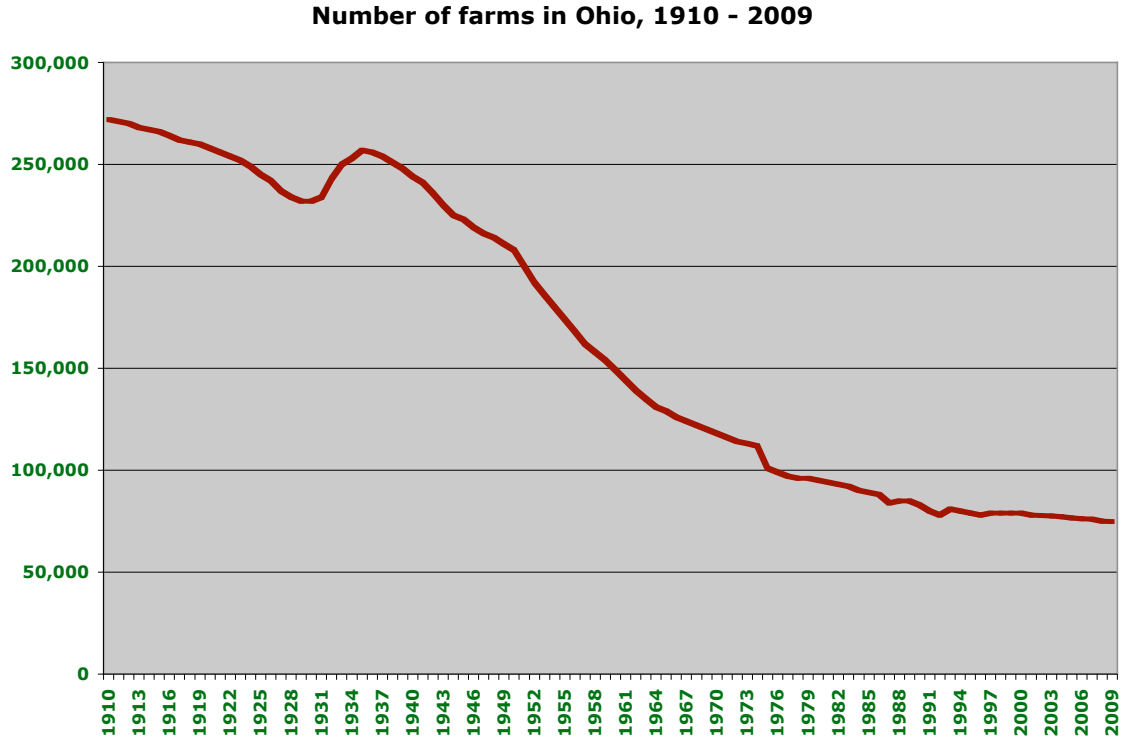

Chart 6 — Source: USDA Economic Research Service (ERS)

After World War I ended, farmers prospered for a few years until Europe restored war-torn fields and rebuilt its agriculture. Yet this rural prosperity collapsed around 1920. Now industry was expanding, so much so that often farmers could not get credit because urban manufacturers once again were commanding loans first. Another dynamic crept in as well. The number of farmers in the U.S. began to decline, a trend that continues to this day.

This was an era of great urban prosperity, but rural America grew weaker and weaker economically, both because of a decline in farm income, and because the rural lifestyle was eroding in comparison with urban areas. Since farming was so critical to the U.S. economy, this meant trouble for the entire national economy. Financial experts who looked at the root causes of the Great Depression — at least those who considered agriculture important — concluded that the U.S. would have been able to produce its way out of the stock market crash of 1929 if the farm economy had not been so weak. That is to say, the erosion of farm income was a major cause of the Depression itself — not only in the U.S. but in all nations that produced agricultural commodities.[38]

Ohio farms in a national context

The following chart shows the balance sheet for the U.S. farm sector, beginning in 1929. This will help illustrate the narrative that follows. This chart shows the cash receipts farmers have earned by selling crops and livestock since 1929, the costs associated with producing these products, and the farm production balance — the balance left after production expenses are subtracted from cash receipts. This is an effective measure of the financial health of the farm production sector, since it shows how effectively the backbone of the farm economy — producing crops and livestock — was rewarding farmers.

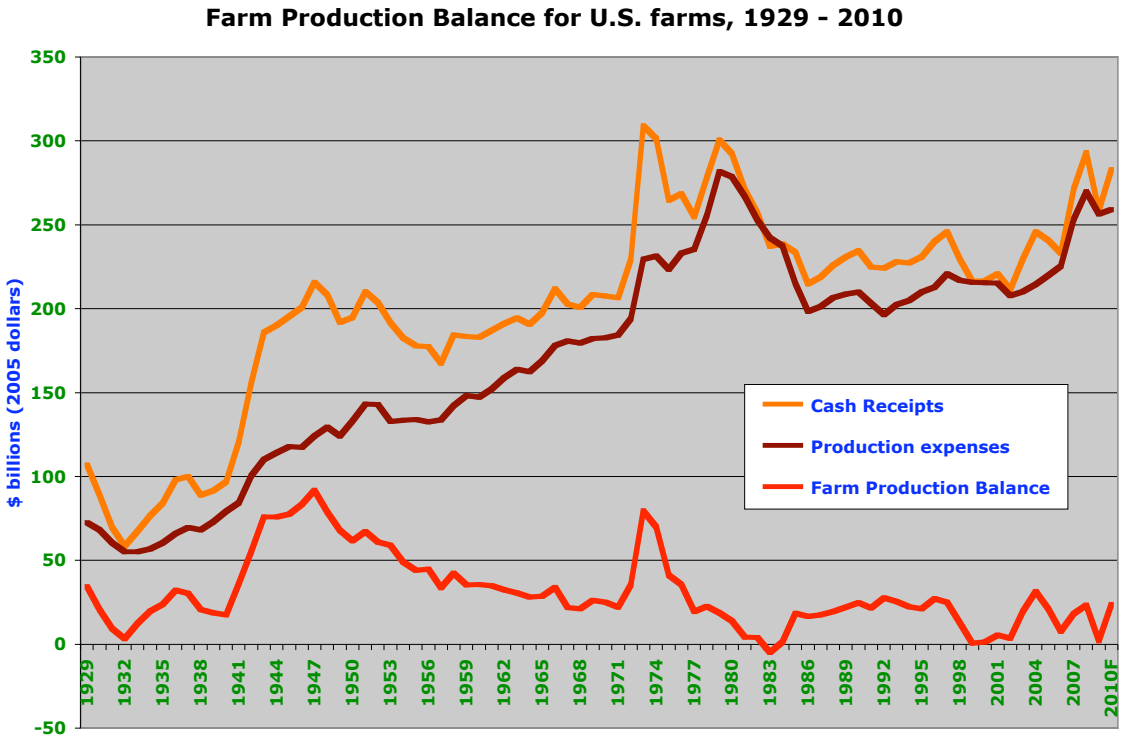

Chart 7 — Source: USDA / ERS

Note that American farmers earned $11 billion less by farming in 2008 (a relatively good year) than they earned in 1969. Net cash income from raising commodities was even larger in 1929 — after nine years of a farm depression — than it was in 2008. After the commodity bubble burst in 2009, net cash income from raising commodities fell to zero nationally, rivaling 1932, in the middle of the Great Depression.

Table 5: Ohio vegetable production in 1929

In 1929, Ohio farmers produced a wide variety of vegetables commercially, worth a total of $130 million in 2007 dollars — nearly the same as the value of the 2007 vegetable crop. Note that tomatoes and sweet corn are now both larger markets than they were in 1929 [compare with chart on page 17]. Seven percent of state farms were considered "self-sufficing" by USDA in that year, meaning they primarily produced for their own use.

product	1929 Sales $ millions (2007 dollars)
Tomatoes	27.8
Corn, sweet	19.3
Celery	12.1
Cabbage, Head	11.4
Onions, Dry	11.2
Vegetables, Mixed	10.5
Beans, Snap	6.5
Cucumbers & Pickles	4.4
Cantaloupes	3.7
Lettuce	3.2
Spinach	3.0
Asparagus	3.0
Peas, Green	2.7
Vegetables, Other	2.6
Carrots	1.6
Watermelons	1.3
Beans, Lima	1.2
Peppers, Bell	1.0
Radishes	1.0
Onions, Green	0.7
Beets	0.4
Turnips	0.3
Cauliflower	0.3
Squash	0.2
Pumpkins	0.2
Parsnips	0.1
Horseradish	0.1
Eggplant	0.1
Rhubarb	0.1
Parsley	0.0
Kale	0.0
Broccoli	0.0
Collards	0.0
Brussels Sprouts	0.0
Total	**130.3**

Federal government begins to play a major role

New Deal policy makers could not immediately grasp the importance of agriculture to the national economy in the first few years of the Roosevelt administration. They tended to look to urban financial experts, rather than farmers, to understand what steps should be taken to help rural America recover. Meanwhile, farmers kept producing since they knew people needed food, but consumers had so little money that stores were full of stock while people went hungry. Farmers resorted to destroying crops and livestock they could not sell. Due to the collapse of larger commodity markets, local communities in Ohio and elsewhere fell back on their own resources, often creating local market channels.

It was not until the third policy initiative, after two previous approaches had proven insufficient, that farmers prevailed upon FDR to support their production through nonrecourse loans[39], supply management, and a floor price. Federal lending performed a unique function at this time: it helped to restore the ability of the rural community to loan money to itself. Although for a few years, the government was the main source of farm income, it withdrew from that position as rapidly as possible, and individual lenders once again became the most important source of farm credit. Public policy was required to create the conditions that allowed individual lenders to build such a significant presence.

These measures slowly brought the farm economy back on its feet, yet actual recovery would not come about until the U.S. entered World War II. Not only did the War create new opportunities for farmers to sell food commodities, it also took farmers off the land to serve as soldiers; those who were lucky enough to remain were, once again, relatively more prosperous.

However, new farm programs posed some dilemmas for rural people. Since the new farm programs had been written by successful White farmers, it created a policy regime that favored White landowners. Black farmers, many of whom sharecropped, were seldom helped. Farm workers were overlooked. Women were not encouraged to own farms. Even White tenants or sharecroppers got little benefit.

Once again, the end of the War fueled exceptional economic times for U.S. farmers. Not only was the U.S. one of the few suppliers of agricultural commodities, whose fields were untouched by war damage, new technologies were creating phenomenal growth in production at just the moment prices rose. More farmers could afford tractors now; explosives factories adjusted themselves to producing fertilizers, because similar chemistry was involved. With high demand, production rose, and sales rose accordingly. This postwar era was the second most profitable era for U.S. agriculture of the past century.

Farm communities once supplied their own credit

Interviews with Midwestern farmers[40] showed that by 1950, the rural community was so prosperous it was its own source of credit. Farmers could start to farm by simply starting to farm, earning enough to make a down payment on a farm after only a season or two. Farm families also considered lenders parasitic; paying interest on loans might take money out of the community. "It was almost like a sin to borrow money" for a young farmer in that era; any farmer that was competent was expected to produce his way into prosperity. Nevertheless, bankers played a key role in deciding who was able to enter a given community

to farm, if they arrived without relatives or friends who would give them a loan. During this era, individuals were once again the main source of farm debt, accounting for over 40% of farm loans.

It is important for farmers to remember, however, that this prosperity was fueled by America's dominance of global affairs. Now seen as the rising power in the world, viewed as a protector of liberty after emerging victorious in the War, America was successful in both claiming prestige away from the United Kingdom and in keeping Soviet power in check. Through the Marshall Plan the U.S. was able to loan money to European nations that were rebuilding after the war, secure in the knowledge that most of this money would return to the U.S. as payments for grain. There were few other suppliers who could produce sufficient quantities.

Moreover, through economic ties and foreign aid programs America was creating financial channels that kept other commodity producers (in places like Africa and Central America, for example) from emerging as competitors. Rather, U.S. firms moved in to those developing regions, controlling farmland, dominating markets, and profiting from new farm production. Had America not been developing an empire of its own, it would not have been able to suck so much wealth out of other nations, and U.S. farmers would not have prospered so well. Today, after two decades of trade liberalization, the U.S. no longer commands such dominance of trade, and certainly does not control prices; in fact we now import soybeans from Brazil.

Over the next several decades, farm income began to steadily decline. As the farm balance sheet chart on page 26 shows, the net cash income from selling farm commodities eroded until 1973. Farmers were mechanizing more and more, and both productivity and farm exports grew, but many farmers were still leaving the land (often as they retired, or as a new generation looked elsewhere for professional work).

Oil crisis launches major shifts in agriculture

Indeed, 1973 was a critical year that altered the face of U.S. agriculture. In that year, the energy producing nations (OPEC) restricted oil production, which caused the price of oil to rise dramatically, to a value of about $17 per barrel ($40 per barrel at current prices). High prices and low supplies shocked the nation. Drivers might wait in line for two or three hours to wait to fill up their vehicles with gas — and might find the pump empty when they finally arrived to the head of the line.

Moreover, the U.S. was shipping billions of dollars to the Middle East to buy oil, but that area of the world was not spending those dollars in our economy. U.S. leaders came up with what they thought was a "win-win-win" situation for farmers, consumers, and our nation. Farmers, it was argued, could ramp up production if incentives were offered. The Soviet Union, it was known, had experienced some crop failures due to both production failures and a collapse in distribution channels. Moreover, the Soviets held bank accounts denominated in dollars. They could, in other words, buy wheat and corn from America using our own currency, bringing dollars back to the U.S. This would mean residents of the Soviet bloc could eat better, strengthening that government slightly, but strengthening our farms even more. All that needed to be accomplished was to persuade U.S. farmers to produce more.

This was not difficult; farmers typically have been very loyal to government requests. Secretary of Agriculture Earl Butz spoke to the media, urging farmers to "plant fence row to fence row." He promised "permanent export markets abroad" if only farmers would ramp up production. The new farmer, he argued, would be larger and more prosperous than ever before, based on export demand. "Get big, or get out of farming" became the mantra.

Lenders pressure farmers to take on more debt

In case this public outreach was not enough, tangible incentives crept into the lending process. As a journalist in the 1980s, I interviewed many farmers who had gone to their lender requesting, say, a $250,000 loan. By both public and private lenders, these families were told, "We won't loan you a penny less than $400,000." The pitch was made that only with new equipment, more land, and newer buildings could a farmer compete. Many farmers succumbed to the logic.

Those "permanent export markets" did not exist, which meant tragic consequences for U.S. farmers. In fact, by 1974, the Soviets were feeding themselves again, and did not need U.S. grain. Corn and wheat piled up at rural elevators. Not surprisingly, net cash income from selling farm commodities returned to 1972 levels. Yet now farmers were in a fundamentally different position. Having taken on new debt to expand their operations, believing they could repay these loans if farm-gate prices stayed high, they now began to realize that with surplus stocks and plummeting prices, they would be strapped to repay their debts. It took another decade for this to become obvious to the rest of the nation, in what we now call the 1980s debt crisis. At that time, farmers acknowledged they could not pay all of their debts, and bankers recognized that if they foreclosed on these farms, each bank would suffer deep losses of its own. Farmers and lenders agreed to write down debts to what a given farm could actually cash flow given current prices and markets. In many cases, this write-down was 15-20%.

Two vastly different approaches to federal policy

Looking at the chart of farm debt sources, it is clear that the intervention in the U.S. economy was far different in the 1980s than it had been in the 1930s. This time, the federal government became the lender of choice for several years, until it could place private banks in that position. Individuals no longer served as a priority credit source; in part because the farm economy now required more debt than most individuals could handle. In other words, by expanding production in such a way that larger farms and larger equipment was needed, the farmers had stepped beyond the power of the local community to serve as its own credit source. This expansion came with a notable decline in self-sufficiency for the rural community.

To understand this more precisely, let's begin by considering the interest payments made by U.S. farmers nationally since 1910 [see next page]. This is essentially money that leaves the farm sector, although in 1910 many of these interest dollars were reinvested back into the local rural economy. As we move to the right on this chart, more interest payments are made to external lenders, and are therefore less likely to be reinvested in the local community of the farm that took out the loan. This first chart shows how the expansion of the farm economy after World War II was intricately tied to increased farm debt.

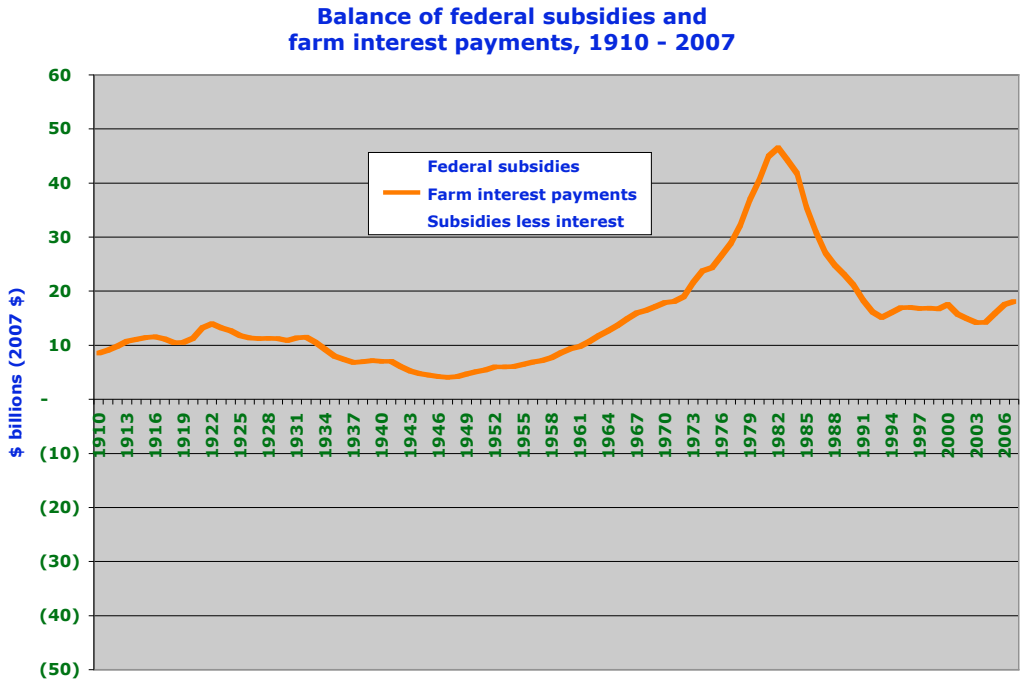

Chart 8 — Source: USDA Economic Research Service.

The next chart adds a line (maroon) showing the money that enters the farm economy through federal subsidies, which began in 1933. At first glance it is easy to see that this amounts to less than interest payments take away.

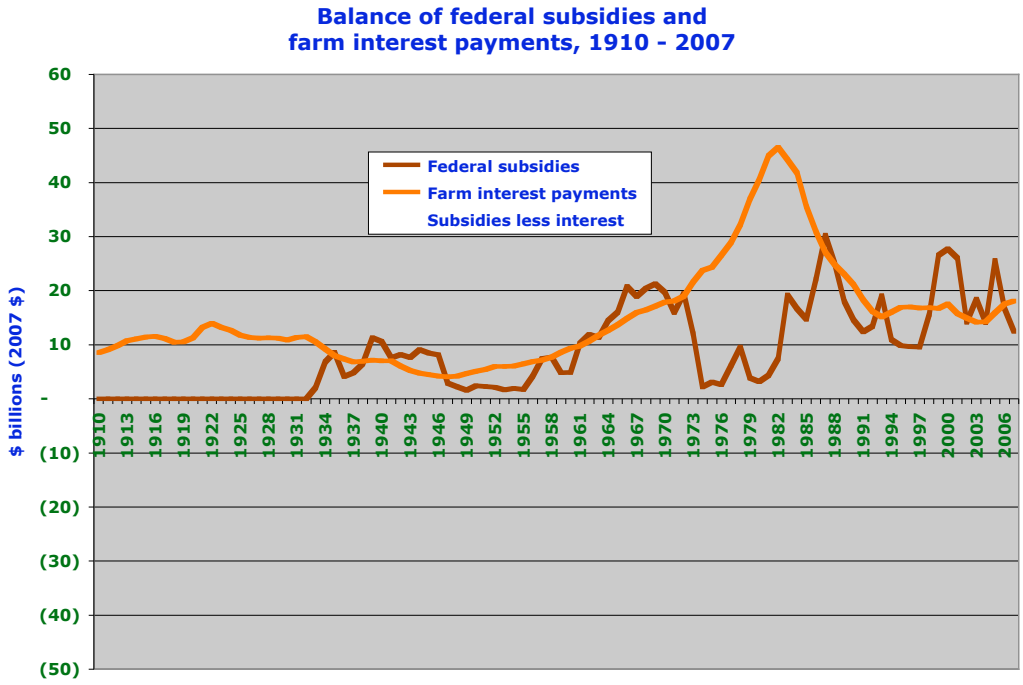

Chart 9 — Source: USDA Economic Research Service.

If we then subtract the money flowing out (interest payments) from the money flowing in (federal subsidies) we get the yellow line that appears on this chart: the net income to the farm sector from these two financial transactions. Whenever this line falls below zero, more money is leaving the farm sector than entering. In most of the years of the past century, this flow has been negative.

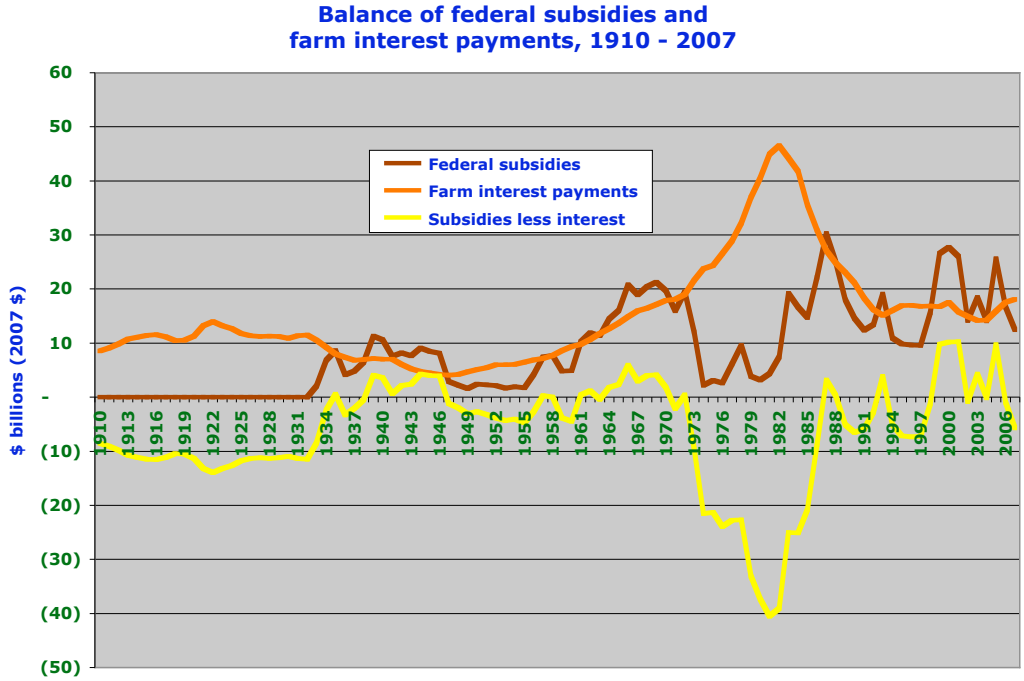

Chart 10 — Source: USDA Economic Research Service. Negative numbers on this chart represent flows of money away from the farm sector (federal subsidy payments less interest payments made by farmers).

The next chart will use this yellow line to track cumulative losses, shown on the next chart. Once again, negative numbers measure flows of money away from the farm sector to other sectors of the economy.

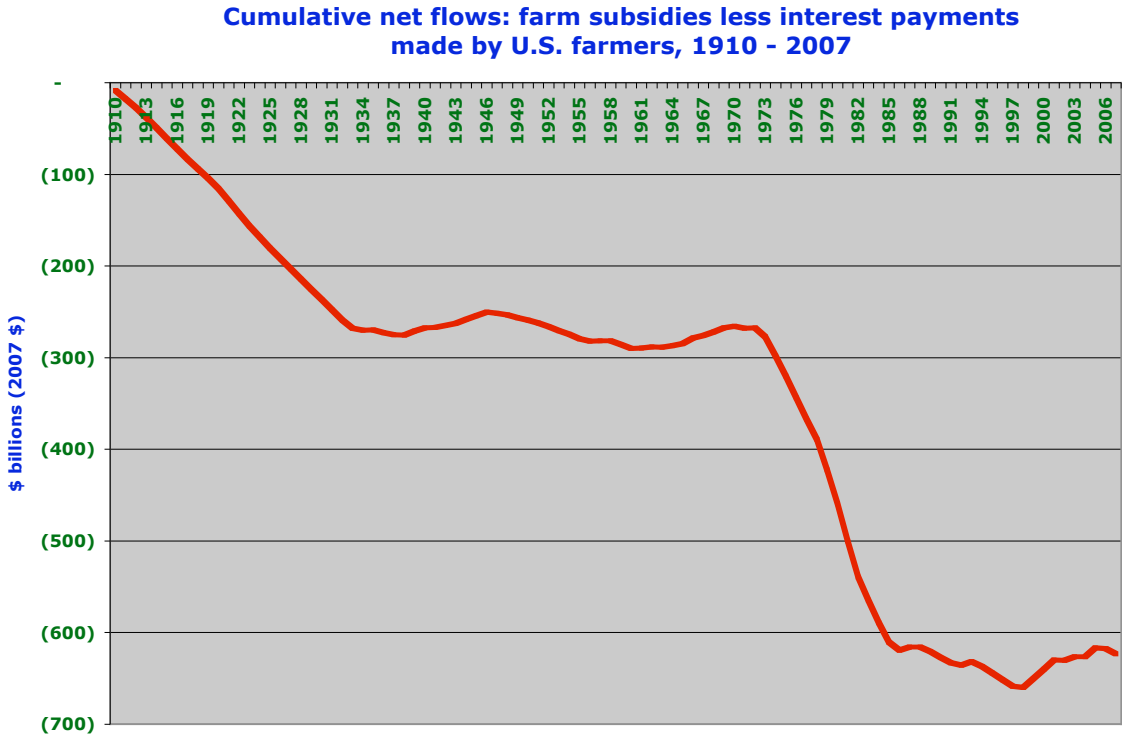

Chart 11 — Source: USDA Economic Research Service. Note that this chart shows the difference between federal subsidies given to U.S. farmers (which began in 1933; these represent flows of money into the farm sector) and interest payments made by U.S. farmers since 1910 (which increasingly represent flows of money away from the farm sector as lenders get larger). These are shown as negative numbers since they represent dollars flowing away from Ohio farm communities.

The chart above, then, shows the cumulative flows of money away from farm communities by looking at just these two financial items. As of 2007, farmers spent $600 billion more paying interest on farm debt than they had received from subsidy payments — an immense flow of resources away from farm country. These are shown as negative numbers since they represent dollars flowing away from U.S. farm communities.

Moments of balance

Yet even this sobering truth carries some moments of balance. Note on the chart above that from the birth of federal farm programs in 1933 up to 1973, the amount of interest farmers paid was reliably about the same as the federal payments that farmers received. This kept lenders happy, it kept input dealers happy, and it favored commodity buyers who could often buy farm products at less than their cost of production. Farmers were happy in the short term, too, since they could continue to farm. But overall, once farms got larger, after 1973, this stability was broken. Interest payments amounted to a transfer of wealth away from rural America and into the global financial sector. Federal subsidies (as cash for commodities) essentially reinforce the extraction of wealth from rural America, even if individual family farms succeed.

Without knowing these fundamentals, it is exceptionally difficult to create a healthier food system. Efforts to attach to a food system that is extracting resources from communities

brings complications for rural and urban communities alike. The question becomes, how does a community initiative partner with such systems without being caught up in further extractive relationships? How can local leaders be assured that growth in sales will actually bring long-term benefit for the community, rather than further isolating it? All of the practitioners interviewed in this report wrestle with such issues, whether they are aware of it or not.

1973, then, was a watershed year, in which the farm economy took a turn toward more effectively drawing wealth out of rural areas. Interest payments skyrocketed. Bankers gained new prominence as the lenders of choice. Movements of capital toward more centralized industries began to remove the production of beef and dairy from Ohio in favor of production of cash grains, and eventually — as in history — pork.

Recent Trends in Ohio Food and Agriculture

Over the past forty years, Ohio, as a farm state, has been caught in a conundrum. Population has increased, personal income has risen rather sharply, and food consumption has increased. Yet farmers' income has steadily eroded.

Farm income declines as food consumption rises

Not only are farmers and consumers disconnected from each other in economic outcomes, they have also become more and more disconnected physically as well. Until this disconnect is healed, it will be very difficult for Ohio to find balance in its food economy. In a rapidly changing system such as the food system, continual communication between farmers, consumers, and other stakeholders is essential, if the state is to adapt to changing conditions.

To learn more about this disconnect, so we can understand how to heal it, let's look at consumption and production patterns in Ohio over the past four decades.

Ohio households currently spend $29 billion buying food each year, including $17 billion to eat at home, and $12 billion eating out.[41] However, the vast majority of this food ($26 billion) is sourced outside of the state.

When all food uses are included, estimated food consumption in Ohio totals $44 billion. This includes food served at institutions, and food served to tourists or other non-resident consumers.[42] For the most part, this study focuses on the household market, identified in the paragraph above, but this chart is useful for showing long-term trends.

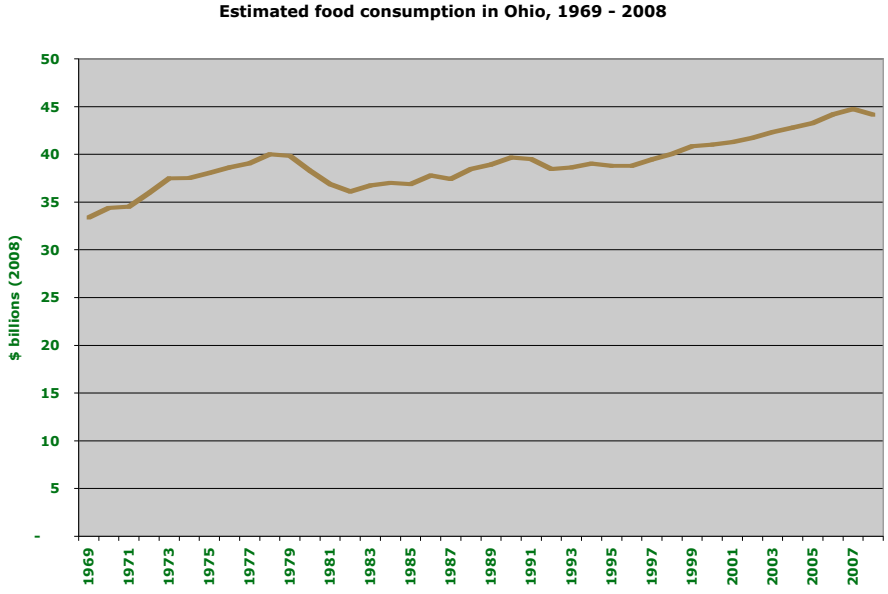

Chart 12 — Source: USDA / ERS (Note that the above data is based on national averages for food consumption, and is not specific to Ohio, but is calculated based on population changes for the state. Population in Ohio increased over this time, so this trend reflects rising population as well as increased value of food consumed. The above chart includes non-household food consumption such as dining services for colleges, hospitals, tourism and the entertainment industry.)

The previous chart shows that dollars spent on food consumption increased 32% from 1969 to 2008, once inflation was accounted for. During the same period, population increased 9%, personal income rose 71%, and net farm income fell 6%.

This can be viewed in better detail by looking at specific commodities.

Beef and Dairy

Note on the next two charts the sharp decline in numbers of cattle raised in Ohio for both beef and dairy purposes, even as dairy consumption increased and beef consumption slowly decreased.

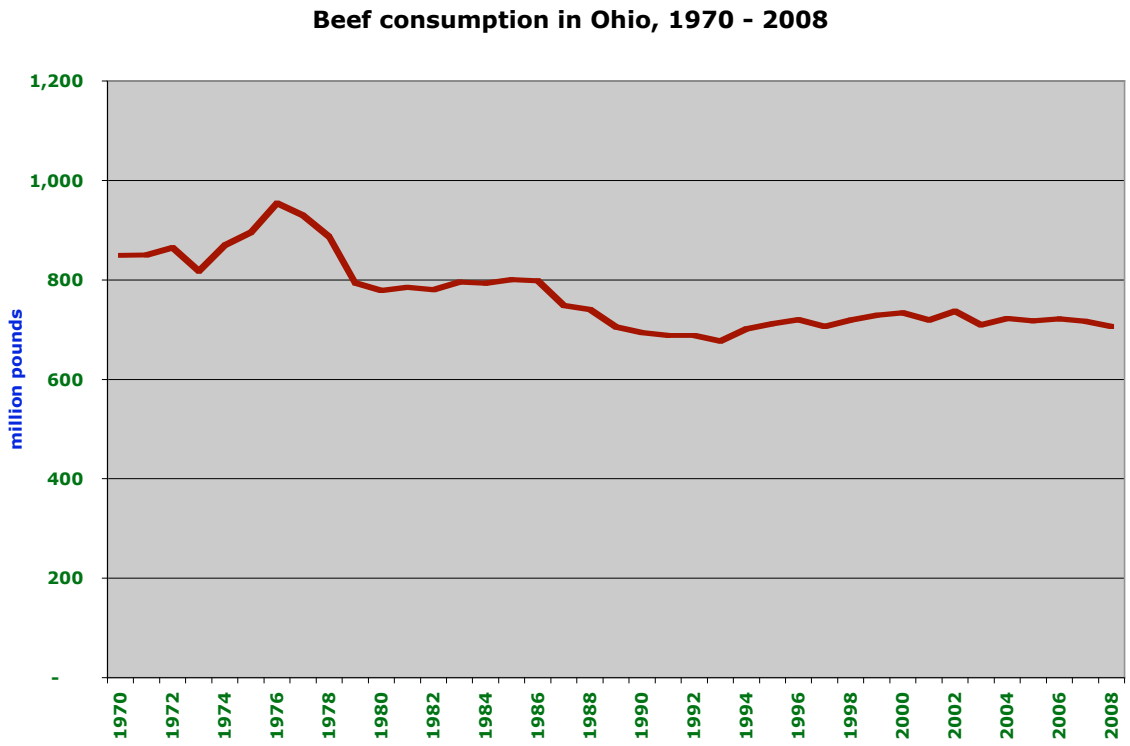

Chart 13 — Source: USDA / ERS (Note that the above data is based on national averages for beef consumption, and is not specific to Ohio, but is calculated based on population changes for the state. Population in Ohio increased over this time, so this trend reflects declining per capita consumption.)

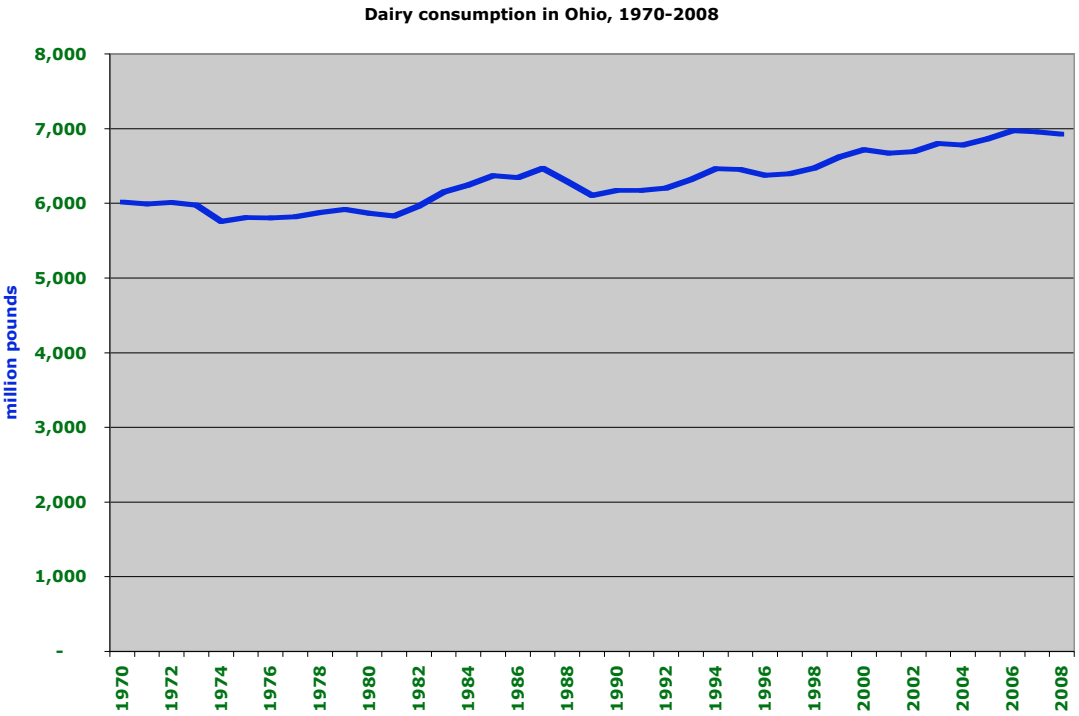

Chart 14 — Source: USDA / ERS (Note that the above data is based on national averages for dairy consumption, and is not specific to Ohio, but is calculated based on population changes for the state. Population in Ohio increased over this time, so this trend reflects fairly steady per capita consumption.)

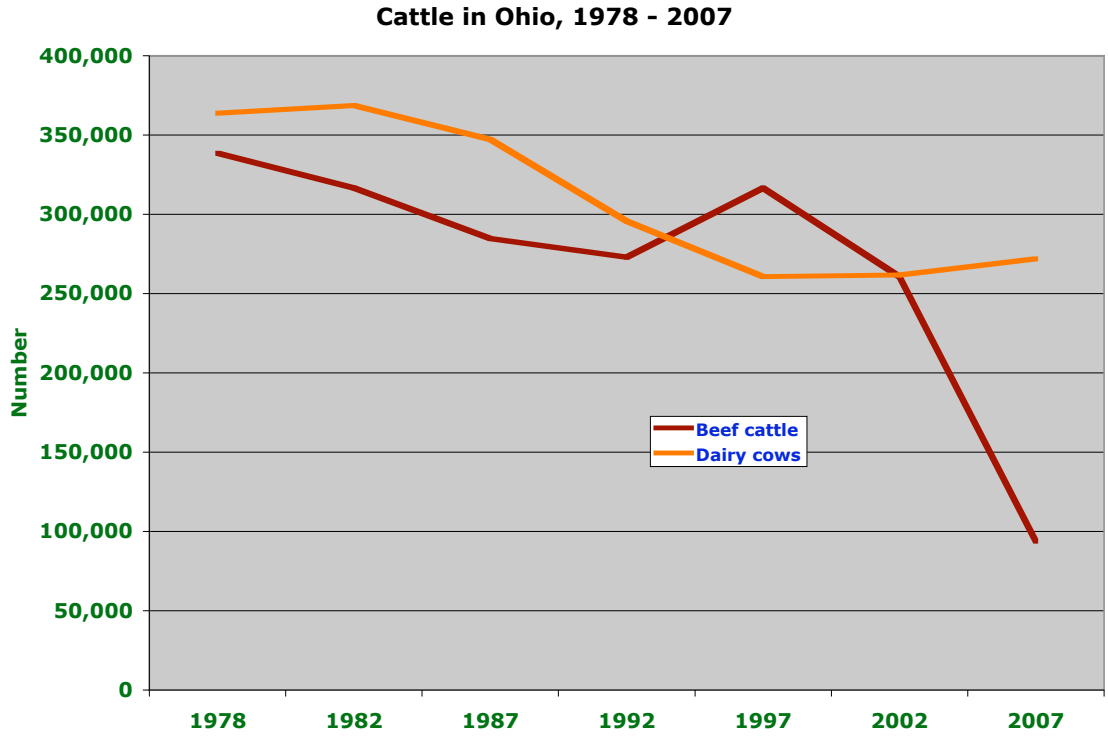

Chart 15 — Source: USDA Census of Agriculture.

These trends suggest that production of cattle and dairy cows has tended to leave the state, removing one of the fundamental capacities that farms once held for producing their own fertility.

Pork

While pork consumption held steady, at 1970 levels, hog and pig production rose after 1997, as the next two charts show:

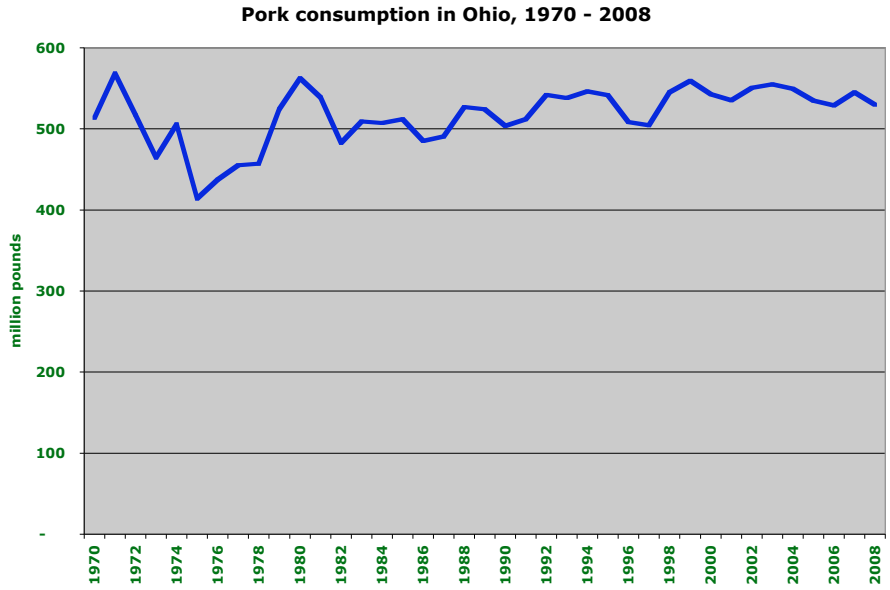

Chart 16 — Source: USDA / ERS (Note that the above data is based on national averages for pork consumption, and is not specific to Ohio, but is calculated based on population changes for the state. Population in Ohio increased over this time, so this trend reflects fairly steady per capita consumption.)

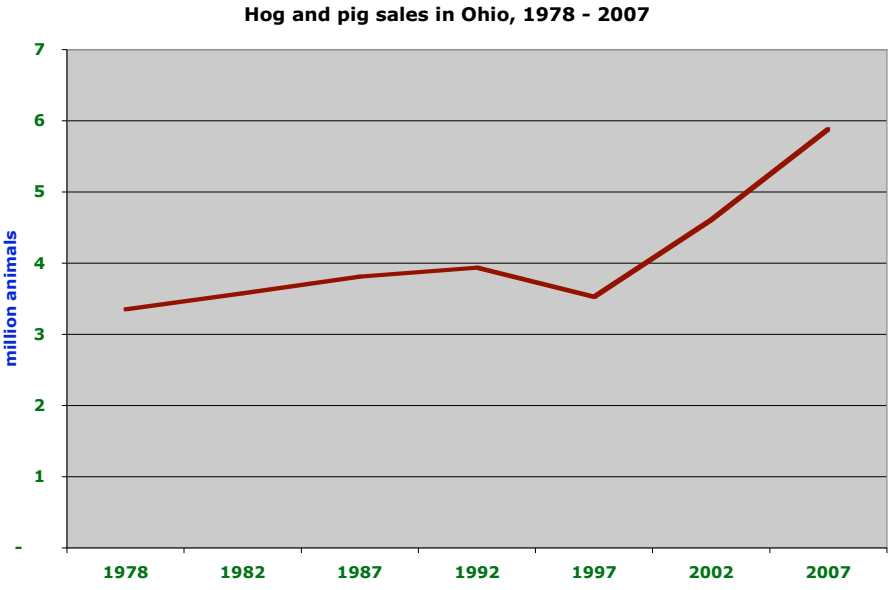

Chart 17 — Source: USDA Census of Agriculture.

Poultry

Both poultry consumption and production increased over the past 40 years. In-state production was roughly one-sixth of Ohio consumption:

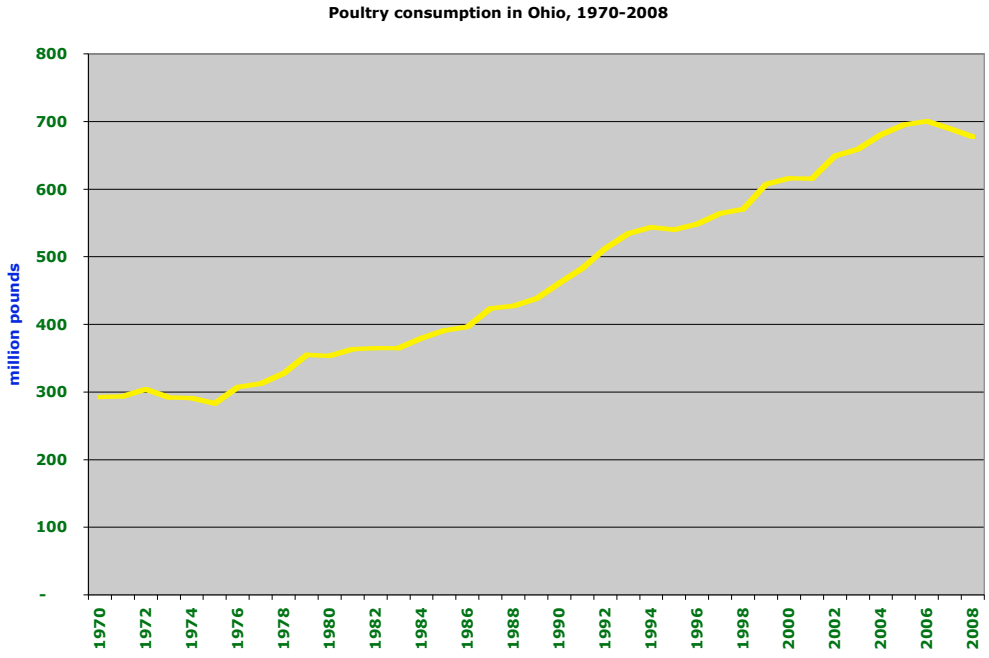

Chart 18 — Source: USDA / ERS. Based on national average consumption (see previous charts for more detail).

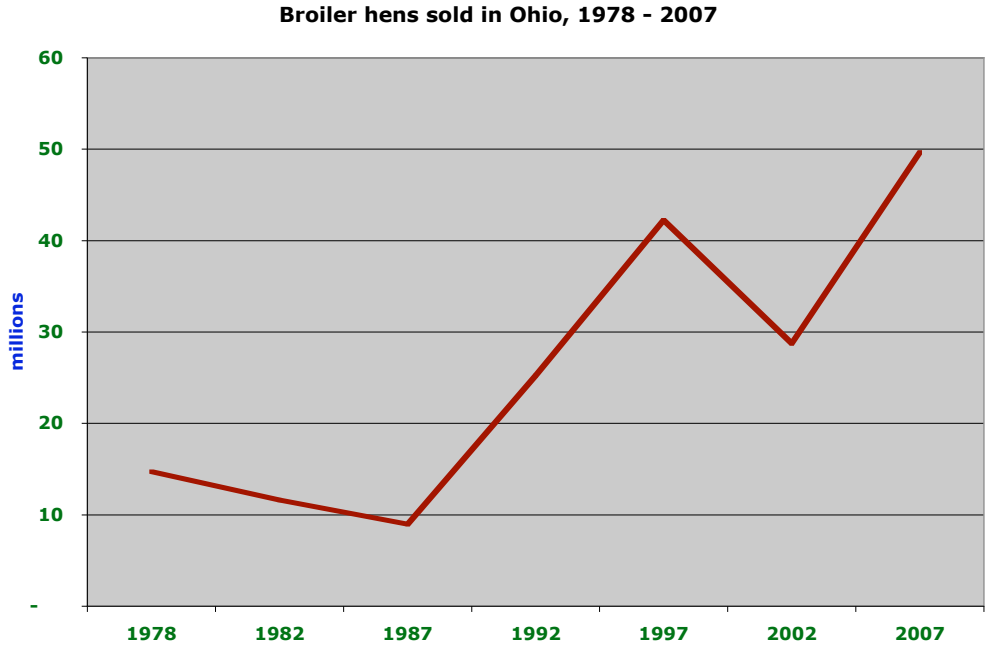

Chart 19 — Source: USDA Census of Agriculture.

Commodity grains

Corn and soybean production generally trended upward:

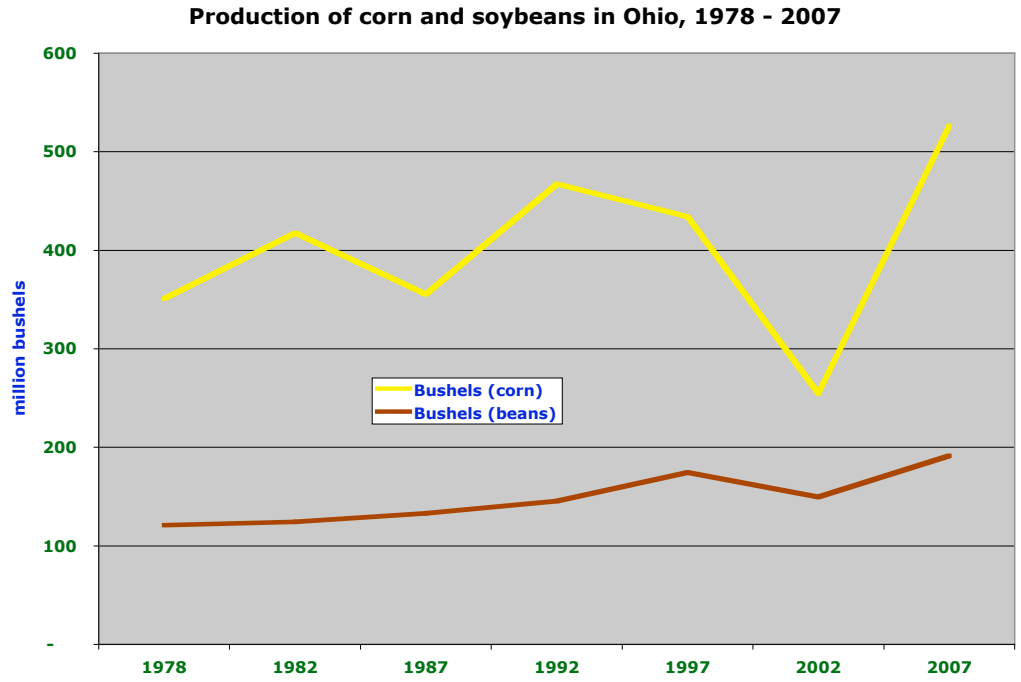

Chart 20 — Source: USDA Census of Agriculture.

Yet the number of farms producing corn fell relative to production:

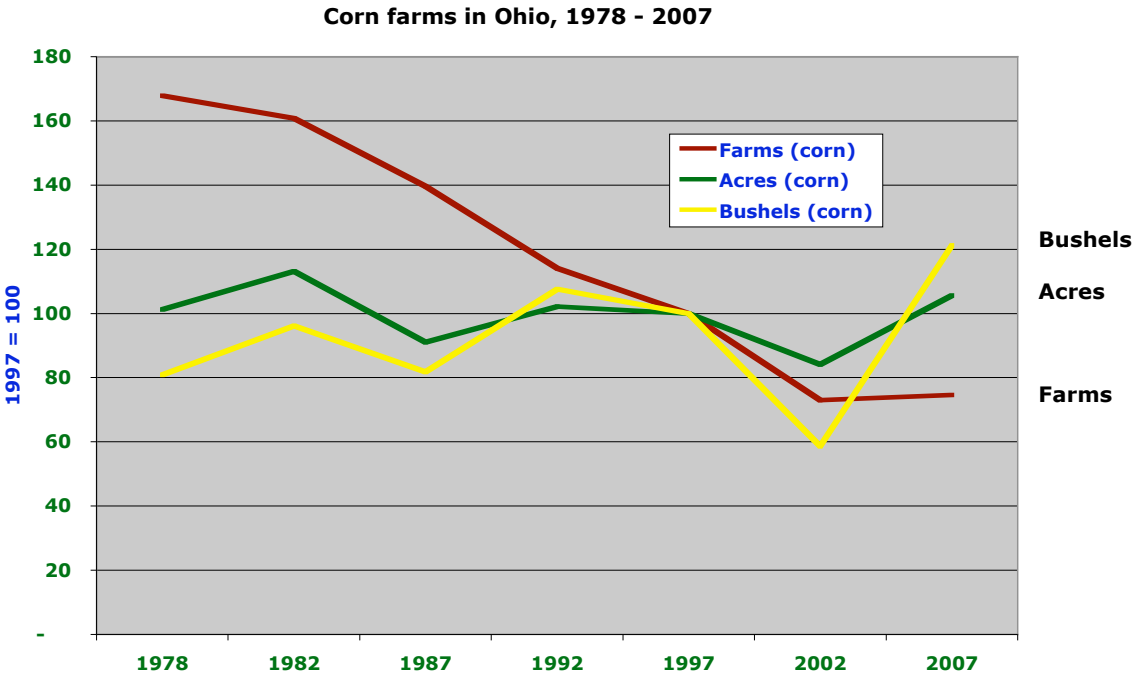

Chart 21 — Source: USDA Census of Agriculture.

Similar trends occurred in the soybean industry:

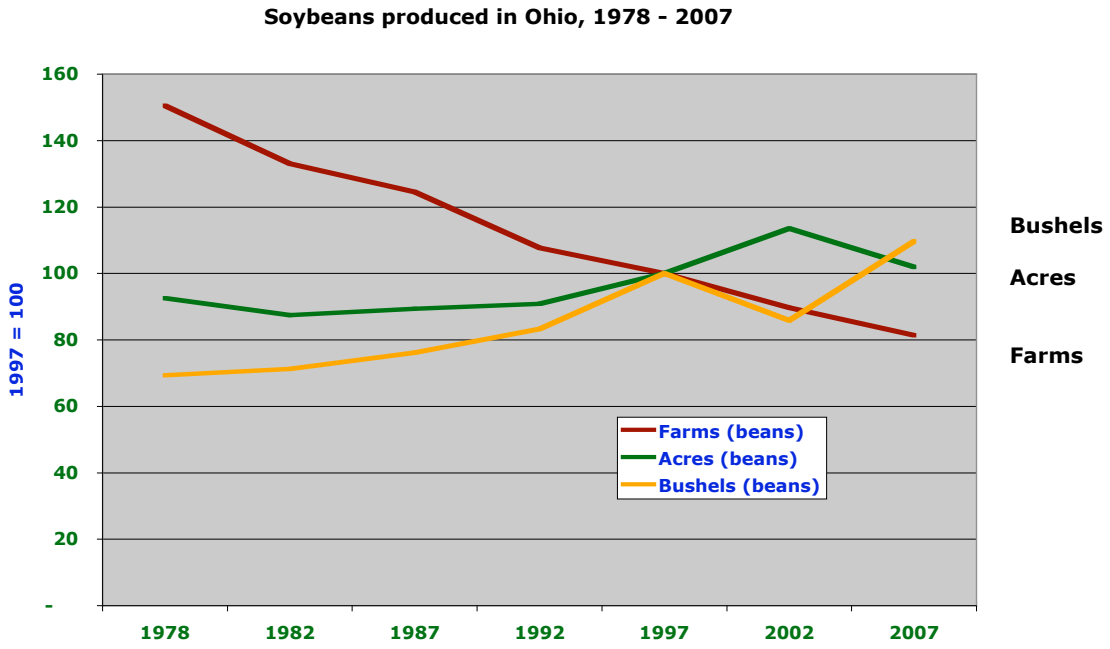

Chart 22 — Source: USDA Census of Agriculture.

Value of home consumption also declines

While total food consumption has risen, the value of farm production in Ohio has fallen since 1949, led by declines in the cattle industry. Farm families also produce less of the food they need for their own home use:

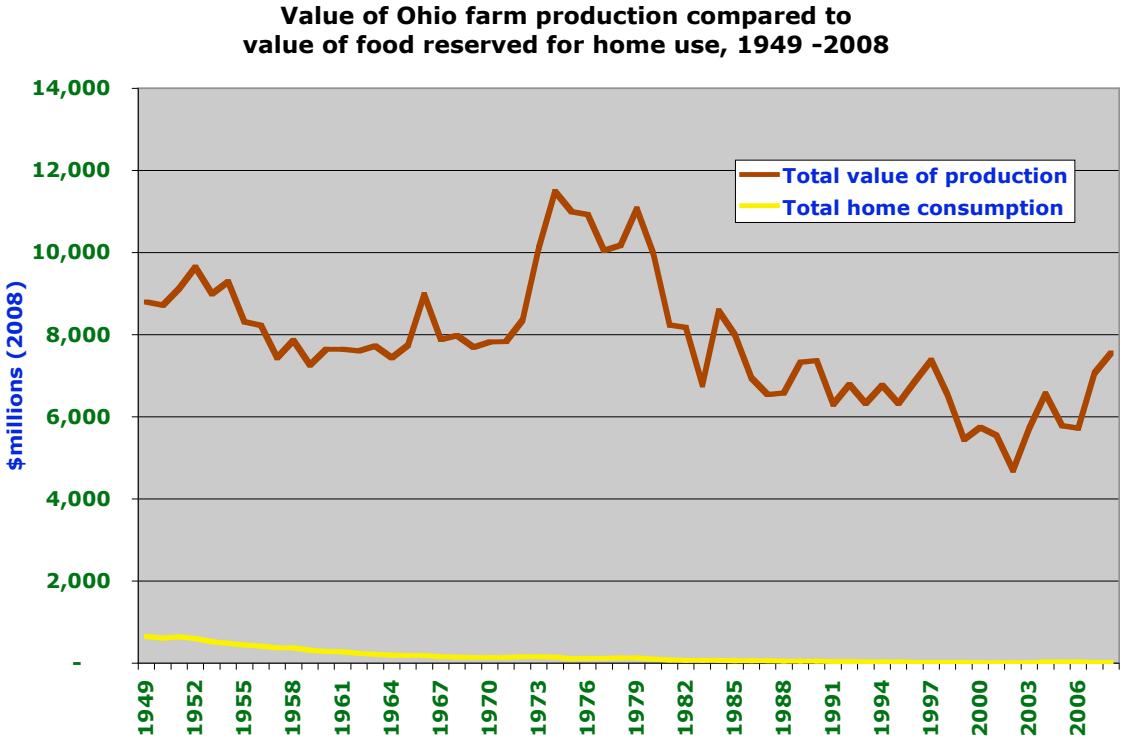

Chart 23 — Source: USDA ERS. "Home consumption" in this table indicates food that farm families produce for themselves to eat. This is different data than on Chart 12, which shows consumer food purchases.

Yet as Ohio farmers, like others in the U.S., gave up their interest in feeding themselves, they were also buying into a national industry that was rewarding manufacturers better than the farmers that produced the raw materials needed to accomplish the manufacturing.

Profits of food corporations compared to farm profits

The next chart shows how corporate profits in food manufacturing compared to profits earned by farmers themselves.

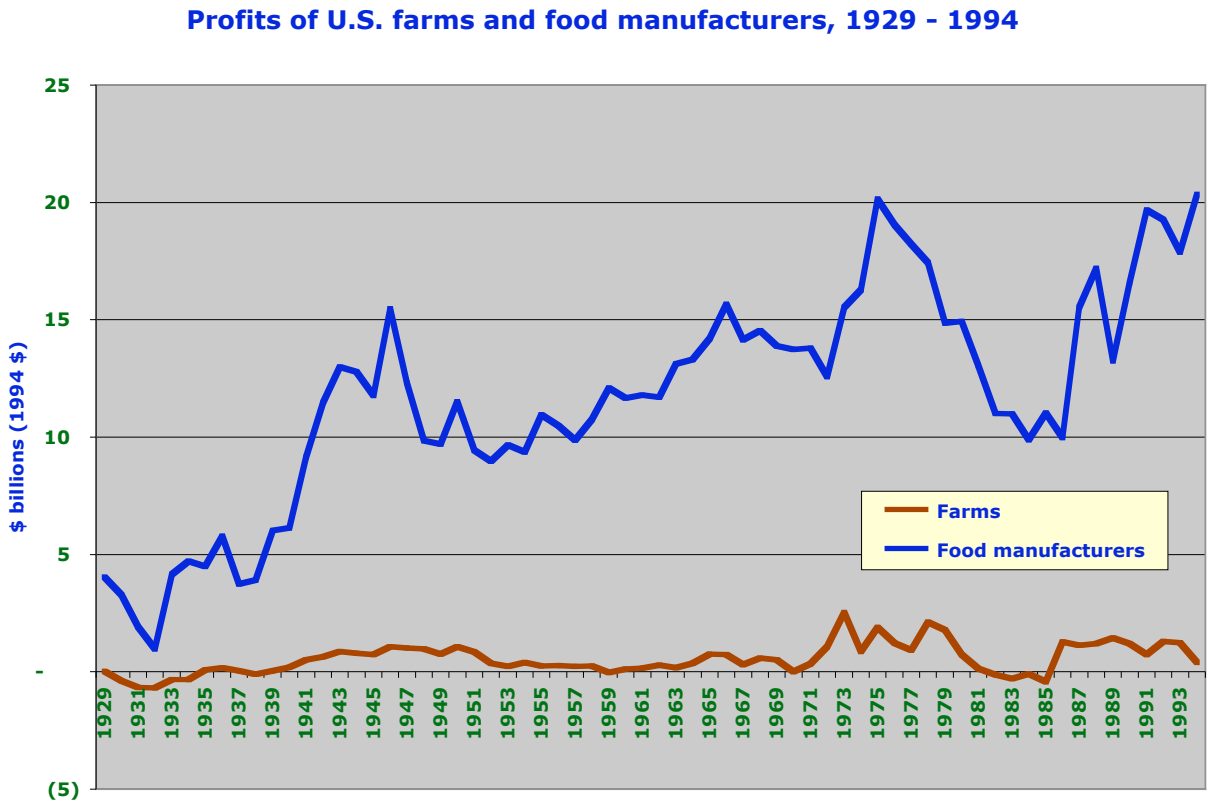

Chart 24 — Source: Bureau of Economic Analysis

The value of beef and dairy production has fallen since 1949, as the next chart shows. Moreover, despite recent increases in poultry production, sales are still below 1949 levels, once dollars are adjusted for inflation.

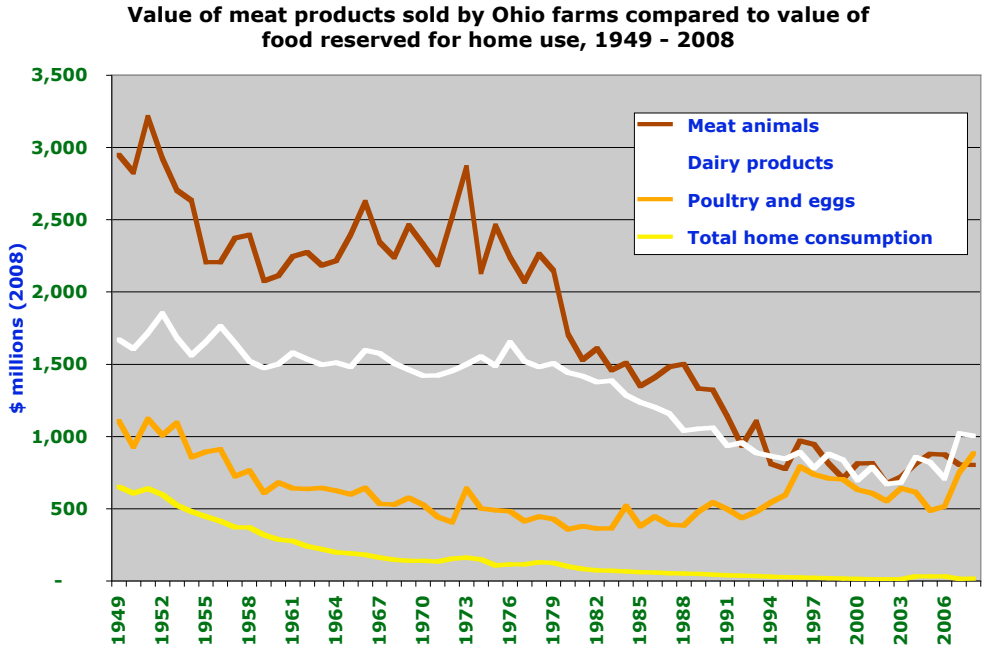

Chart 25 — Source: USDA ERS

Note: Ohio Department of Development reports that Ohio exported $49 million of meat to foreign nations in 2010.[43] *"Total Home Consumption" on this chart refers to food raised by farm families for their own household use.*

Although farm families had once provided themselves with considerable food for their own home use, this usage declined steadily from 1953 on, falling well below commercial sales of fruit and vegetables. Note that from 1949 to 1958, as the next chart shows, farm families' home consumption was valued at more than commercial sales of fruits and nuts.

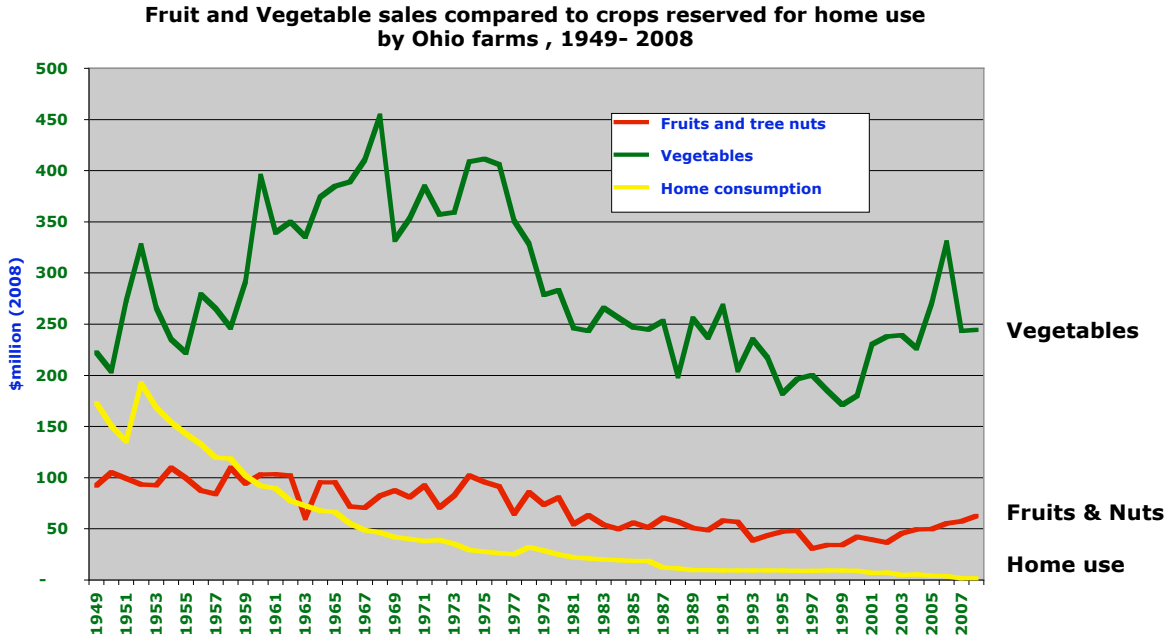

Chart 26 — Source: USDA / ERS

Note that vegetable sales shown here are higher than shown in previous charts. This appears to be because potatoes are included in the chart above, and not in the others. Ohio Department of Development reports that Ohio exported $38 million of vegetables abroad in 2010.[44] "Total Home Consumption" on this chart refers to food raised by farm families for their own household use.

Aggregating these components into whole

Yet the charts above cover discrete segments of the Ohio food industry, rather than giving an overall view of the farm economy. To present this overview, let's examine data from the Bureau of Economic Analysis (BEA), a division of the Census Bureau, which compiles data covering local and regional economies across the U.S. BEA data are a bit more pessimistic than data from USDA, apparently because their focus is on cash flows within geographic regions, rather than on farms and agricultural commodities. BEA also accounts for depreciation in a more comprehensive manner than does the ERS, according to BEA officials.

The following chart shows BEA calculations of total cash receipts earned by Ohio farmers selling farm products, the production costs associated with those products, and the difference (cash receipts less production costs), expressed as the "Farm Production Balance:" that is, the balance of income earned (or lost) from producing and selling farm commodities.

Note that the chart below does not show the value of federal subsidy payments to farmers, nor does it account for changes in value of farm inventories, or capital equipment. Farm-related income (such as income from renting land or doing custom work for neighbors) is

not included. Nor is off-farm income included. This chart shows merely the backbone of the farm economy: whether farmers earn or lose money by producing crops and livestock.

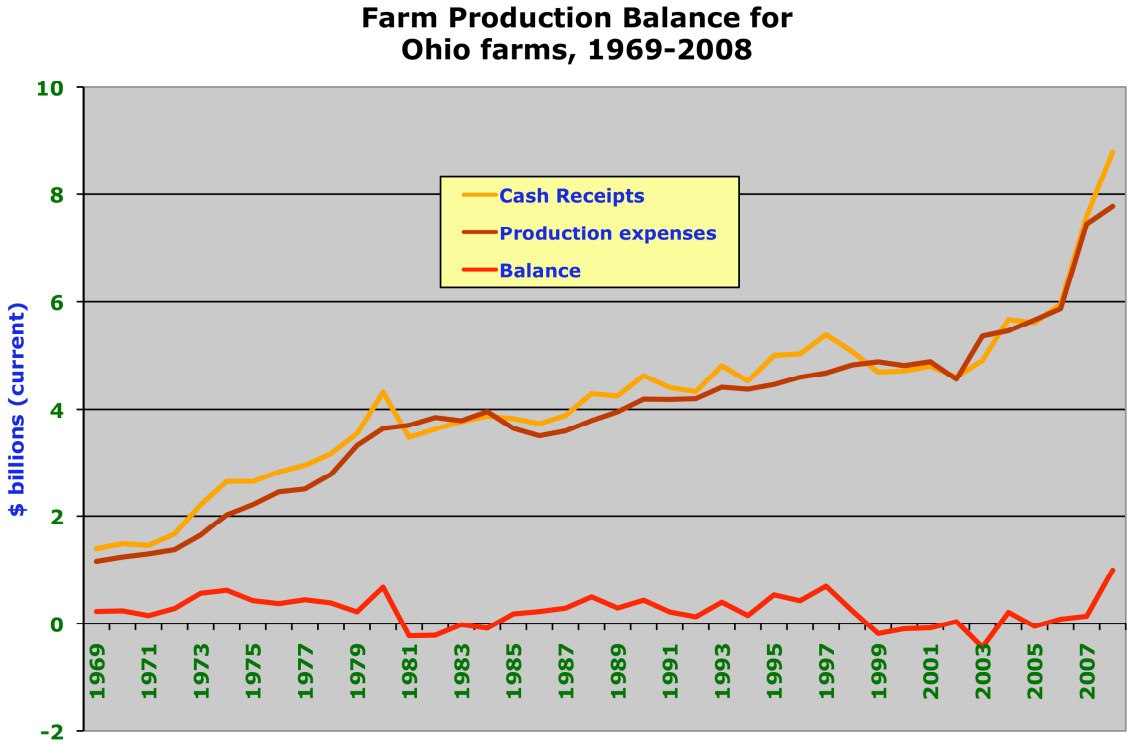

Chart 27 — Source: Bureau of Economic Analysis. Data in dollars current to each year shown. Note that 2008 is the most recent data available.

The orange line on this chart shows that Ohio farmers have experienced considerable growth in sales over the past 40 years, with cash receipts increasing more than six-fold in that period, from $1.4 billion in 1969 to $8.8 billion in 2008. This is due to increased production, greater access to markets, more productive use of land, labor and materials.

This growth in sales was relatively steady from 1969 to 2006. Then the rate of increase became dramatically higher from 2006 to 2008. This was fueled by speculation in the grain commodity trade, as investors moved out of housing loans and sought more lucrative investments elsewhere. This was also due to a temporary rise in the price of corn as ethanol markets heated up. These price pressures, however, also produced food shortages in developing nations. As noted above, national data available for 2009 show that these speculative pressures broke in 2009, leading to a collapse of net income in that year. Nationally, the farm production balance rebounded in 2010, falling just below the 2008 level after inflation is taken into account.

For all of the strength of commodity markets in recent years, however, BEA data show that expenses (maroon line) have kept up with sales. In fact, most farmers can tell stories about how, once farm-gate prices began to rise, input dealers began to charge more because they felt farmers had more money to spend.

The red line (farm production balance) shows that basically, despite expanding markets, net cash income from farm production has essentially stayed the same since 1969. With the exception of 2008, when speculation took hold, farmers are no better off financially than they were 40 years ago. Moreover, as grain prices rose, livestock producers felt the squeeze of higher input costs.

Over those four decades, farmers have doubled productivity. Tragically, this suggests that the extra effort farmers have undertaken to assume more debt, work more efficiently, and produce more has not brought them financial rewards. Rather, that extra value created by farmers has been realized by other stakeholders in the food system.

Yet this is also an incomplete look at the farm production story. As it turns out, the value of the U.S. dollar today is one-fifth the value it held in 1969, due to increases in the cost of living. It is important to adjust the data from this first chart for inflation to show how farm income and expenditures have fared as the value of the dollar changed. Accordingly, the next chart shows the same data, but adjusted for cost of living increases. This is a better measure of how hard a farm family has to work today to earn a dollar, compared with the effort needed forty years ago.

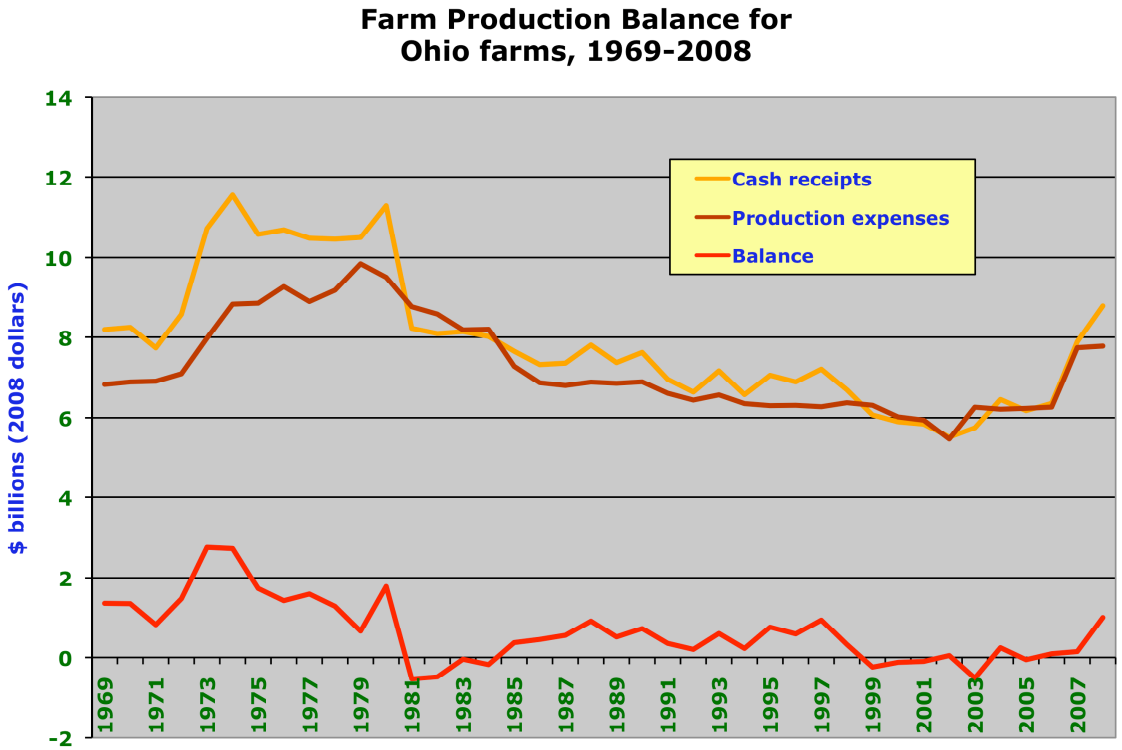

Chart 28 — Source: Bureau of Economic Analysis. Data in 2008 dollars. Note that 2008 is the most recent data available.

After this adjustment for inflation, very different patterns emerge from the same data. For one thing, it is clear (from the maroon line) that farmers held their costs lower each year from 1979 to 2002. This shows that farmers are exceptional managers, yet tragically, it is

also an indication that farmers have gone out of business. Production costs began to rise as soon as farm-gate prices increased.

The orange line shows that farm cash receipts actually peaked in 1974, during the grain-for-oil trade described above. There was a secondary peak in 1980, related to later sales of grain to the Soviet Union. Even the relatively good year of 2008 was far below earlier levels.

Moreover, the adjusted chart shows that the farm production balance was actually $354 million lower in 2008 — one of the best years in memory — than it had been in 1969, before the OPEC era. Since 1980, net cash income has hovered perilously close to zero in most years. Nevertheless, farming has been an important income generator for the Ohio economy, creating a total surplus of $8.5 billion dollars from 1980 – 2008 — an average of $300 million per year. Yet that amounts to only $4,000 per farm.

Moreover, this chart shows quite graphically how the prosperity generated in the grain-for-oil days, with surpluses of nearly $3 billion *per year* — were followed by a collapse of farm income as farm-gate prices fell, and farmers realized they had loans they could not pay back. The overall result of two prosperous years in the 1970s was actually further decline. Yet this was about the only point in the past four decades in which farmers fared very well.

Economic structures draw wealth away from Ohio communities

Clearly, something is at work in broader economic structures that draws wealth away from farmers and farm communities.

To understand more about this, let's look at the same time period, but looking only at the income side for a change. The next chart shows cash receipts for livestock and for crops.

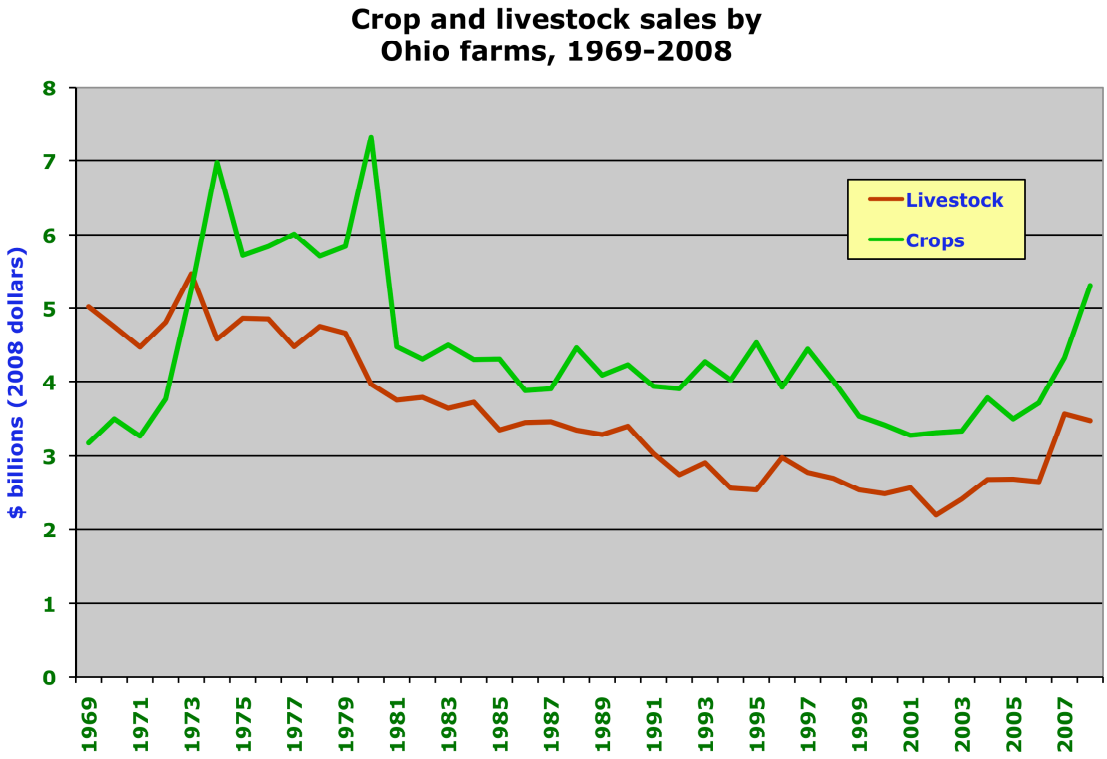

Chart 29 — Source: Bureau of Economic Analysis. Data in 2008 dollars. Note that 2008 is the most recent data available.

Notice that income from selling crops has varied a great deal from year to year, but essentially is no higher now than it was in 1969. What has dramatically changed is income earned by selling livestock and milk, which fell from $5 billion in 1969 to $3.5 billion in 2008. This decline in sales reflects the fact that some farmers have left farming altogether, some have abandoned their efforts to produce livestock or milk, and also that farm-gate prices have tended to fall.

These data suggest that if Ohio wants a strong agricultural economy, it should replenish the ability of livestock and milk producers to make a good living selling their commodities.

Three different types of farm income are shown on the next chart:

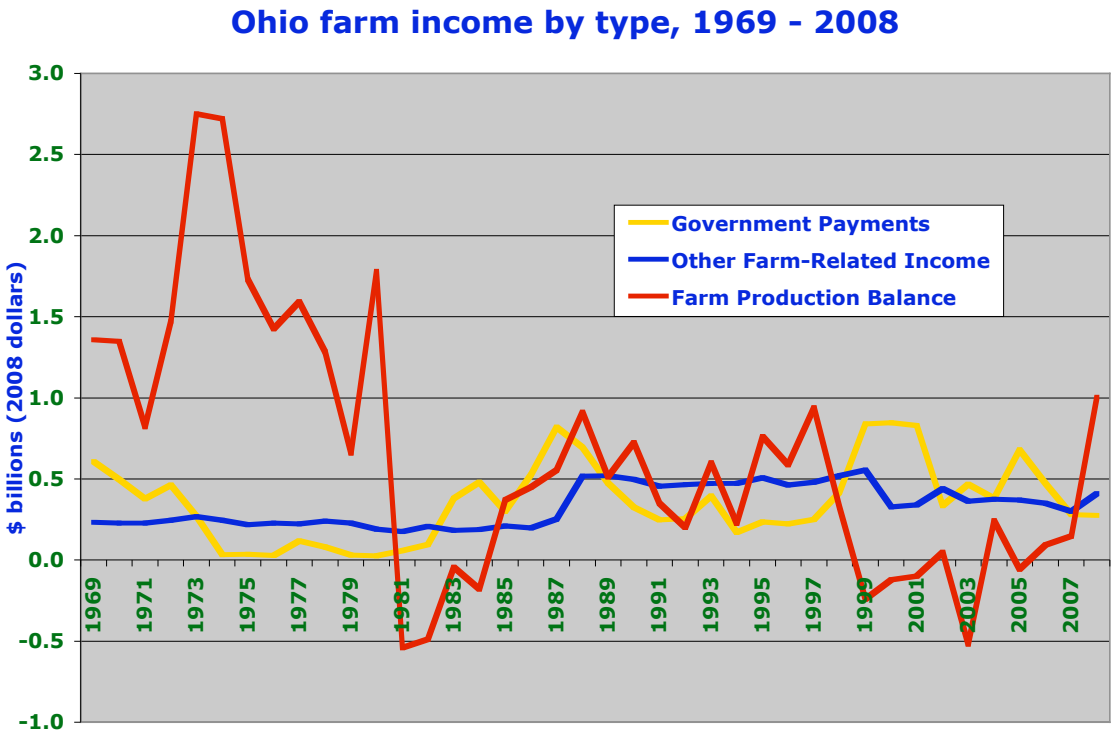

Chart 30 — Source: Bureau of Economic Analysis. Data in 2008 dollars. Note that 2008 is the most recent data available.

Federal programs become a major source of farm income

The red line on this chart is the same as on the previous chart showing the farm production balance, but looks more jagged because the scale is smaller. Note that income from farm production is the most erratic form of farm income for the farmer. Farm-related income is fairly steady, as farmers have realized they can often make more money by renting out land, than they earn through selling their production. The chart also shows that from 1999 to 2007, federal farm payments were the largest source of income for farmers — a clear sign that Ohio farming has become dependent on federal programs.

It is also possible, using BEA data, to break down farm production expenditures in a similar manner, showing what farmers spend their money upon as they produce. That chart is next.

Farm production expenses

Note that the largest single expense item for Ohio farmers is their purchase of $1.2 billion of fertilizer and lime. These costs increased dramatically in recent years as input dealers raised their prices, and farmers planted more corn. Feed costs and livestock purchases rank second and third, but both tended to decline as farmers got out of the business of raising livestock from 1979 to 2003. Costs have spiked in recent years, outpacing cash income from livestock and milk sales. Seed costs have risen steadily.

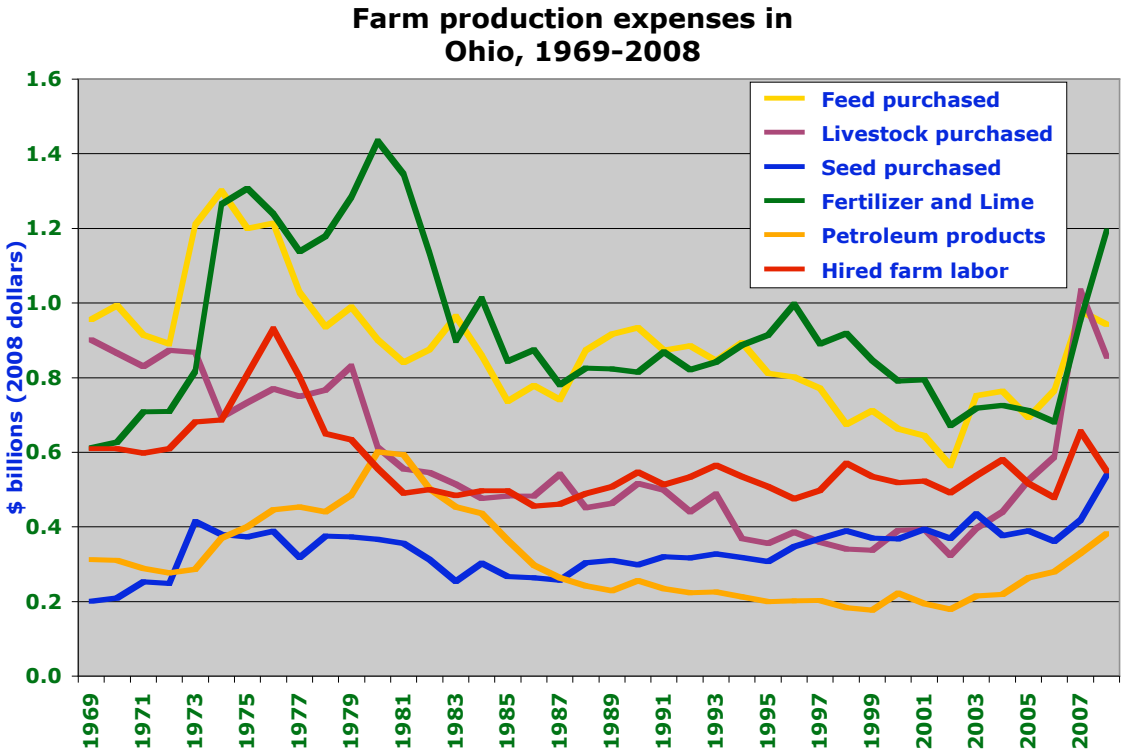

Chart 31 — Source: Bureau of Economic Analysis. Data in 2008 dollars. Note that 2008 is the most recent data available.

Yet what is most telling about this chart is not the individual lines. Rather, it is the source of these inputs. Most of the fertilizers come from sources outside of Ohio. Increasingly, feed, seed, and livestock are sourced from outside, as well. Much of farm labor is local. Very little of the oil used in farming is produced in Ohio.

All told, a very conservative estimate using these data suggests that Ohio farmers spend more than $4 billion buying farm inputs that are sourced outside of the state. It should be emphasized that this is an estimate, since no comprehensive data source identifies the source of farm inputs. However, it is a cautious estimate, so it may in fact understate the expenditures that state farmers make outside of the state.[45]

Even as a cautious estimate, however, this is a substantial flow of money away from Ohio.

Debt is still a key indicator

Since credit has been a critical issue for Ohio farmers since the first settlers arrived, it is also important to hone in on just one of these production expenses: credit. As recently as 1971, individuals were the primary source of farm debt in Ohio. In 1972, however, individual debt was supplanted by federal lending agencies, which became the largest source of farm credit until 1987, when commercial banks ranked first. In 2001, federal agencies once again became the primary source of farm debt, with 40% of all debt.

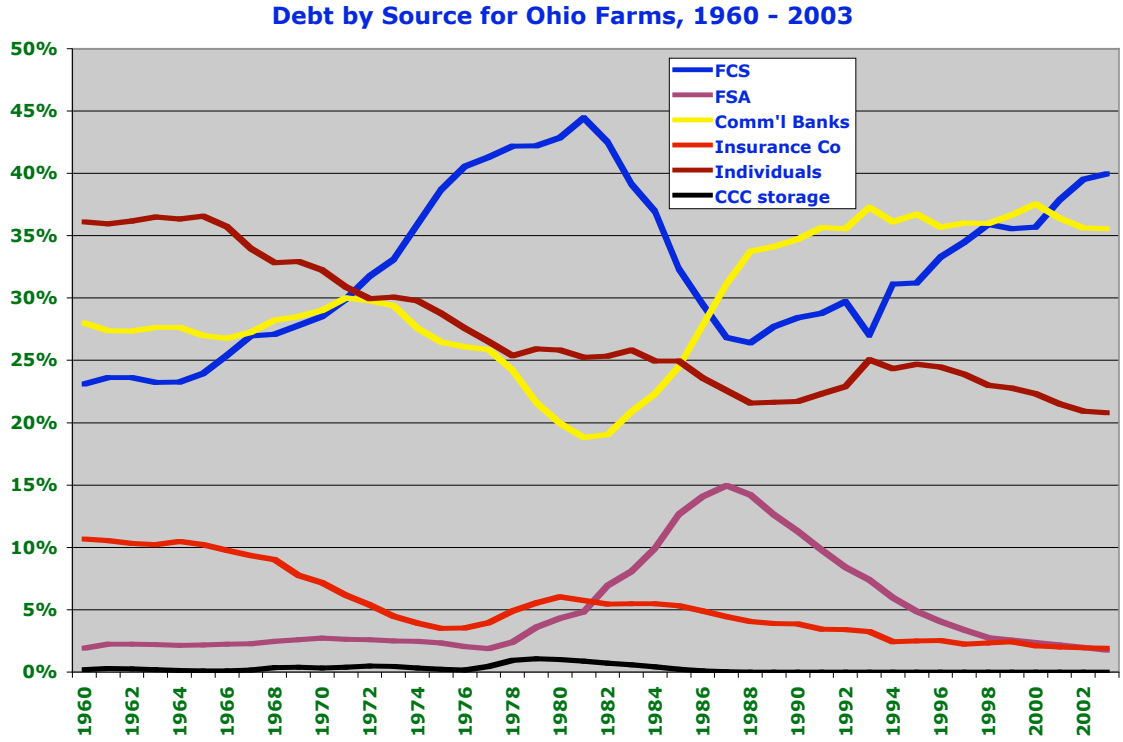

Chart 32 — Source: USDA / ERS

When farmers paid interest back to individuals who were members of the farm community, or to local lenders, those interest payments tended to recycle through the community itself as they were re-invested. The more that external lenders, including larger commercial lenders or secondary markets, collect interest payments, the more money is drawn from rural communities.

Paying interest on farm debt has been a significant burden to Ohio farmers. Yet it is only one of many expenses that state farmers take on to produce commodities. Many of these inputs are produced outside of Ohio. Thus, even when farmers are successful in selling their products at a profit, the economy of the state as a whole may suffer.

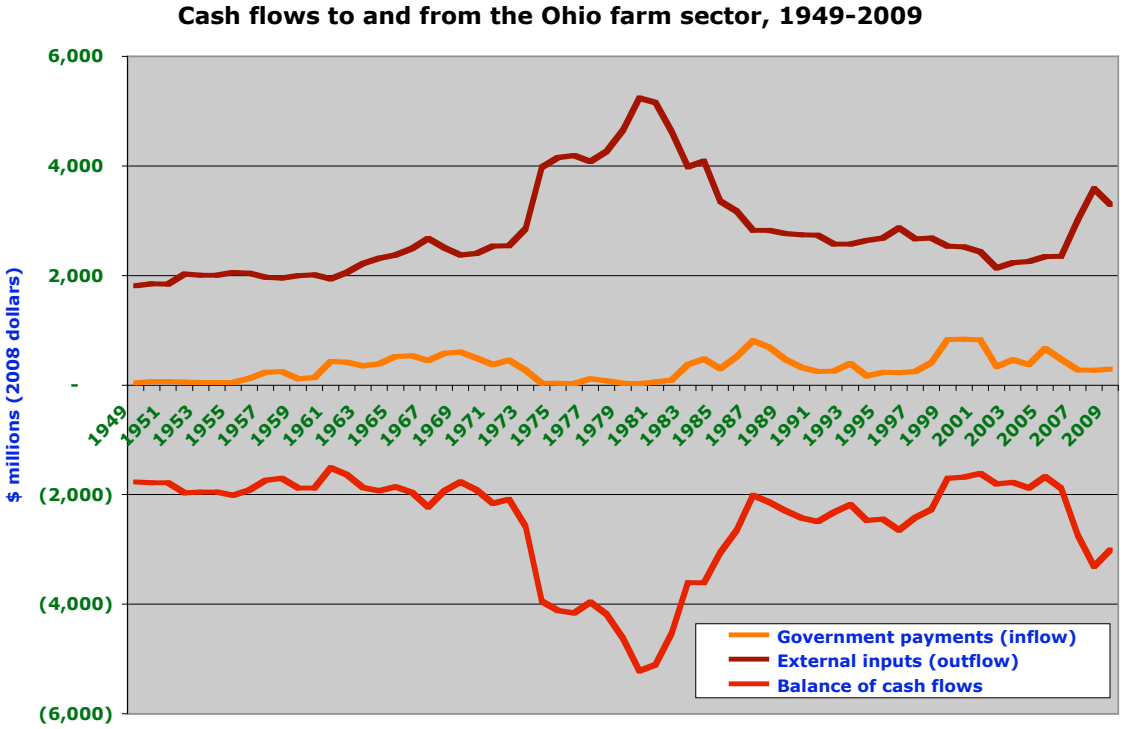

Chart 33 — Source: USDA / ERS with calculations by author. Note that this is also only a partial tally of money flows away from the farm sector, and of course does not include cash receipts earned by farmers. While some of the money spent on external inputs remains in the local community (for example, a gas station may retain two cents of the cost of a $3.50 gallon of gasoline, and some overhead costs are paid to local vendors) the assumption of this analysis is that these are balanced by internal purchases that also result in external spending (for example, when a farmer purchases feed from a local dealer, external seed dealers, oil companies, and lenders also gain income).

Looking at this data cumulatively, on the chart on next page, we find that Ohio farmers spent $152 billion *more* paying for external inputs than they received from farm subsidy payments, over the sixty-one-year period 1949-2009. This is a staggering amount: six times the value of the profits all Ohio farms have earned from production over the past forty years. It is worth $2 million for each of Ohio's currently operating farms.

For this and other reasons, rural Ohio has fallen victim to immense transfers of potential wealth. This certainly plays a major role in hampering rural efforts to plan for the future on their own terms.

$152 billion flows away from Ohio rural communities

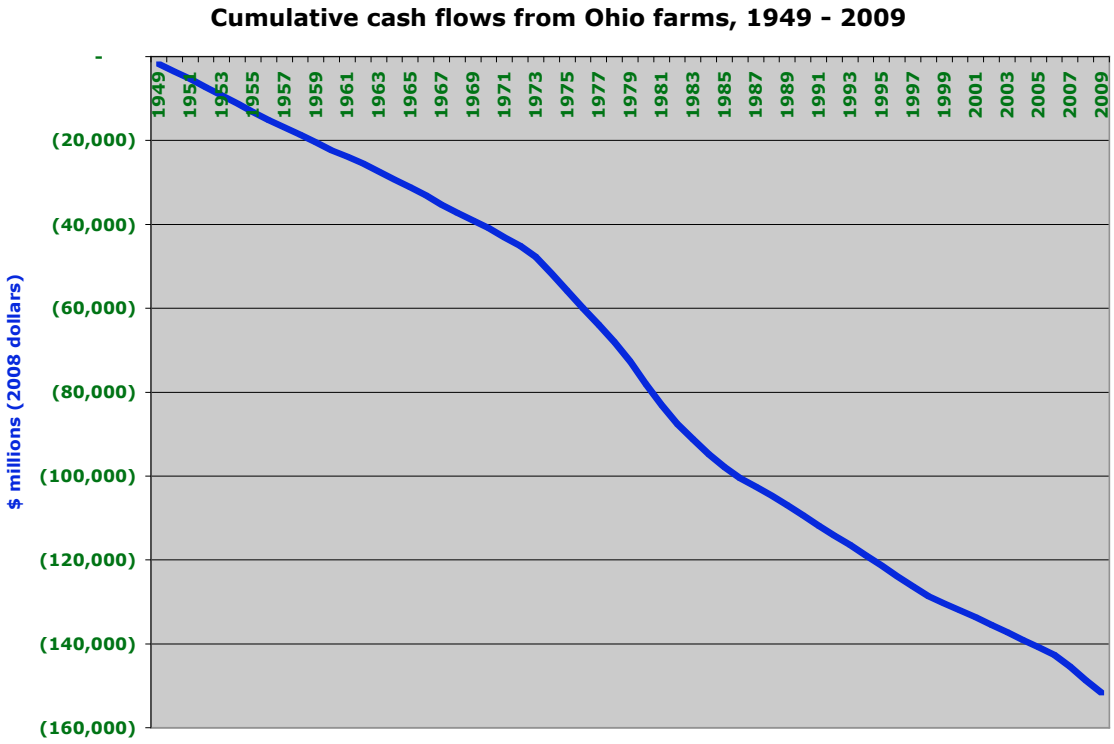

Chart 34 — Source: USDA / ERS with calculations by author. Note that this is also only a partial tally of money flows away from the farm sector (shown as negative numbers on this chart), and of course does not include cash receipts earned by farmers.

This means that subsidy programs do not begin to compensate the Ohio economy for the dollars that leave the state as farmers buy inputs that are sourced outside of Ohio. It would be more accurate to say that federal subsidies reinforce the extraction of wealth from rural communities in Ohio — even if individual farmers themselves are able to make a profit — by allowing farms to sell their products at below the cost of production. This creates business opportunities for lenders, commodity buyers, and input dealers, located both inside and outside of Ohio. Some Ohio farmers also prosper, but the overall impact is a considerable strain on the state economy.

Counterbalancing this, to some extent, is the fact that many farm inputs are produced in Ohio. This would include the costs of labor, livestock, feed, seed, custom work performed by a neighbor, some interest costs, local utilities, equipment repairs, and property taxes. It is difficult to quantify these flows precisely, since precise data showing internal or external sources of farm inputs are not compiled.[46] To collect such data in closer detail would be beyond the scope of this study. A rough estimate, adapting OSU's OHFOOD model for 2004, would be that about $2 billion was added to the Ohio economy from farm inputs purchases in 2008, compared with $3.3 billion leaving the state in that one year, based on the (partial) data used for the chart above.

As one rough indication of the extent to which agriculture benefits the internal economy of the state, Ohio Department of Development calculates that of the $8.8 billion of farm

commodity sales made by Ohio farms in 2008, the farm commodity industry makes a $2.9 billion contribution to the state's Gross State Product (a measure of the value of economic activity to the internal state economy). This is 33% of sales, suggesting that 67% of the value of sales ($6 billion) leaks out of the state economy.[47]

Certainly, Ohio has also benefited from grain exports and from selling manufactured food items to other states and nations. Direct foreign food exports from Ohio in 2010 totaled $1.3 billion, including $827 million of manufactured food items, and $476 million of agricultural commodities, according to the Ohio Department of Development.[48] Main recipient nations are Canada and Japan.[49] Indeed Ohio food manufacturers, brokers, and distributors have certainly gained because farm-gate prices were low. Yet the declines experienced by many rural communities show that the overall effect of these gains has, at best, been development that benefited some Ohioans at the expense of others.

Farm commodities will of course continue to be needed; and federal policy will have to find better ways to reward commodity producers if wealth is to be built in Ohio communities. Prior studies have shown that the amount of land required to feed local residents with produce is fairly small, and certainly poses no threat to commodity production.[50] There will be some loss of current farm income as Ohio shifts to a more localized food economy, but these studies have found such losses to be relatively small.

Consumer markets for food:
The third key element of the Ohio farm and food economy (after considering net farm income and the source of input costs) is the food consumed by state residents. All told, Ohio buys $29 billion of food per year — $17 billion to eat at home, and $12 billion to eat out.

Looking only at the $17 billion of food Ohioans buy at grocery stores to take home to prepare, in-state food markets are substantial. The market for animal protein alone is worth half of current farm commodity sales.

Table 6: Food consumed by Ohioans to eat at home (2008)

	$ billions
Meats, poultry, fish & eggs	3.6
Fruits & vegetables	2.8
Cereals & bakery	2.3
Dairy products	2.0
Other	6.1

Source: Bureau of Labor Statistics Consumer Expenditure Survey, calculated using population figures from Bureau of Economic Analysis and the Federal Census.

Yet, here, too, large flows of money are created that funnel outside of the state of Ohio. There is no precise way to determine how much money is spent by Ohio consumers buying food from outside the state, since such data are not compiled. Moreover, once food enters a commodity stream, it is very difficult to trace. For example, once a farmer delivers milk to a

packing plant, it is next to impossible to know where those gallons of milk are ultimately delivered, since they are mixed together with so many gallons from other farms, and may be sold anywhere on the continent if a buyer is found. Only in the case of a creamery that purchased all of its milk from a discrete set of Ohio farms, and sold all of its milk to Ohio households, would such a calculation have much meaning.[51]

In the absence of concrete data, once again we are left with the need to estimate. One estimate that has been adopted in several Midwestern states is that at least 90% of food purchased comes from out of state. These states are similar to Ohio. While it is likely that the actual number may be as much as 95% or higher, 90% seems like a suitably cautious estimate.

At the other extreme, we know that only $54 million of food (0.2% of the food bought by consumers and 0.8% of the food sold by Ohio farmers) is sold directly to consumers (see below). This offers somewhat of an upper limit to our calculation.

If we assume 90% of the food consumers buy is purchased from out of state producers, this means consumers spend $26 billion each year buying food sourced outside of Ohio. This, too, is a significant flow of money out of the state, nearly four times the value (at retail) of all food commodities sold by farmers (at wholesale).

Yet this also represents substantial economic opportunity, because if Ohio consumers were to purchase only 15% of their food for home use directly from farmers (without going through an intermediary), this would generate $2.5 billion of new farm revenue. In an important farm state like Ohio, it does not seem an unreasonable goal that 15% of the state's food would be purchased from state farmers.

Certainly, it is unlikely that Ohio will produce all of the food it needs within state boundaries. There are limits to what can be grown in Ohio due to its temperate climate, and other regions are likely to be able to produce some foods more competitively than Ohio farms can produce for its residents. Still, increasing local food trade could bring considerable benefit to the state economy.

Direct food sales rise rapidly

In recent years, direct sales from farmers to consumers are rising significantly. Over the years 1992 to 2007, the number of farms selling directly to consumers rose 45% (from 4,698 to 6,827) while the value of these direct sales rose 70%, from $32 million to $54 million (in 2007 dollars). Overall, for Ohio farms, direct sales accounted for 0.8% of all farm product sales in 2007, twice the national average of 0.4%.

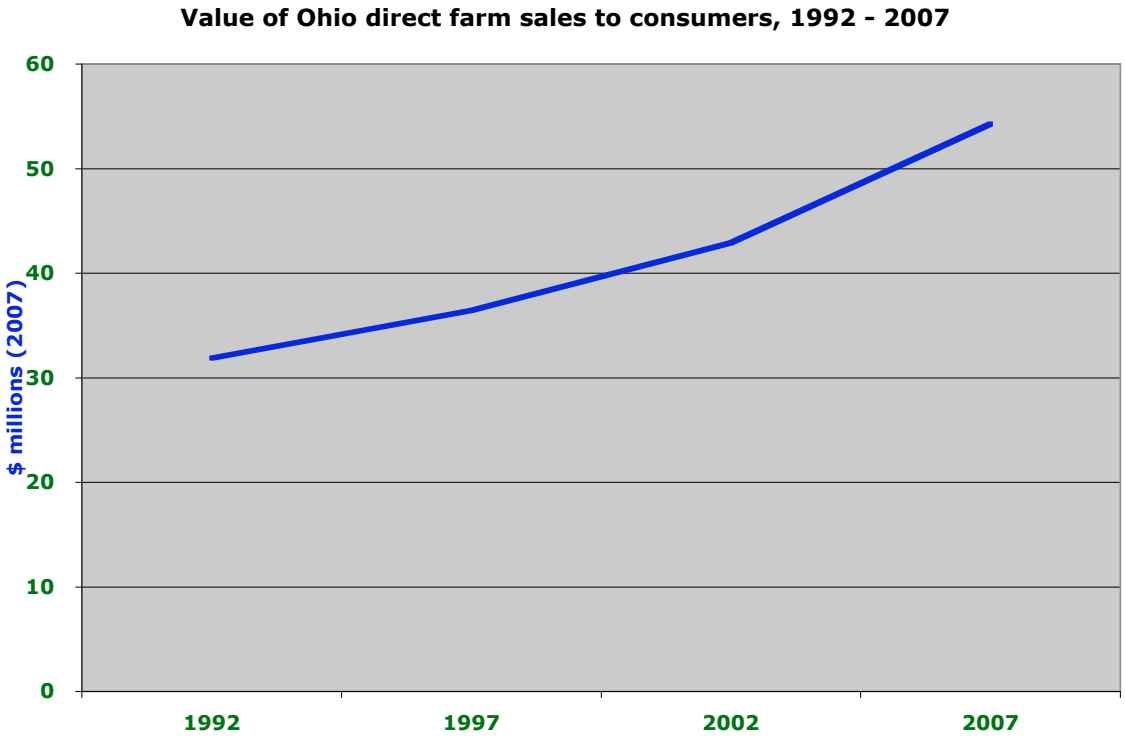

Chart 35 — Source: USDA Census of Agriculture

As small as these numbers may be, direct farmer-to-consumer sales are one of the fastest rising elements of the Ohio food economy — clear evidence of the desire farmers and consumers have to connect more closely with each other. One way of understanding the value direct sales hold is to realize that if these all involved a single commodity, it would rank as the 13th most important crop in the state, just below tomatoes, and ahead of sweet corn (see chart and table on page 17).

Ohio is a long way from trading 15% of its food within the state, and it will not necessarily be easy to establish local market channels. It would precisely be public and private investment in the creation of local food infrastructure that might allow connections to be built between Ohio farmers and Ohio consumers, to reduce the distance between farm production and state food consumption.

Summary of the Ohio farm and food economy

To sum up this overview of current conditions, we have found that Ohio farmers, on average, earn a surplus of some $300 million per year (from 1980 to 2008). Yet in so doing, they purchase $4 billion of farm inputs from outside of the state, while their neighbors buy $26 billion of food from outside the state. This represents a total outflow of $30 billion *each year* from the Ohio farm and food economy, more than four times the value of all farm production in the state.

Emerging Food Business Clusters

Athens sets the tone

All of Ohio benefits from business approaches that were shaped nearly forty years ago by collaborative networks that self-organized to launch several community food businesses, to create a vibrant farmers' market, and ultimately to bring entrepreneurship opportunities to low-income communities in the Southeast part of the state. This work has been propelled by two key insights: (1) low-income residents are an integral part of the solution, and (2) forming relationships of trust helps businesses become more resilient. Three pioneers describe how this work laid the foundation for the local foods activity that is emerging today.

Larry Fisher, Director of Finance and Incubation, ACEnet (Athens)
Leslie Schaller, Director of Programs, ACEnet (Athens)
David Gutknecht, former manager, Athens Farmers' market

Much of the pioneering business activity that transforms our society is launched in smaller communities that address the concerns of their low-income members. Community foods activity in Ohio is no exception, with ACEnet offering a prime example.

ACEnet stands for Appalachian Center for Economic Networks. Incorporated in 1985, it has just celebrated its 25th anniversary. The firm proclaimed a mission that took a broad view of community development: to build the capacity of Appalachian communities to network, work together, and innovate to create a dynamic, sustainable regional economy with opportunities for all.

This was born out of an awareness that the extractive industries that had characterized much of the economic activity in Appalachia, such as agriculture and mining, had allowed many to build wealth, but not those who did the most demanding labor and actually lived in the region. Simply starting new businesses would not be enough, unless they created ownership opportunities for residents, and built wealth for low-income people.

Implicit in this vision was that the region had to build stronger networks of trust among its residents if Appalachia was to flourish. The question became how to do business in a way that would promote those local connections, and build local wealth.

Working in 32 counties in southeastern Ohio, ACEnet began by helping new business launch, and by connecting residents with jobs that might be created in those new firms. By 1991, a deeper vision had emerged: the nonprofit ACEnet built a business incubator that provided below-market rate office space and shared business services. The thrust was now to surround low-income entrepreneurs with the support needed to thrive in businesses they owned. They have paid special attention to food, agriculture, art, retail, technology, and manufacturing businesses.

The business incubation center in Athens is about 30,000 square feet, and includes ACEnet offices as well as several retail and service businesses. It includes the Food Manufacturing

and Commercial Kitchen Facility, a shared-use operation that 150 local firms make use of to prepare, process, freeze, cool, or store food products they sell through local channels.

Larry Fisher, ACEnet director of finance and incubation, takes his visitor to a room full of samples of products that are manufactured in the facility. He explains the process he uses to walk a new entrepreneur through the decision of whether to launch their own firm: do they have the skill and temperament to manage their own business? Do they have a solid business concept? ACEnet can bring in technical expertise to help such entrepreneurs refine their business concepts.

Many people, Fisher says, think they have to come up with some new product that has never been made before. That can be interesting, but he adds that most successful firms produce something that already has found a place in the market. "If something is on the shelves, that means someone is buying it. If it is not on the shelves, there may well be a good reason no one is making it."

ACEnet offers such training around the Appalachian region, assisting residents to learn more about how to get engaged in business for themselves. This field work culminated in the development of the 100,000-square-foot Nelsonville Business Incubation Center, a satellite of the Athens operation, located in northwest Athens County.

Adding to the strength of the business development programs is a microenterprise loan fund that spun off in 1999 to be its own firm, ACEnet Ventures. A certified Community Development Finance Institution (CDFI), ACEnet Ventures can offer the credit required to get small businesses on their feet.

Yet local markets also have to be built; they do not spring up spontaneously. After years of effort, ACEnet persuaded the local Kroger store in Athens to carry a special shelf full of products that are produced in the Athens area. Program director Leslie Schaller points to several products on that shelf that had been made inside the ACEnet Food Ventures Center, including pasta, tomato sauce, salsa, and many others.

Schaller adds that ACEnet has devised two marketing campaigns that have helped create new markets for local foods. One, "Food We Love," has helped open doors with local buyers. The local Kroger is now stocking more fresh produce, for example. However, a larger effort to create a new food brokerage as a social enterprise within ACEnet did not take root.

Now, ACEnet is embarking on a tourism campaign, "The 30-mile Meal," which will be carried out in collaboration with the tourism bureau. The campaign offers local restaurants a focused way to highlight local meals on their menus, and encourages consumers to ask for locally produced food. "This is our effort to bundle the tourism experience in a new way so we can make more money for farms and businesses in the region." Schaller adds.

It is important to note that ACEnet did not happen overnight. The growth of the organization is a product of community foods work that dates back at least to the 1970s, when a group of small growers and consumers formed the Athens Farmers' Market, now known as one of the better farmers' markets in the state. Today, about 60 farms sell their

products there, along with 30 value-added vendors, and many other local food enterprises and nonprofits.

"The Farmers' Market has been an important venue for folks who develop a product in the community kitchen at ACEnet," says David Gutknecht, former market manager who now edits *Cooperative Grocer* magazine. He explains that the market offers a place to build product recognition without spending a great deal of money. After establishing themselves in Athens, many vendors build up the resources to enter larger markets in Columbus.

The market itself experienced some complaints in its early days, when it set up shop on city streets. As the market grew, some residents felt the market became an annoyance to street traffic. So a deal was cut with the city, to move the market to a city-owned location that would have more parking. The city's offer of free space for the market helped keep stall prices low, which, Gutknecht adds, was key to the success of the market.

Gutknecht believes that an early decision to maintain the market as strictly a producers' market, where people sell foods they have grown or produced themselves, was also critical to the market's growth.

Athens also focused its own discussion of an issue that was building in many cities across the country at the time — of the need for co-operative business structures, if wealth was to be built by communities for themselves. In Athens, a co-operative grocery was formed, and this led to a broader interest in worker-owned co-ops that might provide a wealth of other services, Gutknecht says. Principals in this network were June Holley, Roger Wilkinson, and Martha Zinn, who went on to help found ACEnet. Yet ultimately the co-op grocery failed, and efforts to form other co-ops did not succeed as well as many had hoped.

Two retail stores that emerged in the early days were Casa Nueva restaurant, which now does a strong business on the town square, and Crumb's bakery, a solid presence at ACEnet's main campus. Also lasting was ACEnet's attention to local enterprise development more broadly. As it has turned out, nurturing the growth of local food businesses has been one of the more successful of these strategies.

This has been especially true during the recent economic upheaval. As Leslie Schaller says, "There has been a huge increase in demand for our processing kitchen the past two years, due to the recession. We do very limited outreach, but even so, more and more people have been coming to us. We're seeing lots of moderate income people who were downsized, or took early retirement, who are interested in starting a food business."

Schaller adds that with Ohio University and Hocking College committing their food services to purchasing more local foods, many of the farmers in the ACEnet orbit have found critical markets opening up. "We're seeing more demand for lightly processed foods, like fresh-cut vegetables, and much more interest in flash freezing." With assistance from the Ohio Department of Agriculture (ODA), she adds, ACEnet has purchased a cluster of new equipment that helps farmers create value-added products.

Casa Nueva (a business that Schaller helped launch) just installed a walk-in freezer and cooler on the ACEnet campus, and is using the facility to flash freeze produce for off-season

use. Shagbark Seed and Mill has also expanded their operation at ACEnet, with the help of a Value Added Producer Grant from USDA, and now supplies Casa Nueva with larger quantities of heirloom corn, spelt, and black beans.

All of these new opportunities can at times bring growth pangs. Schaller says she is wrestling with a number of new concerns all at once: Should we update our facility? How do we harness additional private and public investment in infrastructure to graduate more established firms out of the incubator, so we can invite new businesses in? Should we expand our capacity for produce aggregation and distribution? Do we know which freezing technology is the most appropriate to use as more farmers pursue "farm to school" opportunities?

These are the challenges of a mature organization. Without nearly forty years of patient work building community foods networks, Athens and ACEnet may not have been ready to tackle them.

Fresh milk builds clusters of businesses

One Southeast Ohio dairy stands at the heart of a complex web of business connections that fosters healthy farming practices, provides exceptional quality milk and ice cream, buys fruits and vegetables from Ohio farmers, and nurtures a network of support industries. Creating this business cluster has involved innovative technology, creative and strategic business planning, trusting collaboration across firms, careful construction of supportive infrastructure, nurturing of traditions, and close communication across the firms.

Warren Taylor, Snowville Creamery (Pomeroy)

Warren Taylor guides his visitor through an intricate tangle of stainless steel pipes, electrical conduits, and machines — the Snowville Creamery near Pomeroy, Ohio. He has a jogger's restlessness, and a youthful fascination with the equipment he shows, as he glides from stop to stop of the tour. He is especially excited about the workings of this plant, because he designed it himself.

Taylor points to a cluster of machinery that represents the heart and soul of the dairy plant. Here, one person, by taking a step or two in any direction, can monitor a console that shows the essential workings of the bottling process, making sure that processing temperatures are correct, and that milk flows through the proper pipes in the proper volume to create the desired mix of products.

Here, cream can be separated from the milk, the remaining skimmed milk can be condensed into a dense fluid for making ice cream, and of course whole milk can be pasteurized and packaged into paper cartons. Whipping cream can be beaten into butter. Warm milk can be fermented into yogurt or kefir. Ice cream can be batched in cold tanks. The operator can make sure that all of these processes are working properly by monitoring the console. "You have to know what is flowing through your system at all times," Taylor adds. Furthermore, when each batch of milk or cream is finished, it is tested for composition and quality.

He invites the visitor to sample the frothy concentrate that has been condensed by passing through nano (very tiny; less than a micron) membrane filters. Although this broth started out as skim milk, the bubbly concentrate now has a rich milk flavor. Taylor says the flavor has been preserved by using a low-temperature pasteurization process, a treatment at 165 degrees for 20 seconds.

Almost as an aside, he adds, "I wrote the federal regulations on pasteurization." He certainly drew extensively on this experience to make sure he configured this plant in the proper way. Picking up the pace of the tour, Taylor walks the visitor past equipment that is stacked in levels to reduce the amount of floor space. He points to water pipes that recycle water for reuse, when it is clean enough. He tells me this strategy reduces the plant's water use by half or more. Stepping briskly up a stairway, he shows me a long linear box he designed, where electrical wires are kept in one channel, so that maintenance is as easy as possible.

One could say that the workings of the plant are as condensed and as flavorful as the milk that froths in the stainless steel vat. "The machinery has a life of its own," Taylor says. "It is alive like an animal." The layout has the taut elegance of a sailboat, with everything placed just so, and indeed, that is one of the foundations of Taylor's style. His early designs were created for the retail giant Safeway in California starting in 1972, and his mentor there was a former Navy man who encouraged his staff to be concise in their use of space.

Indeed, Taylor has designed immense dairy plants throughout the world. Yet a few years ago, he and his wife decided they needed a new challenge. He gave up the industrial design business for the opportunity to invest his life savings in a dairy operation that he could stay home and run himself. He also happens to think this is the future of the industry, and Snowville places him in a fine position to help shape that future.

Taylor and his wife Victoria's best friends live across the pasture: dairy farmers Bill Dix and Stacy Hall, who had long dreamed of bottling their grass-grazed milk. The two families agreed to work closely together. The Dix/Halls offered the Taylors a small plot of ground on their Brick Farm for building the Snowville plant. It wasn't until Taylor approached a bank asking for a loan to construct the building that he was told he would actually have to own the land on which he intended to build, if the lender was to make the loan. Two acres were conveyed to the Taylors for a dollar, and the plant was built.

This collaboration with the dairy farmer leads to a refreshing overlap of interests. Taylor is almost as proud in showing off the Dix/Hall's pasture as he had been in guiding a tour of his plant; Bill and Stacy were his teachers in dairy farming. "There is one basic philosophy behind the design of our pastures: 'grass has roots; cows have legs.' " The pastures include elegantly graded pathways for the cows built to the same standards as a roadway, with 15 inches of gravel, leveled with a 'dozer and covered with pea gravel, so the animals could avoid mud, and could easily walk from one pasture to another. The ease in moving the cows makes the pasturing efficient, Taylor adds, since this reduces the cost of following the lushest hay as seasons cycle. A tunnel has even been carved under the highway, so the cows can move across the roadway without interfering traffic.

As the cows stroll various pastures, they deposit their manure on the soil, helping to fertilize the next season's grassfields. Manure from the barn is collected, mixed with organic matter, sculpted into windrows, and turned to make a rich compost that can be spread on the fields. By creating its own fertility, the farm operates with great independence, and saves on input costs.

Taylor also points to the grassy pastures as examples of how these farming practices protect the land. Since grass pastures are relatively permanent cover, the roots of the grasses remain in the ground year after year, pulling nutrients out of the goundwater so they will not become part of runoff, and holding soil close so it will not flow away as waters move. Thus, the rolling hills on which the cattle roam build new fertility over time, doing no damage to surrounding streams.

The dairy barn itself is a New Zealand style barn with a milking parlor that allows the operator to stand in a trough in the middle, attaching milking machines to udders on both sides. The flow of animals is so efficient that Taylor estimates that 150 cows can be milked by one person in one hour. A small tank truck conveys the milk a short ways down the road to the processing plant — a step that Taylor hopes to replace by building a pipeline direct from the barn to the plant, as time and resources allow.

During the winter months, the Dix/Hall farm gives its herd a rest before they calve in the spring, so Snowville buys milk from the Hamm Valley Farm, a 4th generation dairy farm in nearby Racine.

Taylor told me that Snowville sells milk to stores in each of the major cities of the state, as well as 13 stores in the smaller towns of Ashland, Bellefontaine, Centerville, Granville, Lancaster, Maumee, Perrysburg, Pomeroy, Shelby, Troy, Urbana, and Yellow Springs. Snowville also delivers to 22 Whole Foods markets in Lexington and Louisville, Kentucky; Pittsburgh, Pennsylvania; and the Washington, DC, area.

He added that he approached Kroger, a national grocery chain based in Cincinnati, about carrying Snowville milk throughout the region. Although Snowville milk sells over 100 cases in a week at the local Kroger store in Athens, Taylor says the chain decided not to encourage other Kroger stores to add the product to their coolers.

Despite this marketing reach, Taylor says Snowville has had difficulty getting investment from lenders, who criticize the company for being a "specialty operation" that is "too dependent on one retailer" (meaning Whole Foods).

Even before arriving at the plant I had sampled products made from the milk it produces. The rich concentrate I had tasted right from the Snowville vat was the raw material used to make flavorful varieties of ice cream, featuring local ingredients, at Jeni's Splendid Ice Creams in Columbus. I had tasted these exceptional flavors at Jeni's stall in the North Market, and marveled at their dense flavor [see below].

Jeni's Splendid Ice Creams itself is an Ohio creation, launched in 2002 by Jeni Britton Bauer and her husband Charly Bauer. From Jeni's work in a French pastry shop, she developed a conviction that desserts did not have to be as sweet as Americans are accustomed to. So,

she crafted ice cream flavors based on locally raised products such as blueberries, strawberries, and buttermilk, and drawing upon high-quality exotic ingredients such as vanilla that are harvested around the world. The sauces and candies that are added to Jeni's ice cream are crafted right in the factory.

Thus, the cows that stroll the well-graded paths of Brick Farm carry considerable weight on their broad shoulders. Invited to move their legs to build muscle tone, and tantalized by various flavors of grass that are nurtured in several patches of pasture, these cows create fertility for the soil, and produce an extraordinary raw milk that helps launch cheese and ice cream makers, fuel the growth of Ohio children, build the strength of Ohio retail grocers — and captures the imagination of a dairy plant designer in Pomeroy.

These acts of stewardship, ingenuity and marketing create collaboration among businesses that trade with each other, depend on each other, and have the opportunity to learn better how to address community needs as they interact with their public. How does Warren Taylor spread the word? One way is the focus he poured into making paw paw ice cream at the Paw Paw Festival at nearby Lake Snowden in mid-September, on the day we met. He and his family and friends were scraping freshly made ice cream off the paddles, and giving away samples, to let people experience the quality of the milk that Snowville cows create.

Freezers in search of a farmer:
Jeni Britton Bauer, Jeni's Splendid Ice Creams (Columbus)

According to Jeni Britton Bauer, founder of Jeni's Ice Creams in Columbus, Snowville Creamery could almost be considered the outgrowth of an ice cream manufacturer. A co-founder of the nonprofit food innovator, Local Matters, Britton has fashioned a $9 million firm out of her home-kitchen interest in making fine ice cream. She and her husband Charly Bauer tackled the challenge, in part, she said, because they wanted Columbus to "become a better place to live." In their business, they also sought to build up enough sales volume that someone nearby would realize it was worth their while to produce large quantities of exceptional quality milk.

Britton also is quick to point out that Snowville Creamery is one of the biggest reasons she can honestly say, "I really love to come to work each day." By working closely with Warren Taylor, she has been able to foster creative new approaches. "Snowville starts it all for us with their quality grass-grazed milk. We have been able to refine our recipes because of them. We've worked closely with Warren to perfect our production. It is now better than it has ever been.

"The strong flavors we like require a higher protein content," Britton continues. "Warren developed a new process with us, where he uses a nano-filter to concentrate his skim milk into a higher protein fluid before it is pasteurized. This is a wonderful base for making ice cream." Even better, she adds, "We can alter our recipes easily because we work closely with the creamery. One of Jeni's flavors calls for olive oil as a foundation. By communicating with Snowville, Britton can obtain a special blend for this flavor that reduces the milk content so olive oil can be blended without increasing the oiliness. "The flexibility he gives us is so exciting," she adds.

Snowville pasteurizes this milk concentrate and then ships it to Jeni's production room in Columbus, where it is fashioned into ice cream. Britton is also eager to add that soon, they will expand into a new 10,000-square foot production facility in the Harrison West neighborhood that will make it easier for them to make ice cream, but will also feature a commercial kitchen for their baked products, and storage and shipping space that will build greater efficiencies.

Forging this relationship with Snowville also helped the firm move to a much more solid footing than it had endured in the early years. "Dairy is really a crazy industry," Britton adds. "Small dairies really have trouble if they are not working with the big co-ops. The word I get on the street is that dairy farmers are scared of even saying anything about it. They are already struggling. One of the reasons we chose to expand our business was in the hope we could encourage one dairy to drop out of that mess, and partner with us."

Britton and her husband started the business by purchasing ice cream from a small dairy in Utica. As they expanded they turned to a larger dairy in Kentucky. Still, Britton adds, "this hurt, because we knew there were people in Ohio producing good milk." Some of their early suppliers also went out of business. But she found it difficult to work with larger processors, primarily because transportation costs became prohibitive.

Britton feels the emergence of the local foods movement suits her business style. "It is my personality to have a personal relationship," she adds. "And the whole local food movement connects us with real people. This builds accountability to each other, and it builds better products."

This quest for connection plays out in the most minute business decisions. "I know we have the best strawberries for our ice cream, and I know we have the best mint available, because I have personally sampled every one." Currently, Jeni's purchases fresh fruits, vegetables, nuts, honey, and syrup from about a dozen Ohio farms. Five of those farms are their main suppliers. The firm buys 24,000 pounds of strawberries in a year, tons of blueberries, and prodigious quantities of peaches, apricots, black raspberries, sweet corn, cucumbers, beets, celery, pumpkins, squash, sweet potatoes, black walnuts, honey, and maple syrup. Britton estimates that the firm buys $500,000 of these flavorful Ohio products each year — half of the foods the firm purchases.

Farm by farm, close relationships pay off. "We don't make celery ice cream every year. It depends on the crop." Working with the grower, Britton discovered that if the farm cut the tips of young celery stalks while they were immature, ice cream makers were rewarded with a dense flavor that was deeply pleasing to the tongue. Working with squash, they discovered that different varieties produce different sugars each year because of changing weather patterns, "so we always buy whatever is the sweetest."

Their kitchen capacity also allows the firm to fully support local growers. When strawberries come ripe, Jeni's staff processes them all within two weeks, freezing the fruit for later use. "It's lots of work, and it is not always all that much fun, but we bring lots of people together and get it done."

Some of their business contacts are not as close, of course. To source vanilla, Jeni's turns to a small farm in Uganda, where under a "fair trade" relationship the firm can purchase high quality product from a trusted source. Given this relationship of trust, this purchase is in a very real sense a "local" one. Jeni's is now opening up new sources of chocolate with a small producer in Missouri.

This does not preclude careful attention to the bottom line, of course, or the business would not be successful. "Our business is about delivering the best ice cream we can make, not about supporting free trade," Britton says, "Yet fair trade products also make for better ice cream."

It is this delicate attention to detail, and to forming relationships of trust that allow new business practices to flourish, that breaks Jeni's ice cream out of the commodity mold, with its standardization, into an exceptional product that garners strong loyalty from Ohio consumers. After starting in 1996 with one stand in Columbus' North Market, the firm now ships ice cream all over the region, including 200 grocery stores that receive it directly via FedEx. Still, Britton adds, it is the home delivery business that is growing the most rapidly.

Britton foresees more expansion, but also sees a limit to that growth. "We are not looking anywhere that is more than a six-hour drive from Columbus," she adds. "We are about to open a store in Cleveland. We are working with a great coffee company in Nashville, because we have family there. We sell lots of ice cream there."

And Britton is pleased to say that the growth of the business also depends on her trusted partners. "Our growth is based on Snowville's growth," she points out. "We can't grow unless they are able to grow as well. We are always in communication with each other," to make sure their plans are coordinated.

Blue Jacket Dairy: Scaling up from the home kitchen
Angel and Jim King, Blue Jacket Dairy (Bellefontaine)

At the Clintonville farmers' market in Columbus, I had tasted a complex, nutty cheese made by Blue Jacket Dairy in Bellefontaine. The stall also featured a soft, German cheese called quark, with a consistency like a dense yogurt, which I relished. I had not experienced this taste since visiting Germany in college.

Angel King later told me, during a telephone interview, that her family's business grew out of a happy combination of circumstances: "I like to cook, and my husband milks cows." King says she began by reading lots of books, and trying different recipes in her kitchen. Results were so good that she began to think about selling the cheeses at the farmers' market. But health laws prohibit her from selling cheese, unless it is produced in a certified facility. That meant the Kings had to build a plant where she could take her cheesemaking commercial.

King also went to Vermont to visit a cheesemaker, to learn some practical tips. Over time, she found customers across the region. The Kings opened a retail store on their farm, to sell their cheeses direct to customers. Now, Blue Jacket is sold at farmers' markets, groceries,

and restaurants across Ohio, as well as in supermarkets in Kentucky and Pennsylvania. Although the same stores in these two states carry both Snowville Milk and Blue Jacket cheese, each product is delivered through its own separate food distribution channel. In response to customer requests, Blue Jacket does carry Snowville Milk at its on-farm store.

The farm is called "Blue Jacket" because it is located close to the Blue Jacket Creek, in Logan County. Among the cheeses the Kings offer for sale are cheddar, mozzarella, chevre, and feta. This fall they plan to offer two new cheeses, both a blue and a brie. One of their signature items is "Gretna Grilling," a Greek-style cheese meant to be baked or grilled for eating. They produce two aged cheeses named after characters drawn from local history: Ludlow (from cow's milk), and Houtz (from goat's milk). Of course, Blue Jacket also sells quark, and features cheese curds.

As they have built up more business, ironically, they have stopped purchasing milk from their own farm (i.e., from Angel's husband Jim King), because the couple decided to focus their attention on cheese making. Now Blue Jacket buys milk from a near neighbor, as well as goat milk from another farm down the road.

Angel King credits her grandfather with introducing her to unusual varieties of cheese when she was a little girl. "As I child, I thought it was weird," she continues. Nevertheless, "Later in my life, I fell in love with the different flavors."

Amish farms grow a produce industry

Although many Ohio residents may consider the Amish to be quaint protectors of an outmoded past, Amish farmers have shown themselves to be particularly adept at responding to changing market conditions, and in achieving profitability. Leading in the effort to ramp up produce production, Amish communities are innovating rapidly while also remaining careful about which technologies to adopt.

Levi M. Kuhns, Mount Hope Produce Auction
An Amish farmer (who wishes not to be named)

The Ohio Amish community counts itself as 60,000 strong, the largest in the world. Centered in the hilly country northeast of Columbus, where the population reaches 40,000, the Amish have also built strong enclaves in other locales. The Amish population has doubled since 1991, and currently half of the community is less than 21 years old.

Amish farmers are leaders in local foods production, and supply many of the emerging local foods buyers. Yet their leadership is almost unwitting. Even those who now raise produce are relative newcomers to commercial production, and "still prefer to be livestock people," one Amish farmer told me. He requested that his name not be used, since he is not authorized to speak on behalf of the community, but he willingly spoke about his farming. "It seems more natural to us," in part because of the ways animals, by producing fertility, renew the cycles of life, and the connections farmers make with their livestock.

Yet in 1995, as dairy prices fell, Amish farmers who had been selling milk to commercial dairies looked for new options. Levi Kuhns, buyer for the Mount Hope Produce Auction, said the community found produce to be a viable alternative. Now, after only 15 years, Mount Hope has become the largest produce auction in Ohio. It is one of seven Amish auctions in the state, trading a total of over $10 million of produce per year.

With a lifestyle that densely interweaves spirituality and daily exchange, Amish families are well positioned to adapt to changing circumstances. By limiting their consumption of purchased products, and sharing resources, Amish families build a strong sense of community self-determination.

Each community holds considerable discretion in adopting policies that suit its members. The farmer pointed, especially, to a weekly meeting convened by the elders in his community. In addition to prayer, and catching up with new developments in the community, a frequent topic of conversation is: "Which technology should we adopt?"

The general rule is that the community adopts technology when it believes the tool can be a "servant, not a master." As I walked his farm, I was speaking to a man who does not own a car, and does not travel by airplane. Yet he will accept a ride in an auto, since that does not involve the complications of ownership, and he travels widely by train. His farm was not hooked up to electricity transmission lines, but did have an electrical generator of its own. The family also owned a Bobcat for farm chores that demanded power. Many of the younger members of the community work in factories where they work intensively with machinery, he added.

The farmer works the land with horses. He praised a new plow he had purchased from Norway. He loved the smooth way the plow turned over his soil, yet he also acknowledged it was somewhat of a "mid-life" purchase that was not absolutely essential for the farm. A neighboring metal shop had outfitted the plow, designed for use with a tractor, for harnessing to horses. He relies on the plow heavily, since he builds soil fertility by plowing grasses and legumes into his field, along with manure from his livestock.

My host continued by saying that while he would not own a cell phone, his son did, because his son's business required him to keep in close contact with customers. "Cell phones are a real issue," the farmer added. "A lot of families want them. We've set up some guidelines, and people have responded well to those."

The larger community has embraced round-baling machines, since this saves labor and protects the nutrient quality of the hay they put up. Yet the essential relationship of farming upheld by the community ethic is still a farmer working the land with horses, both because this brings independence, and because it connects the farmer intimately with the land.

Working with horses also gives Amish communities greater choice in where to settle. Horses can often work hilly soil more adeptly than mechanical tractors can. As a people who came to Ohio for religious freedom, Amish settlements have often sought out land that was considered "marginal" by more mechanized farmers, who sought large expanses of flat acreage. Ironically, while the economics of farming with machinery have only erratically

been rewarding, as seen above, Amish communities have often thrived. In some parts of the Midwest, in fact, Amish settlers have been met with mistrust — because they could buy land with cash that conventional farmers did not have.

The farmer, who holds a detailed grasp of the community's history, recounted that the first Amish settlers came to Holmes and Tuscarawas Counties in 1808-09, and ten years later to Wayne County. This started sixty years after the first Amish emigration to Lancaster County, Pennsylvania, where many settlers now felt it had become "too crowded." The Ohio community primarily relocated from western Pennsylvania, where land costs had risen, and the rugged terrain prompted farmers to look for better soil.

Arriving in Ohio, he added, "the early settlers were fairly knowledgeable about botany. They could tell what the soil was like by looking at the trees" that grew in a given locale. They did not always look for the richest soil, rather for soil that "responded well to good husbandry." Especially desirable were soils where white oak grew, with what he called "enough roll to it." This hilly texture was avoided by speculators, who wanted large plots they could aggregate, which left the Amish free to pursue their lifestyle.

The community also found farming the most fertile soil might pose problems of its own. Some farmers who worked the best land, he added, "became too prosperous. Nothing destroys the church faster." As farmers' focus shifted from "farming in the best ways to building the most wealth," the community felt it was losing its connection to its way of life.

Over time, the community prospered in part due to decisions to deal ethically with their neighbors, and to balance this with the demands of commodity markets. "We tell people to shop locally to build trust," the farmer added. "We ask people to be honest, to never cheat anybody."

Given this ethic, the community established itself well by selling livestock and milk through commercial channels, and by raising and canning much of the food it needed for itself. Yet as dairy prices eroded in the 1990s, the community looked for a higher-value commodity. Produce (fruit and vegetables), they discovered, would fit their needs.

Still, it was not necessarily an easy transition. In those days, Levi Kuhns added, "we did not have the luxury of everyone wanting local foods, as we do now. Produce was much harder to market." Given their experience with chasing dairy prices set by others, the community realized it needed to command a significant share of the market.

A produce auction, they discovered, was an effective method for doing so. Collectively, the farm community committed 100 acres of land to producing for the auction. At the auction barn, as many as 120 growers converge, bringing the products that have ripened in their fields. Up to 100 buyers bid against each other. "We have a crop, and everything gets sold," Kuhns beams. "It all goes to the highest bidder. Let supply and demand roll."

Kuhns' energetic praise of the market was hard-won, he adds. "You have to get established in this market. Each grower builds a reputation for their own product," since the buyers are looking for quality they can trust. Often this is reinforced by buyer visits to the farms, where personal connections are forged. Each farmer has a number they use for displaying their

product. Buyers look for the numbers that represent farms they know. "Those farmers who gain the best reputations are very careful to show the best quality."

The Amish community gravitated to forming an auction, located in their own community, for the simple reason that "we got better prices here than at the terminals in Cincinnati or Pittsburgh," Kuhns adds. Now, Mount Hope auction sells over $3 million of produce per year. "People feel more secure buying food they feel is safer because it has not been shipped long distances. They are closer to the grower, and they can see how it was grown, and they know it is much fresher."

One grocery chain, he continues, arrives at the market first thing in the morning, purchases what it needs, and picks up its shipment the same day, so food arrives in the store the same day it is picked. He often fields calls in the early hours, from buyers who wonder what will be available. Since there is no centralized tracking system, Kuhns must know the growers well enough to offer an educated guess. Based on the order, Kuhns can place a bid at the auction on behalf of the buyer.

Even if they had more advanced technology, it might not lead to more efficiency, Kuhns added, "You never know. A guy may say he's going to have 100 boxes tomorrow, but you never really know until he shows up at the auction." Weather conditions are always changing, and yields cannot always be predicted, he adds.

Yet Kuhns also pointed out that the increased interest in local foods also brought greater competition for the Amish growers. Still, he added, "Prices are more consistent than they used to be."

The produce auction also serves as a place where farmers can meet with each other to develop their own practices, and to gain a better understanding of the markets they try to reach. One special concern has been food safety, fueled by disease outbreaks in the industrial food system that were hard to trace.

"We have monthly growers' meetings," Kuhns added. "We cover food safety a great deal. We tell the growers to "be safe, be clean, and take action. We can track our products from the time they are planted to picking, to packing, and to purchase. We feel we have very clean produce. Its traceability is right up there."

Kuhns adds that most of the Amish growers use Integrated Pest Management practices to minimize chemical use, but don't restrict themselves from chemicals when they feel they are needed. However, one of the farmers in the community, Aden Yoder, is now launching an organic produce farm, Greenfield Farms.

As the Amish farmer I interviewed considered the future, he noted warily that there have been regulatory efforts to restrict horse-drawn production because the horse manure was considered a potential source of pathogens — despite decades of Amish experience in producing safe food, and academic research that shows "E. coli O157:H7 carriage by horses is an uncommon event."[52] Still, he felt optimistic. "The day will come when they'll be happy to see food produced at all, so they will be more lenient. The price of oil determines everything. If the price goes to $200 a barrel, they won't care if we use horses."

Waves of innovation in Toledo

Northwest Ohio has long fostered a vegetable industry that took advantage of hot summer weather and fertile soil to create world-class packing companies. Global leaders in producing ketchup, tomato soup, and pickles flourished here. A thriving greenhouse industry once took advantage of relatively low-cost natural gas and the proximity of Toledo glass manufacturing factories to extend the production season. Yet declining gas reserves and rising prices hampered greenhouse production. Moreover, laborers rose up to demand better working arrangements, and foreign competition undermined the former prosperity. Yet the Toledo region has not stood still; new produce opportunities are being created in rural and urban neighborhoods alike. Some of this builds on the tradition of a previous generation of family farms, some is based upon a new awareness among immigrants, and some involves pioneering work in inner-city communities.

A cluster creates a specialty in tomatoes: Bill Hirzel, Hirzel Canning Company and Farms (Oregon)

As Bill Hirzel walks through his family's vegetable packing plant, Hirzel Canning Company and Farms, in Oregon, Ohio, southeast of Toledo, he moves past photos of the family members who founded and led the business for four generations. Hirzel now serves as chairman and manager of the firm, which employs 125 full-time staff. He has rich and poignant stories about his ancestors and siblings. In telling these stories he also offers a weighty overview of the tomato industry in the Toledo area, because his family's firm has served as one key center of that industry.

The firm traces its origins to Hirzel's Swiss-German great grandfather, who had been a brewer. Forced to abandon the trade during Prohibition, the elder Hirzel decided that, since he was experienced in fermentation, he could produce sauerkraut with a distinctive flavor. He produced the kraut under a private label. "That private label is what gives the product its distinguishing character," Bill Hirzel states. "The others will be bought out by investors," and lose their customer appeal.

Hirzel Canning today packs tomatoes in their juiced, chopped, crushed and sauced forms under the Dei Fratelli label (the brand means "of the brothers," a nod to the siblings who started the firm). The firm also adds peppers and spices to create salsas and specialty sauces. Sauerkraut is also produced under the Silver Fleece label, a brand they purchased years ago from a former competitor. Years ago, Hirzel adds, the factory also packaged carrots and peas raised on nearby farms, but these were dropped as tomatoes became a specialized product of the Northwest region. The firm also does about half of its business packing foods for larger clients who hire Hirzel to produce foods under the customer's private label.

At one time, the largest ketchup cannery in the U.S. was located here in Northwest Ohio, a reflection of a unique combination of ideal growing conditions, inexpensive energy, efficient transportation corridors, collaboration among growers and canners, a fortuitous proxmity to Toledo's glass industry, and limited competition from other packers. Hirzel recalls there

were 179 local canners in the region, most of which are now gone. Two key reasons the industry was concentrated in this region, Hirzel adds, were first that the region had a combination of the raw materials needed for glass production (sand for its silicates and natural gas to fuel manufacturing plants and heat greenhouses), and second, that freeways constructed in the 1960s brought Chicago markets within easy reach of Ohio canners. Yet ultimately, those freeways also brought competing packers in California and Mexico within reach of those same markets.

In turn, that once-flourishing tomato packing industry has been largely displaced by foreign competition, largely from Mexico, where larger packers exploited cheaper labor, and lower land prices. As a result, the number of acres of tomato production in Lucas County fell 90% from 1992 to 2007, down to 34 acres of tomatoes raised in the open. Acres of greenhouses that once relied on the formerly inexpensive natural gas closed down and were dismantled as energy costs rose.

Hirzel survived these transformations, buying out an old Heinz facility near Bowling Green that is now the research and incubation facility for the Center for Innovative Food Technology (CIFT — see below). Hirzel Canning owns the research center, and Bill Hirzel sits on its board.

This presence reflects a deep commitment to the industry. Hirzel not only grew up working in the cannery, and knows the physical plant intimately, he is also professionally trained as a microbiologist, and served on the national commission that established nutritional labels for packaged foods.

Hirzel says that his family's firm survived because it was cautious about debt. One competitor, he noted, that started out at the same time as the Hirzel family, grew so fast it sold four times as much product as Hirzel Canning. Yet to do so, it had leveraged itself with too many loans. That competitor went under. The strategy that paid off for Hirzel? "Don't spend money you don't have."

This is not to say that Hirzel Canning avoids spending money on the best technology available. This is also central to their strategy. "We certainly need high tech in the food processing industry," Hirzel said. "We were the first guys to use the ethernet to connect our operations on the factory floor. We were the first ones in the country to know which row each tomato comes from." Other highlights in technical innovation were the introduction of mechanical harvesting equipment, and mechanical soil sterilizers the firm was able to purchase at low prices when a former Green Giant plant closed.

The 38 growers who raise product for Hirzel have now converted almost entirely to mechanical harvesting, meaning "we don't have manual labor any more." Furthermore, he predicts that "the growers who use laptops or cell phones with GPS in their tractor cabs will be the ones who survive," because they will be able to test the wetness of plant leaves, or the temperature of the soil two inches below the surface, electronically with minimal labor.

For Hirzel, the possibility of technology transfer like this is one of the reasons he takes leadership in the food industry center. "We absolutely support our growers with technology, with information sharing," he added. "The growers know every single thing they do has to

be recorded." Through advances like this, Hirzel continues, the region has boosted production from 12 tons per acre many years ago, to 63 tons per acre. Still, the region competes with California growers who can turn out 100 tons per acre.

This attention to detail is part of what assures customers of the quality of Hirzel's products, he adds. "It is brand loyalty that helped us retain business — not growth in size." He continues, "The larger firms have to spend more money marketing." Smaller firms may also have more investment in producing for local markets. Still, as Hirzel cautions, "It's great to buy local food, but you still have to preserve it," since the season is so short.

Bill then takes me to a busy laboratory in the middle of the plant where technicians sample canned product continuously to ensure that quality is exceptional. This care draws well upon Bill's background in microbiology, yet even while he exerts this care for safety he also criticizes what he considers to be "overregulation" of the food industry. "In order to cover for the worst case scenario," Hirzel adds, "we are forced to hit it [our manufacturing process] with a sledgehammer." The federal tendency to interpret regulations too stringently, he adds, "hurts our ability to innovate." He believes radiation will be an important technology for assuring safety in the future.

Bringing all parties together:
Baldomar Velasquez, Farmer Labor Organizing Committee (Toledo)

One person who foresaw the scaling back of the Northwest Ohio tomato industry was Baldemar Velasquez, head of the Farmer Labor Organizing Committee, who dedicated himself to organizing field workers in the tomato industry in the mid-1960s. In an early victory, FLOC struck until it won agreements from 33 growers to negotiate with tomato workers as a union. Yet when large processors began to bring in strikebreakers, FLOC realized it had to deal directly with those processors who held the most power.

In 1979, as field workers struck Campbell's, the firm began to require its growers to mechanize, in an effort to undermine the power of the workers. FLOC responded by organizing consumers to boycott all of Campbell's products. "As early as 1978, we saw mechanization coming in the tomato industry," Velazquez recalls. "We also foresaw that the cucumber industry was our real future. The number one pickles could not be mechanized, so manual labor would always have a role. We struck Campbell's to get to Vlasic (a pickle canner with a factory in Bloomdale)."

Yet there was work to be done in the tomato industry, as well. By 1986, in a historic agreement, FLOC won the right to represent 3,100 farmworkers in the tomato and pickle industries in Ohio and Michigan. FLOC also insisted that all parties to the issue negotiate at once, so this agreement included farm owners, and Campbell's, as well as the farmworkers. In addition to guaranteeing the right of workers to bargain collectively, the agreement created a commission, once again involving all three stakeholders, to resolve differences that might arise among the parties.

By training field workers, FLOC was able to boost the quality of the harvest, and by bargaining collectively, the union was able to raise the prices they are paid. Velazquez said

that when FLOC began working in the pickle industry, about 18% of those harvested were number one quality (the highest). Now, he says, some growers harvest as much as 40% of their crop as number ones. Where the price used to be $7 for every 100 pounds a worker picked, it is now $24. FLOC won an incentive program from the canning company to pay workers better. Significantly, although the union invited growers to participate in creating this incentive program, the deal was made by the company directly with the union.

Velazquez cautions that the entire produce industry is threatened by calls for legalization of workers, because immigrants are so vital to produce farms. "You're going to put more farms in jeopardy" if authorities become more strict in enforcing labor laws, he adds. Velazquez says that drivers' licenses must continue to be made available. "Safety on the highways should not be an immigration problem."

As FLOC takes greater initiative to build the capacity of the workforce, it is also taking on new challenges. FLOC recently obtained a piece of property outside of Toledo, where they hope to build a hydroponic growing operation of their own, perhaps raising tomatoes for an urban market that is asking for high-quality fresh produce. FLOC has been monitoring the changing consumer tastes, and sees economic development potential in local business creation. Once again, Velazquez may be noticing trends at a very early stage.

Away from the frying pan and into the field:
Elizabeth Bergman, Sage Organics (Genoa)

One younger pioneer in local foods production, Elizabeth Bergman, never imagined that she would become a farmer as she pursued her education. Yet after studying the history of food for her degree at Denison College, and gaining professional accreditation as a chef at the highly respected Culinary Arts Institute of America, in Hyde Park, New York, she found that her vision for her career deepened. Now, at 27, Bergman is in her third year of farming a two-acre farm in Genoa, southeast of Toledo. At her farm, Sage Organics, Bergman produces more than thirty certified organic vegetables and herbs. She sells these at two area farmers' markets, and also provides food for twenty-five families who invest in her farm as Community Supported Agriculture (CSA) members.

It was after reading Michael Pollan's *The Omnivore's Dilemma,* and working with several farmers in the Hudson Valley, that she decided that growing quality food was her calling. When reading the book, she said, "My blood boiled. I had assumed the government and the market were taking care of good food for Americans. I learned that was not the case at all. We've created a system where it costs much more to eat healthy than it does to eat badly." Bergman decided she did not want to be a chef, after all. Rather, she wanted to give customers the option of buying better produce they could prepare for themselves.

With little actual farming experience, she and her brother, Henry Bergman, decided to start a small operation that her family could manage, and to expand cautiously. She will till nine acres in 2011, including five acres of cover crops (plants that are raised to improve the fertility of the soil, once they are plowed under). She also invested in two hoop houses that allow her to provide produce for ten months of the year. Sage Organics specializes in gourmet salad mixes, cooking greens, heirloom tomatoes and garlic, but carries a diverse

complement of other produce. Believing that animals are pivotal to good soil fertility, she also raises laying hens, broiler chickens, pastured pigs and bees. This diversity helps keep her offerings diverse, and helps the farm be more financially resilient in the face of unpredictable weather conditions in Ohio.

Bergman was fortunate to have access to land that could easily be certified organic in her first year of growing. She became the first certified organic vegetable grower in the Toledo area. With her cooking background and her passion for organics, she had no problem introducing herself to customers and getting them excited about her produce. At the same time, she says the first year brought a steep learning curve, as she had to learn the fine art of staggering her planting dates to have a consistent supply of produce throughout the season. "Every year we get smarter," she adds, "But every year there are growing pains."

Bergman is very cautious about taking on debt to grow her company. She now has a wish list that includes tractor implements like a raised bed maker, plastic mulch layer, a Perfecta cultivator, and a heated seedling house. These purchases would allow the farm to increase output. Yet she also adds that slower growth will allow her to gain greater skill in farming before shouldering new investments. Her major capital purchase for 2011 was a used cargo van so she can transport twice the amount of produce to market.

As she has farmed, Bergman has come to view the government, not as protector of the food supply, but as a force that constrains her ability to trade — especially in light of the subsidies given less healthy foods. The regulations for chicken processing, for example, insist that if she wants to sell chickens at the farmers' markets she would have to build a processing facility on her property, or send the birds to a state-certified processor. Until recently, there were presently only two certified processors in the state, both near Dayton, a prohibitively long trek. Also, she can only sell her eggs through the CSA, since she would have to pay for a $250 mobile vendor's license to sell the same eggs at the farmers' market. She believes that most of the Health department and USDA rules are aimed to help large producers, not small farms.

Despite these obstacles, the demand for food from Sage Organics keeps growing. Next year, the Bergman's farm will plant more intensively, offer more CSA shares, and grow more produce for winter/early spring production. Elizabeth says, "We are so happy to be able to provide quality organic food to our customers and are excited to see how our farm will grow in the years to come."

Building upon a family tradition:
Kurt and Corinna Bench, Shared Legacy Farms (Elmore)

Only a few miles distant are two more produce pioneers who take a vastly different approach to raising food, but also collaborate with Bergman as opportunities arise. Kurt and Corrina Bench took time away from chores for an unannounced visitor on a beautiful summer evening, when they could have profitably devoted themselves to many tasks. Still, they insisted on sitting in the late sunshine with their guest for an extended interview, since they view part of their mission to help educate the public about their way of farming and its

potential. Their two-year-old son Jed, the same age as Shared Legacy Farms, patiently watered plants as they spoke.

Kurt and Corinna have the advantage of building their farm as a subsidiary of their parents' thirty-year-old farm, Bench Farm, which is nearby. The elder Benches, David and Cindy, have established a strong farm business, and are somewhat renowned in their region for the especially sweet varieties of corn they sell. In fact, Kurt would not allow his visitor to leave without pedaling on his bicycle out to the fields to pull a few ears for the guest to sample. The elder Benches also have some long-standing accounts selling cucumbers, tomatoes and cabbage to processors. One cousin sells tomatoes to Hirzel, and another sells cucumbers to Vlasick Pickles.

At the end of 2010, the younger Bench family worked 2-4 acres of land to provide their CSA customers with an 18-week produce supply. They supplement what they grow themselves with fruit and eggs from neighboring farms. They also provide members a choice of five farm events each year, including a planting day, tractor rides, pesto days, a pea pick, camping opportunities, canning lessons, a pumpkin hunt, and gleaning. Along with Bergman, the Benches sell at the Perrysburg farmers' market, and also deliver shares to members at the Jewish Family Services Center in Sylvania.

Further, Kurt and Corinna supplement this income by raising 20 acres of commodity crops, and by holding off-farm jobs. They have a well-defined plan for moving into full-time farm production, and aim to plant far more acres in 2011. Constructing the structure underneath that expanding system is the main challenge Kurt has set for himself, since it fulfills a youthful ambition to "build something out of nothing." Corinna takes charge of marketing and evaluation, publishing the farm's web site, a members' newsletter. "She has the gift of writing," Kurt says of Corinna. For her part, Corinna says she did not plan to be a farmer at all. "I did not want to farm organically. I just happen to have fallen in love with a man who wants to farm."

The heart of their operation is to build a supportive community around themselves. "We're selling the farm experience," Kurt says. They now have 55 members who buy a total of 43 full produce shares. Corinna admits that when she first heard Kurt speaking of building community, her eyes rolled a bit. "I thought he was really being pie-in-the-sky, too visionary. But he is doing that, too." The farm boasts a 60% retention rate for CSA shareholders. Kurt thinks building trust with neighbors is really the essential challenge. "Anyone can raise a box of vegetables," he adds.

Still, this path was only recently revealed to the Benches. Years ago, Kurt had moved away from his parents' farm, working at a wholesale plant nursery outside of Chicago, and doing some volunteer work at a CSA farm near the city. Like Elizabeth Bergman, Kurt Bench says *The Omnivore's Dilemma* changed his thinking. "I always had thought my parents way was the way to farm," he says. But the book gave him the history behind federal commodity approaches after World War II that restructured farm policies to suit larger agricultural players. In recent years, he has noticed how his father's costs for fertilizer have nearly tripled, and how fickle global markets can be. Kurt notices that when his neighbors try to raise field corn year after year, the soil gets drained of nutrients. He has learned to be

skeptical of advice that comes from many quarters. "I always wonder now, who is behind those policies?"

Virginia farmer Joel Salatin also gave him inspiration, showing it was possible to farm close to the earth and still take advantage of new technology. And he is motivated by a broader vision in which his neighbors would act in concert with their new operation. "If you want to bring rural America back, bring in businesses that serve local farmers," Kurt continues. "Like local grain mills." Corinna adds, "When Jed goes to school, I want to get the kind of food we raise into the cafeteria, not something they buy off the truck."

As they grow, they find they are close to a tipping point where it will make sense to immerse themselves more fully in farming. "We want to double our size every year," Kurt says. "When we have 250 customers, and with farmers' market sales, and our commodity crops, we can be full-time farmers." Corinna adds, "The biggest struggle is getting enough staff. We would like to multiply Kurt. As it is, he comes home from work at 5 pm and works until 9 pm. Sometimes he is out there with a headlamp on his forehead, working in the darkness. Last year, we realized we really needed enough money to be able to pay people well. Next year, we will double our staff to six." Part of the rapid quest for growth, Kurt adds, is the need for health coverage. "If I could afford health coverage on my own, I would be doing this full time right now."

The Benches have also had assistance in their growth. They can borrow equipment from his parents, and they obtained a USDA grant to build a "high tunnel" greenhouse so they could produce an early crop of tomatoes and extend the carrot season in the fall. They get free natural gas because their property includes a working oil well. In the past few years, as food safety concerns have escalated, "we are getting plenty of customers," Kurt says.

Still, with all of the promise in their vision of the farm, they also take stock from time to time to see how difficult the path may be that lies before them. "I wonder how much of [people's willingness to buy less healthy food] is a lack of education in America," Corinna muses. Kurt also questions an educational system that allowed him to grow up "without a sense of the big picture. From my father's standpoint, I am not sure if he would decide to be a farmer if he had the choice to make again. A farmer works so hard. Other people do so much less, and make so much more money."

Expanding by instinct:
Martha Mora, Johnston Fruit Farms (Toledo)

Driving west of the Toledo airport, the suburban sprawl gives way to a welcome scattering of farms. One of these is Johnston Fruit Farms, well rooted in the past yet also devoted to expanding to meet new market.

Martha Mora nurtures apple trees that her grandfather started in the 1930s, in partnership with a family friend who was thinking about getting into the fruit business. It was not until Martha's father Dale Johnston launched this commercial orchard in 1954 that the old trees were taken seriously as a source of income. But Martha says Dale did not stop there. "My father was the first orchard in Ohio to convert fully to semi-dwarf trees," because they were

prolific and cheaper to harvest as small trees. "He had a lot of assistance from OSU in those days."

Dale Johnston also ran this as an integrated farm that planted row crops, green tomatoes, hay and other produce. When Martha and her husband took over the operation, the farm carried 26 varieties of apples, planted on 25 of the farm's 80 acres. In the tradition of her father, the new owners found their own ways to innovate.

"We have hooked up with an organic grower who works with us to graft both antique and new varieties onto modern rootstock," Mora adds. "I keep searching for other varieties. We want to go to 80 acres of apples, but doing so would be very expensive."

The task was also made more difficult by the fact that in 2009, the couple had to cut down lots of trees, and pull out the roots, to change apple varieties. Not only that, but the grocers that Martha's father once sold to had gone out of business. "Alot of his outlets were mid-sized chain stores that no longer exist," she recalls. "He had a great business with strong relationships like that. He never advertised. He didn't do any pick-your-own."

Yet those options no longer exist for the new generation. Today, even as it expands, Johnston Fruit Farm sells to no grocers, because the stores wanted to work with larger growers who could provide single source purchasing. The couple does offer lower prices to individual customers who are willing to pick their own, because they recognize the retail price of apples has gotten too high for some of their neighbors. They cling to several traditional practices, refusing to wax their apples to make them look shinier, refusing to pasteurize the cider they make, and trying to use less spray. Still, Mora laments, "We haven't yet learned how to raise apples organically this far south. We are looking for a way to do so."

Rather than sell through wholesalers, the Moras prefer to sell as directly as possible. In addition to their own farm stand, the Moras sell their produce at two farmers' markets, and sell apples through two nearby orchards that carry some of the Johnston apples. They also donate some of their apples to the local food bank, out of a sense of mission for feeding the less privileged.

Collecting three generations of wisdom in farm marketing, Mora says there is no single strategy that will make things work. "It is always an agglomeration of things that makes our farm successful. We try to get into the media. We have billboards. We try to keep up with our web site." Essentially, she relies on intuition. "We just go with our feelings and hope people will agree with what we are passionate about. Of course, we also try to offer what we feel people would like."

Although Mora is happy for the recent focus on buying local, she cautions that "I don't feel like the Buy Local movement has flooded into our driveway. It is a huge buzzword, but you still have to work hard to earn a dollar."

What she values about local is the direct connection with the consumer. "To me, local is about not being too regulated by the government."

Planting seeds of innovation
Dave Beck, Center for Innovative Food Technology (Toledo)

The state of Ohio has funded seven centers of innovation to promote "technology-based economic development," one for each of seven industries that are considered strategic to the state economy. CIFT is the state program for food processing and agriculture. Its research facility is the former property of Heinz, which used the complex near Bowling Green to run tomato trials and produce seeds for commercial production. As the tomato industry migrated to California and Mexico, Hirzel Canning Co. (see above) purchased the building and surrounding 100 acres. A group of local leaders put their heads together and decided the facility would make a good incubator for local food businesses. USDA Rural Development chipped in money to help them realize this vision.

Today, the CIFT incubator has 29 tenants, mostly using it on a "very part-time" basis, says director Dave Beck. The center also performs custom processing for others on a contract basis. "We should have bought a truck," Beck says with a smile. "Everyone tries to sell to Kroger or Sam's Club first." Seldom does it work that way; most of CIFT's clients feel lucky to find small niche markets. "The first thing is to get a 52-week supply," Beck cautions. "Then you can go to Kroger."

One of the key pieces of equipment that CIFT offers is a flash freezing unit that processes fruit and vegetables on a small scale. Last year, Beck says, CIFT froze 20,000 to 30,000 pounds of product. "We're never going to compete with large-scale commercial frozen food operations," Beck adds, "We're too small." But as an incubator, CIFT can help entrepreneurs to develop new products and production systems that could be mounted on a commercial scale elsewhere. CIFT has also enlisted the support of several frozen storage facilities, which are interested in participating as growers and purchasers expand the relationships started by the CIFT program. In this initiative, growers can gain experience in freezing their products, while purchasers can become familiar with purchasing local frozen products. Beck hopes this will stimulate business growth to a level that is profitable for commercial facilities.

With a food laboratory, CIFT can also monitor the outcomes of these experimental batches, providing data that will help assure the product quality and safety of processes that are developed at CIFT. Currently they are running shelf-life tests to learn more about how long frozen food products can be stored safely.

When the institutional food service firm Bon Appétit Gourmet, LLC, sought to make contact with growers in the region who might offer to supply them with fresh and frozen produce, CIFT brokered the connections. This led to "the development of business relationships that will grow over the next several years," Beck added.

CIFT is also helping develop hydroponic growing facilities in the region, including a cluster for Mercy Hospital in Toledo, which will fund the installation of more than twenty high density, vertical hydroponic systems in inner-city neighborhoods at community facilities, schools, faith-based organizations, and others. They are also working with residents of a neighborhood near the University of Toledo to install and operate high tunnel greenhouses.

Beck hopes that "these facilities will form the basis of a neighborhood based growing, processing, and marketing system to bring fresh vegetables into the inner city."

Further, CIFT also works to connect this community group with several rural produce growers, and a regional wholesaler, to connect rural growers and inner-city residents. "We think everyone can benefit from this," Beck adds.

Growing new farmers
Michael Szuberla, Toledo GROWs Community Gardens (Toledo)
A project of Toledo Botanical Gardens; Metroparks of the Toledo Area; and the City of Toledo

Walking to the inner-city greenhouse maintained by Toledo GROWs, one receives a very tangible welcome, even though all people at the site are working diligently. A group of church volunteers was making quick work of a pile of compost on this November morning; their visitor had to step back often to stay away from the path of a caravan of wheelbarrows that were carrying the rich compost to an outdoor field.

Actually, the compost is created by earthworms that have been fed food scraps in containers inside the greenhouse. Nearby are small tanks where tilapia and perch are being raised in close quarters; pumps lift the water containing their manure into pipes that convey the fluid to watery plant beds; fertilizing greens and vegetable plants that thrive in the warm envelope of the greenhouse.

This greenhouse is one of 65 community garden spots managed by Toledo GROWs in the city. Many occupy land that is owned by Metroparks; the agency has supported GROWs to manage these lands for urban food production. Szuberla also explains that GROWs hopes to build a 40 by 80 foot training center with a commercial kitchen that will allow residents to learn more about farming, greenhouse management, poultry raising, and business skills. The training center will also have an art component.

This will allow Toledo GROWs to extend the work it is already accomplishing in using gardening as a path for inner-city youth to gain work skills, create zones of greater safety in the inner city, feed residents, connect with nature, and help beautify the landscape. Currently, Szuberla says, Toledo GROWs is working on a three-year $950,000 job-training grant from the Department of Justice. The grant allows the program to offer employment to local youth, engage them in construction work and small engine repair, expand their job skills, and train them to build fertility and raise food in community gardens.

Importing to the inner city
Ralph and Gini Behrendt, Flying Rhino Coffee and Chocolates (Toledo)

Ralph and Gini Behrendt have an unlikely story about local foods. Settled into a brick storefront in inner-city Toledo, the couple sells gourmet coffee and chocolates. This is hardly a tale of local farmers conveying fresh foods to inner-city residents. Yet the Behrendt's coffee shop, Flying Rhino Coffee and Chocolates, serves as a gathering point for discussions of food in their community. Since Gini serves on the board of the Toledo

Farmers' Market, their experience helps shape the future of food in Toledo. Moreover, they wrestle, even as importers, with some of the same dynamics faced by community foods practitioners in the rest of the state.

For Ralph and Gini, the core business approach they pursue, in dealing with producers in Central and Southern America, is similar to that of others covered in this report who trade with local farms: they focus on forming relationships of trust. This makes their business "local" in the sense that they have direct conversations with producers to negotiate mutual arrangements that work for all involved over the long term. While a "food miles" count might show thousands of miles, there trade is in very real ways community-based, and helps to build community in Toledo.

Both former glass artists, Ralph and Gini came to points in their lives where they yearned for new challenges. Ralph had been blowing glass for 17 years, and Gini had been making glass beads and jewelry for about 8 years. Both showed at some of the best art shows in the country. Yet the travel was tiring them out, and the costs of making glass had become too steep. Selling something to eat seemed like the best fit for both of them.

Gini tells stories about growing up on the north side of Pontiac, Michigan, helping weed her father's garden. "It gave me a love of growing things," she adds. Ralph developed a desire as an adult to live on a farm. They became involved in a goat farm near Chapel Hill, North Carolina. She sold gourmet cheeses to top-end restaurants and co-op groceries.

Their relative success also taught them the virtues of staying small. "I have 15 years working in corporations, so I know what that is like," Ralph adds. He does not want to repeat it. Gini, for her part, found that "if you grow too big, you lose the hands-on love." In launching Flying Rhino, they committed themselves to keeping that personal touch.

One of their suppliers introduced the couple to the Bobolink farm, in Southeast Brazil. A collective of small farmers, Bobolink raises coffee organically, in shaded fields to protect bird populations, but has chosen not to certify its products. The Behrendts liked their product, and started to purchase from them. What would make for stable trade across thousands of miles? "There has to be a lot of trust between us," Gini says. "They know who we are and who we stand for. They know we want high quality and freshness, and they deliver."

The couple also buys from a larger producer in Brazil, named Da Terra, with 12,000 acres of coffee on a 20,000-acre plantation. The owner's main business is selling tires, but the couple met him and found him to be "passionate about coffee," so they found something that tempered their concerns about the size of the operation. Moreover, his coffee is Rainforest Action-certified, so they feature Da Terra as a limited edition product.

The Behrendts also feature coffee from Tanzania, Costa Rica, Guatemala, and Indonesia. To build their business, they adopted a strategy from their days as artists: they sold at the farmers' market. That introduced them to thousands of Toledo consumers. Word of mouth carried word of their products even further. Eventually, they built a strong enough clientele that they were able to open a storefront. Yet they continue to sell at the farmers' market on Saturday mornings, because, as Gini says, "It is family and community for us. I see

frustration on the face of consumers who are unable to take the time to talk to us. The market has been a great launching-off place for our business."

City of Cleveland: supporting farming in the city

With vast tracts of vacant land, the city of Cleveland has taken national leadership in planning for urban agriculture. This involves the pinning down the technical details of civic policy, fostering innovative new farms, and animating a broad public discussion to build support for the vision. New forms of business are being created by residents who recognize that forming strong partnerships is one critical element of helping business clusters cohere, especially in challenged urban communities.

Kim Scott, City of Cleveland Planning Department
Ifeoma Ezepue, City of Cleveland Small Business Project Director

The city of Cleveland has also been creating a more sustainable future — and has become so accomplished that it has become a national model for urban planners interested in bringing agriculture inside city limits.

Planner Kim Scott points out that the city's involvement in agriculture responded to resident interest in food production. When the federal agency HUD gave the city a grant for a Neighborhood Stabilization Program a few years ago, a portion of the money was set aside to encourage residents to present their favorite ideas toward "reimagining a more sustainable Cleveland." Of the 100 proposals the city received for its competitive grants program, 56 involved agriculture.

For Scott, this was confirmation that the city should support urban gardening and farming. With vast expanses of former residential property now lying vacant in a land bank, the city has thousands of acres of underutilized land — and the region has millions of people who eat. Scott points out that even the most vacant areas have people living in them, many of whom are struggling to find work. Another issue looms large in Cleveland: thousands who were incarcerated on drug-related charges decades ago are now being released at the end of their prison terms; with few jobs available, the city faces concern about how best to integrate them into society. One study showed that life expectancy was 20 years lower in one inner city neighborhood than in the outlying areas. Agriculture appears to address all these concerns.

Moreover, the city faces similar challenges in more conventional arenas. The city's population fell from 900,000 in 1950 to 400,000, and is projected to fall lower, with the erosion of its former industrial base. With 3,300 acres of vacant land, and 15,000 vacant buildings, the city grapples with significant decline — yet each of these vacancies also represents opportunities. Although located next to the beautiful waters of Lake Erie, the city wonders how to position the city as an attractive place to live. Gardens and farms, and a

more stable food supply that keeps more food dollars circulating in the city, all seem like parts of the answer.

Scott also acknowledges that bringing the city to embrace this issue was not exactly instantaneous. Like many city governments, specialization of roles and differentiation of agencies can create "silos" in which people work hard but may lose track of how their work connects to others. This can make it hard to see the big picture, and to tackle complex issues that emerge across neat departmental lines. Community members, such as Morgan Taggart, a community leader who was hired by Ohio State University Extension to promote urban agriculture, helped city officials to see the bigger picture, and to understand the immediacy of neighborhood concerns. "It helps a great deal to have people on the ground like Morgan," Scott adds. "The city could not act without the community interest."

It also helps that City Council member Joe Cimperman, who represents inner-city neighborhoods on the near East and West sides, was supportive. As a former member of the planning commission and current chair of the Health and Human Services Committee, Cimperman understood both the neighborhood needs and the broader picture of land use in the city. With his leadership, Scott says, "the Council has been very supportive." This has led to a variety of policy steps.

One concrete example is the Ohio City Farm, located on a tract of land on the west side of the Cuyahoga River. The neighborhood development firm, the Ohio City Near West Development Corporation, led an effort to establish this farm on the site of a former housing project, Riverview Terrace, which was razed in 1999. The land was deemed too unstable for new construction. OCNW brought in the nonprofits Neighborhood Progress Inc. and The Refugee Response as partners. Two local food businesses, Ohio City Pasta, a pasta company, and the Great Lakes Brewing Company, a brewery and restaurant, agreed to recycle waste food into compost for the farm, so fertility could be created right on the site. These businesses will also buy food produced on the farm. The partners asked Cuyahoga Metropolitan Housing Authority to support the effort. CMHA unanimously endorsed the farm in June of 2010. Program manager Graham Veysey says his goal is to make Ohio City a food hub for the region.

A city with a long heritage of formal gardens, Cleveland has long sponsored gardening activity. As early as the 1970s, the city was funding community gardens using federal block grant dollars. High schools offered horticulture training. In 1985, Cleveland formed a land bank, allowing vacant and underutilized properties to be cared for and held for later use. In 2007, an urban-gardening zoning district was created, making it easier for gardeners to count on consistent city policies. Two years later, the city adopted ordinances permitting chickens and bees to be raised inside city limits. In 2009, the City Planning Commission adopted a visioning document, called "Re-imagining a More Sustainable Cleveland: Citywide Strategies for Reuse of Vacant Land," which provided images of model urban farms and gardens. By 2010, the city was considering the designation of an agricultural overlay zoning, that would create recognition for commercial farms using more intensive practices, and raising larger animals. The city is now offering five-year leases to gardeners, rather than the one-year lease that has been common.

Much of the gardening and farming work has forced agencies as diverse as public health, property inspections, the development authority, licensing and public service to work in concert. This emphasis on holistic thinking was also advanced by funders who began to work together to create more comprehensive strategies and allocate resources to support the development of the Cleveland-Cuyahoga County Food Policy Coalition, whose Land Use Working Group has been a forum for the development of many of the policy recommendations to support urban agriculture. This effort was led by the George Gund Foundation, which created the basis for the city to think of itself as a cluster of mutually supportive businesses, particularly in green energy production. A citizen coalition put forth the vision of Cleveland as a "Green City by a Blue Lake." For Scott, these institutional players reminded the city that "You have to do something different" if the city were going to be more sustainable; this would not happen as a result of traditional business or traditional governance.

Still, marshalling support in the neighborhoods was also key. The city's "sustainability summit" in 2009 attracted 800 people. Emerging out of the conference were working groups that tackled a variety of practical concerns.

All of this activity prompted a very sophisticated planning process in Cleveland, one that recognizes the need for both urban gardens that provide food for the gardeners, their friends and family, and urban farms that sell food commercially. It was easiest to launch policies for gardens since fewer public issues arose; how the city government can fairly embrace commerce has greater complexity.

As one example, for years community gardens could gain access to water from city hydrants for a small permit fee, if they were able to identify a nonprofit sponsor that will coordinate access arrangements. Commercial farmers, however, had to pay to develop water infrastructure on their sites for metered water. However, in February 2011, the city proposed to offer hydrant access for all urban agriculture projects, community and commercial, for a reasonable flat fee.

The city offers grants to commercial gardens to the extent that the gardener commits to creating jobs for others. Through OSU Extension, aspiring commercial gardeners can attend a twelve-week course that helps them advance from gardening as a hobby to production on a commercial scale. These aspiring farmers graduate with a business plan, and are then eligible for Gardening for Greenbacks Program grants of up to $3,000 to buy essential equipment, such as tools, display tables, booths, irrigation systems, rain barrels, greenhouses and signage. Grant recipients are required to secure leases for land, and a sales venue, to remain eligible for the grant.

The city also recognizes that retail outlets are needed if commercial farms are to flourish. Through its Neighborhood Retail Assistance Program, it can offer loans and other incentives for local economic development. These opportunities are available to locally owned retail stores, including food service establishments that promise to source their produce needs from local farmers.

The city has also assisted entrepreneurs who wish to launch food carts to serve healthy food at outdoor venues. As a pilot program, Scott says, the city has committed to helping up to

ten carts with up to $5,000 each in low-interest loans. Health experts will review the food cart menus and offer assistance. A local bank partnered with the City to provide additional grant funding for decoration of the carts.

Weaving such discrete but interconnected initiatives appears to be a solid formula for making lasting progress in urban areas such as Cleveland.

Inner-city grapes:
Mansfield Frazier – The Vineyards of Chateau Hough (Cleveland)

While Ifeoma Epezue garners press coverage for her work within the immigrant communities of Cleveland, and hundreds of gardeners quietly tend their urban plots at the end of their workdays, a curiously creative urban farm is springing up in the Hough neighborhood east of downtown.

Hough sports many of the city's vacant or boarded properties, having experienced massive disinvestment through the years. In the sixties, the Hough neighborhood was the scene of race riots, as anger about inequality erupted in property damage to stores that were not seen as friendly to neighborhood residents. Almost twenty years later, recognizing the lack of access inner-city residents had to quality food, a planning document recommended that a supermarket be built at a prominent corner in the neighborhood. That store was never built.

Now, residents are stepping forward with their own initiatives, rather than waiting for the big players to understand. On a sunny September day, I visited Mansfield Frazier, who is tending what he believes to be the nation's only inner-city gourmet vineyard — what Frazier refers with a broad smile as "The Vineyards of Chateau Hough."

A former newspaper editor, and still a columnist for the Daily Beast, Frazier has no illusion that the vineyard will in itself feed his neighbors. Yet he sees his farm as an economic engine that will remind his neighbors of their agricultural heritage, build skills, and create more safety on the street.

Indeed, when I pulled my rental car to a stop and walked up to Frazier unannounced, he welcomed me as if he knew I was coming. Standing out on the sidewalk, supervising a work-release crew that was spreading black dirt over the vineyard, Frazier was simultaneously keeping tabs on local traffic. He had spotted me long before I had spotted his farm, and he knew his neighbors were similarly looking out for his vineyard.

Diagonally across the street stood a newer home that Frazier and his wife had built — their commitment to settling into Hough for the long haul. From this standpoint he had noticed a vacant corner property that had once been an apartment building. The building had become a drug haven, had fallen into disrepair, and had been razed. Pursuing HUD and city officials, Frazier learned it was part of the city's land bank, and he was able to arrange to make use of it.

He also found himself caught up in neighborly discussions about local food. From these, he learned that "everybody wants to eat food raised five minutes from where they live." He

finally decided, "let's start growin' it." For Frazier, this notion also hearkened back to his own sense of African American history. "A whole lot of Blacks raised food for themselves during slavery," he says. "If they didn't grow their own, they didn't get any. But younger Blacks have gotten away from that idea." Frazier decided his urban farm would be one way to remind neighboring youth of their heritage. "I see us training young people to learn how to work the soil. This will also promote healthy eating, and healthier lifestyles."

Still, he could not see raising vegetables on this small acreage. "I get more money from grapes than I would from peppers," he adds. He envisions using grape cultivation as an educational tool, and then creating a winery that bottles the fermented juice. Furthermore, he imagines that with Cleveland Clinic a mile away, there will be people who want to buy his wines. He uses winter-hardy varieties that have proven successful in colder climates, such as Frontenac and Traminette.

He dove into this activity despite having no particular background in farming. He has done considerable research on the internet, and lauds the assistance he has been given by OSU extension agents. "Lots of people have helped," he adds, including the youth who are shoveling soil on the day I came to visit. As they dig, they join Frazier in watching over the neighborhood.

Animating urban agriculture:
Morgan Taggart, Ohio State Extension (Cleveland)

One of the main animators putting forward the concept of urban agriculture in Cleveland is OSU Extension Program Specialist Morgan Taggart. Working closely with community members, Taggart has helped city officials understand the importance of urban gardening and farming, and has nurtured the growth of several local food initiatives.

Still, Taggart herself says she is merely harvesting the fruits of several generations' worth of civic efforts to promote agriculture in Cleveland. "For the past century," she says, "there has been public involvement in gardening." This heritage is one of the reasons Cleveland has been able to move forward in recent years.

Yet the city also advanced because it recognized the opportunity that vacant land represented, in the wake of industrial decline. "The issue of land vacancy was huge. It was so large that all options were on the table. We argued that agriculture could be the highest and best use of urban land." This assertion was backed up by an increasing number of requests for land from community members: "The city was overwhelmed."

Moreover, city officials realized that supporting urban gardening was something they could do relatively quickly that would help create positive energy, she adds. "The overweight and obesity (66%) and diabetes rates (10%) are alarming," Taggart continues. This helped city officials become early adopters. "Even before the housing crisis hit, we started planning for urban agriculture."

Taggart's own background gave her a particularly effective perspective on the issue. Growing up in New Jersey, she was active in 4-H and raised livestock. She trained as a

biologist in college, and performed zoology research in Las Vegas. Through farm apprenticeships she learned about working with draft animals, Amish approaches to technology, and was trained in blacksmithing. Working on a CSA farm in Grand Rapids deepened her livestock experience, as she worked with dairy, beef cattle, lambs, chickens, and turkeys. She served as an agriculture instructor in an inner-city school in San Francisco, helping integrate agriculture across the curriculum. Then she was hired to coordinate the public programs for Cleveland Botanical Garden. She was drawn to OSU Extension by a part-time position in partnership with the city health department to work with community gardens in inner-city neighborhoods.

Significantly, she studied in Kenya for a semester as an undergraduate, and also pursued coursework in African studies. She became wary of the top-down approaches that often hampered international development efforts, and learned to work effectively in situations where resources were limited.

Working with urban gardens brought her to working with a new City Fresh program helping to distribute foods from small growers to local buyers. A food policy coalition started to address the need for systems change, if low-income residents were to eat better. By 2007 she was working with many others through the food policy coalition to bring local foods efforts into closer collaboration.

"When we started," Taggart continues, "There was one producer-only farmers' market in Cleveland, at Shaker Square. Now we have 12 urban farmers' markets. We have over 1,000 urban residents buying shares in CSA farms." Some of them pay week to week, since they cannot afford to shell out all the money at the start of the year, she adds.

Although she has spoken at national conferences highlighting the city's work, and promoting the 2008 planning document showing model urban farms and gardens, she is quick to point out that the document primarily "framed the discussion we have." With its beautiful imagery it sells the concept or urban agriculture, but does not in itself create the policies that would lead to expanding food production.

Through the Food Policy Coalition, Taggart has worked with city and county staff, nonprofit leaders, public health officials, neighborhood leaders, scholars, businesses, and others to understand the regional food system and to build more trust in working together. Their general coalition meetings typically involve about 50 people, she adds, and over 100 organizations are engaged. It strives to keep autonomy from both the city government and from local nonprofits. "We want to be a shape shifter," she argues. The group has never adopted formal by-laws, favoring the spontaneity of working as an "organism," not an organization.

The next steps Taggart views as important for Cleveland are to invest in local infrastructure that will promote local food trade, and to develop a group of entrepreneurs that will run businesses that help the community close the healthy food gap. The Ohio City Near West Development Corporation has begun to convert an old bank into a food hub where several food businesses would be concentrated.

Since I spoke with her, OSU Extension received $740,000 in funding from the USDA Beginning Farmer and Rancher program grant for an Urban Agriculture Innovation Zone in Kinsman Neighborhood. The Ohio Department of Agriculture contributed another $100,000 for infrastructure development at the site, and the city of Cleveland will help assess the appropriateness of using the land parcels involved for agriculture. The local community development organization Burten, Bell, Carr worked with Kent State Urban Design Center to devise a plan for the 28 acre site.

The partnerships continue to build.

Local Roots Co-op: a home grown co-op looks to Japan for inspiration

Strong social networks are also being forged in Northeast Ohio by residents of the Wooster region, who formed a co-operative store to allow farmers to sell food directly to consumers. The Local Roots Co-op has marshalled impressive contributions of volunteer hours and donated space, even as it attempts to create new market opportunities. The co-op draws upon the experiences of similar stores in Japan, but also engages new immigrants who have discovered they needed to return to traditional diets to stay healthy in their new homeland.

John Anderson Local Roots Co-op (Wooster)

A group of residents in Wooster, Ohio, who had been meeting for years as a sustainable energy network sponsored by Wayne County, boldly seized an opportunity to reduce energy costs by re-using a storefront downtown that had long stood vacant. They formed a "food hub" for their region: a place where growers and consumers could meet, work together, and frame a more lasting future.

Indeed, the motto of Local Roots Co-operative is, "cultivate community." The twelve residents who form the steering committee have done just that, by bringing together a diverse group of leaders, including a bank president, a poultry specialist with 28 years of professional experience, teachers who garden, a web-page designer, and a writer who also bakes and gardens.

The building they are refashioning into a co-operative grocery store is a former repair and machine shop in the heart of Wooster, owned by the county, and idle for years. "We weren't thinking about doing a co-op," leader John Anderson explained, but the idea emerged out of the group's collaborative efforts to envision a more sustainable county. County Commissioner Ann Obrecht persuaded the county to offer the co-op use of the building for two years without paying rent, so they could build up a business that might be self-sustaining. The co-op also won financial support from ODA late in 2010.

Farmers State Bank president Marlene Boyer also became the president of the co-op. "We recognized that people wanted locally grown food year-round, not just in the summer," Boyer told the Columbus *Dispatch*. Responding to that interest, the group cast its net widely, looking for experience they could draw upon.

As the group researched, someone came across a Japanese co-operative model, Sanchoko, which they adapted to Wooster. Sanchoko describes itself as a "community supported agriculture" concept for food distribution, fostering direct transactions between farmers and consumers. Organized in 1995, this model had been adopted by 29 member co-ops as of 2006, and had engaged 5,500 Japanese members. The local scale of the effort seemed to suit Wooster.

At Local Roots, consumers pay an annual fee of $50 (or volunteer for five hours) to join the co-op, and gain credits each time they shop at the store. 500 Wooster area residents have joined so far. Once inside, shoppers have access to the products of 49 producers in the Wooster region. Each grower drops off their food products at the co-op, turning it over to the retail staff to sell. Farmers receive 90% of the value of the foods they sell, with the remaining 10% going to the store to help cover overhead costs.

Yet the vision did not stop with opening a storefront. The group sought to create a larger "venue for local foods, one that would act as a hub for farmers and producers," Boyer added. "We had few models to imitate, so we started from scratch."

The group hoped that by providing one central location, they would reduce costs to the growers. "We were hearing from farmers that selling at multiple farmers' markets takes them away from the farm too much," market manager Jessica Eikleberry told the *Dispatch*.

Depending on what time of year a shopper arrives at the market, she/he has a wide choice of foods and other items produced in Ohio. Fruits, black walnuts, herbs, vegetables and mushrooms appear in season (and the season has been extended by greenhouse production in at least one farm). Local meat producers fill the freezer with grass-fed beef, veal, pastured chickens, turkey, lamb, and pork. From the kitchens of local artisans come fresh-based bread, cheesecake, fudge, fresh-roasted coffee, preserves, salsas, mustards, chutneys, and other sauces. Milk from local creameries that has not been homogenized stands next to yogurt, raw-milk cheeses, pastured eggs, and butter in the dairy cooler. Local farmers bring in honey and maple syrup. Milled grains and specialty flours are also available. Goat milk soap is provided by two producers. One vendor sells German cookies, while another provides Hungarian pastries. Crackers, vegan scones, canine treats, and gluten-free pastries are baked fresh. Handmade tools are sold by one farm, yarn and wool by another. Fresh-cut flowers, bird food, and beeswax candles are also available. Cloth market bags are sold, as are handmade slings for carrying infants, and cutting boards. Among the vendors who display their wares is Angel King's Blue Jacket Dairy [see page 65 of this report].

Clearly, the store has captured the imaginations of a wealth of local residents, who rely upon the store as part of their livelihood — a welcome buffer in uncertain times. John Anderson celebrates the organic nature of this expansion: "The people you needed would show up right when you needed them." Yet Anderson was also quite frank is assessing the store's largest challenge: "We need more people actually buying groceries," he told me. This goal is hampered by the fact there is one paid staff, three cash registers, and food offerings that are both limited and seasonal. Although the co-op purchased software from a sister co-op in Oklahoma that allows shoppers to make orders on line, it has not been used a great deal.

Yet the co-op feels confident it can grow into the remaining space in the building, eventually offering a commercial kitchen for incubating new processed food businesses, and a butcher shop, to become more complete as a food hub.

As I strolled the store in mid-October, I met Martha Vasquez, who runs Martha's Farm with her husband, providing eggs, frozen meats, fresh produce, baked goods, and handmade tools for sale at Local Roots. "I like Local Roots so much," she volunteered, as she arranged leeks at her produce counter. "It has really been important as a community gathering place." Vasquez offers classes at Local Roots showing her neighbors the tonic properties of garlic, and the way she blends cinnamon, cocoa, and garlic to make molé sauce.

Yet Vasquez story was not simply about an amenity; it was about survival in her new homeland. Her family arrived in Ohio four years ago, eager to embrace an American lifestyle. Yet she found that eating the foods she found in the conventional stores gave her family digestion problems. So the family reverted to the foods they had known in Ecuador, and their health returned. "We grew chickens and produce in Ecuador," she continued. Yet she was confused by the emphasis on "new" foods in the U.S.: "I didn't know about these 'grass-fed animals' back home. That is all we had. Organic food was all we had." Not only are her traditional foods essential for her health, they represent an important source of new income for her family, and an important point of connection to the community of Wooster.

Kenyon College: a college helps feed its region

Officials at Kenyon College were startled to discover, years ago, how cut off the campus had become from the rural areas that surround the campus. They began to rebuild their connection to farmers, and quickly learned that buying food from their neighbors was an effective way to form partnerships between the college and its community. Soon the college had become leaders in sourcing food for their food service from local farms. The college kitchen thus serves as a kind of hub that generates opportunity for a diverse array of farms and food businesses near Gambier.

Howard Sacks, Kenyon College (Gambier)
Damon Remillard, AVI Food Systems (Warren; based at Kenyon College)
John Marsh, Sustainability Director, AVI Foodsystems, Inc. (Warren)
Brian Williams, Mid-Ohio Regional Planning Commission (Columbus)

For staff at Kenyon College, the liberal arts college that was planted on the rolling hills northeast of Columbus in 1824, bringing experts together from diverse disciplines is almost second nature. This lends a broad viewpoint to its visioning for a sustainable future. Long before the food movement captured headlines, the college took strategic action to create a stronger region.

For Howard Sacks, a sociology professor who took considerable leadership in shepherding what came to be called the "Food for Thought" initiative, the work reflects a careful

consideration of the key conditions shaping the future of the college, performed in close collaboration with Knox County residents, over many decades.

Kenyon began to involve itself with local farmers in the mid-1990s, launching "The Family Farm Project" to explore the vital social and cultural contributions farmers make to communities in Knox County. Sacks directed the three-year initiative, which emphasized field research that would help create broader public dialogue. He proudly points to the fact that the college's focus on farm families, and on the Gambier region itself, set Kenyon's work apart from "other agricultural programs that took a biotech approach to farming."

That path led the college to decide to become a key player in supporting a county-wide food system, and a national leader in farm-to-cafeteria work. Yet its underpinnings also reflect challenges that the college shares with its community. At core, the small college of 1,600 students depends heavily on its pastoral rural landscape to attract students and faculty, and to remain a placid center of scholarship. Beginning in 1999, the college's concerns about urban sprawl overlapped with residents' wishes to create a commitment to maintain small-scale family farms, since this was the basis for the landscape's appeal. Significantly, college faculty also realized that engaging students and faculty in this process would create a wealth of educational opportunities, at the same time.

One of the substantial steps the college realized it could take to foster family-scale farming was to build connections with farm families, and to bring them additional business. By 2001, the college had published a directory of farms selling foods locally. A new farmers' market was launched. Then it was time for the patient work of negotiating directly with local growers to supply food to the campus meal program.

The college put up some initial grants to start the effort, which included loans to local farmers to help them buy land or ramp up production. Then the McGregor Foundation donated $250,000 for launching a larger initiative that would engage students, faculty, and meal service staff. The effort gained impetus from the parents' advisory council, which looked at the food service and concluded, according to Sacks, that the "food stinks here."

Deliberately, the college began to formulate its strategy for purchasing local food. First priority would be to buy from farms less than 25 miles away from the campus. Kenyon reasoned that the $1.4 million it spends each year buying food could make a major impact in the nearby region. For products that could not be sourced that close, a larger circle of 50 miles would be contacted. For any remaining food needs, the college would search throughout Ohio.

Kenyon also decided that building *relationships* with farmers took priority over reducing food miles, adds food service director Damon Remillard (who is employed by AVI Food Systems in Warren, Ohio, but is placed at Kenyon). That is to say, if an industrial farm produced foods nearby, the college would not buy from it simply because it was close by; the preference was to purchase from family farms.

By 2010, Remillard estimates, from one quarter to one-third of the food purchased by the college is purchased locally, depending upon the season. This means $371,000 of local purchases, including all eggs, milk, pork and beef, and considerable cheese, sweet corn, and

organic grains. All potatoes and apples are sourced locally. Many of the suppliers are Amish farms, which are concentrated in the hilly land north of campus. Farmers within 15 miles of campus provide over 95% of the campus's red meat requirements. Cattle and hogs bought on the hoof are processed locally, then delivered to the dining hall. John Marsh adds that "Balancing our menus against the carcass yields challenges the chefs to creatively consume meat cuts proportionately."

Remillard says the key to the college's approach is having close contact with the growers. This work falls to Marsh, who is charged with negotiating with the growers. "Nine times out of ten," Remillard adds, "local farmers will do anything for you to make it better." In turn, the college can also offer to be helpful. One Amish grower ships excellent cherry tomatoes to the campus, but did not initially have the high tunnel (a basic greenhouse) capacity needed to raise what the college purchases. So Kenyon's food service purchased a high tunnel for him so he could extend his growing season. Sometimes, Marsh adds, he can recruit students to help harvest basil, or clean green beans, when the farm lacks the labor to do so. Most significantly, Sacks adds, the college agrees up front with the farmer what the price will be, so the farmer can count on income if the harvest comes through.

Local purchases grew 42% in 2010, Marsh explains, due to aggressive efforts to source locally, even while the overall college budget for food fell 13% from the previous year as the food service became more efficient, including reducing waste. New purchases included perch from Lake Erie. Overall, Marsh estimates that the college could spend an additional $200,000 buying food from local suppliers as these farmers build the capacity to meet college demand.

Remillard says the next challenges involve helping more local farmers and businesses process more locally produced foods for the college's use. He envisions a time when local flash freezers package fresh produce immediately after harvest for use during the cold months. Also, food service staff has some things to learn about preparing local foods, and not all students have adapted their eating styles.

To aid in these changes, Remillard would like to see greater flexibility in union work rules, so students can play a larger role in preparing food. "Students are so proud of what they can do to assist," he adds, "They gain a great deal of recognition when they work in the kitchen and food line, and it shows them the importance of the work."

Kenyon's focus on relationships extends to its choice of food vendor, as well. When Sacks launched the local food purchasing initiative, the college food service was headed by Aramark. The national firm gave the concept of local food a good try, but Sacks concluded, "We had gone about as far as we could with Aramark. They were so vertically integrated, and so inflexible in their procedures. We decided we had to throw the old model out. These folks [AVI] were so willing to work with us. It was not just another account to them."

Ohio-based AVI is the largest privately held food-service company in the U.S. Remillard came to the Kenyon position from what he calls a "high end food court" in Chicago, and was eager to "throw the old Kenyon model out the window and make a new one work." The basis of the new model is two-fold, he added: (1) form close relationships, and (2) communicate.

Nonetheless, both Sacks and Remillard acknowledge that communication was "not smooth at the beginning." Both parties had to learn to adjust expectations. AVI lost money for the first five years, but was large enough to absorb those losses to show what it could do to source local foods. The old dining hall had significant physical limitations. "These things are evolutionary," Sacks adds. "We had to improve one product at a time, and work with one farmer at a time."

There were also some leaps and bounds. Last year, Kenyon opened up a renovated Peirce Hall, a $28 million expansion that created more storage and food preparation space, and included a hydraulically lifted loading dock so that trucks of all sizes, from farmer pickup to food service semis, can unload at the same dock. "We were the first college in the U.S. to build a food service facility focused on facilitating local foods," Sacks says with pride.

Marsh adds that forming relationships with growers has had very tangible benefits. "Our prices have been more stable. Whenever we buy locally, prices tend to stay very constant," in contrast to commodity markets where prices are set by distant forces. This helped the food service work through high energy costs at the end of 2009. "When oil prices rose, food prices [from the farmers we work with] did not rise as far, or as much, as they did in the commodity trade."

Yet trading in relationship also places some pressure on the college. They may end up paying higher prices, to support a local grower, than they would pay on the commodity market. In some cases, they may want to outbid a wholesaler so they can buy from a trusted source. "I will pay more than they will because I don't have a retail market to cover," Marsh adds. So far, the college has been willing and able to do so.

As the college builds its local food trade, it is able to call upon cooperation from their local partners, as well. One Amish grower allows Kenyon to store potatoes, onions, squash, and turnips in the farm's root cellar, so the college can buy at harvest and store these crops for later use. An apple grower three miles away stores apples in a nitrogen-controlled and cooled storeroom, so the college can buy apples in the off-season. Another farmer leaves his carrots in the soil for winter harvest.

In turn, the growers benefit from shared risk. "The strongest thing we do," Marsh says, is act something like a CSA (Community Supported Agriculture) by sharing risk and stabilizing the price. The seasonal market fluctuates so much," while the college can assure farmers of a good price year round.

This means communication is a two-way channel, with mutual dependencies built in that tend to keep people loyal to each other. This creates a network of businesses that have reason to function as a single organism. Each offers something unique to others in the network, building *local* efficiencies that tend to make it smarter over time to stay engaged in local trade. Moreover, since this is something the commodity industry cannot provide, it offers a cluster of farmers and processors a more solid foothold relative to more unpredictable mainstream markets. As one example, the college now buys from a meat processor that had invested in new equipment when Wal-Mart insisted they deliver in larger quantities. When the chain abandoned it in favor of another supplier, the processor found

itself stuck with idle equipment. Soon the college began to purchase meat there, helping the processor recover from the lost revenue.

The business world often does not cohere unless public policy and nonprofit organizations create lasting support structures. Thus, Kenyon also played an active role in helping the first countywide coordinating group in Ohio to form: The Knox County Local Food Council. The Council convenes diverse players in the county, and implements projects that create new food production for local consumers. Sacks says the council has already had strong impact: "Every incorporated town in Knox County boasts a regular farmers' market," he adds. Moreover, "The county hospital (serviced by AVI) has begun purchasing local food, as have a number of restaurants. Plans are now being considered for a year-round farmers' market in the downtown of historic Mount Vernon."

In turn, Sacks points out, the connections formed around these off-campus activities also bring educational insights back to the college curriculum. "Over 10% of our faculty now include coverage of themes of food, farming, and rural life in their courses," he says, and these courses are listed separately in the course catalogue. Working in collaboration with the state's organic food organization, the college now offers a Certificate in Ecological Agriculture for students who complete both the required course work, and a paid summer internship on a local farm. A student organization devoted to sustainable agriculture works with the food service (AVI) to create interpretive projects that educate students about the sources of their food, and why that matters. Kenyon's admissions office actively promotes this activity as a way to draw prospective students to the college.

Finally, Damon Remillard points out, AVI will turn a profit on food sales to Kenyon this academic year — for the first time.

Reclaiming history and fashioning the new in Cincinnati

Formerly a dominant food trading center of Ohio due to its strategic location on the state's main inland waterway, Cincinnati once hosted massive stockyards, enjoyed access to extensive transportation networks, and spawned important meat packing plants. Now the city finds itself emerging into local foods activity, anchored by persistent efforts to preserve and expand the historical Findlay Market into a regional food hub. Meanwhile, innovative urban farms are devising effective ways to produce foods for local consumers.

Reclaiming a historic market:
Ken Stern, urban farm manager for Findlay Market (Cincinnati)
Peter Huttinger, Neighborhood Gardens Coordinator at the Civic Garden Center
Brad Bernstein, chef at Lavomatic Restaurant

Near the historical northern boundary of the city of Cincinnati stands the public market, Findlay Market, which was built by the city government in 1852, and opened in 1855. The property on which the market stands was donated by the Findlay family, with the stipulation

that the land would revert back to the family if the parcel was not used as a public market. Today the market features 25 permanent food vendors, and another 40 food and craft vendors who show their wares in season. Another dozen food businesses operate nearby.

An additional 60 farmers sell at outdoor stalls under a permanent roof in the adjacent Farmers' Market, north of the Market building, on Tuesdays, Saturdays, and Sundays. The Saturday farmers' market operates from April through December. Fifteen other farmers' markets are scattered across Hamilton County.

Run by a nonprofit management firm, the Findlay Market aspires to create a hub of food activity around itself. It already is sponsoring market production gardens on nearby lots; these are a source of fresh produce for some market merchants and nearby restaurants. In the future, market leaders imagine more food processing at or near the market site.

Urban farm manager Ken Stern says Findlay Market is the "primary fresh food source for center city residents in Cincinnati." Stern considers the market a "very traditional" one, featuring booths where meats, cheese, baked goods and produce are sold, as well as several prepared-food stalls. Amish meats and cheeses are offered by several vendors. Yet the market is also evolving to meet the changing tastes of Cincinnati consumers. New merchants added in 2010 included a pet food store, a bakery producing fine pastries and chocolates, and a deli featuring local and organic sourced foods.

Just a few blocks to the east is the Over the Rhine Community Garden, founded in 1980. Three other community gardens have since formed nearby. Peter Huttinger, Neighborhood Gardens Coordinator at the Civic Garden Center, and consultant to Findlay Market, says he works closely with 35 gardens across the city, offering training, certification programs, and technical assistance on matters such as land leases and insurance. He estimates that double that number of gardens operate independently, without formally joining the center.

The future vision for Findlay Market is anything but traditional. With assistance from federal grants, the market is developing nearby vacant properties into market gardens. These gardens, Stern hopes, will help small growers develop stronger businesses through sales at the farmers' market at Findlay.

Walking his visitor over to the garden sites, one of which is located on the very visible location at the corner of West Liberty and Elm Streets, he shows piles of compost and horse manure which were brought in, and spread through the garden plots, by volunteers. At one pocket garden nearby, a supportive landlord allowed gardeners to install a water-retrieval system to collect rainwater from the roof of an apartment building, for use in garden plots. Gardeners, he explains, take business and farm training courses off-season, to help them build stronger commercial approaches.

Brad Bernstein, chef at the Lavomatic Restaurant, a few blocks from Findlay Market, says he has purchased fresh produce at Findlay for three years. His interest started when a woman who grows brought vegetables to the restaurant for him to use in his food preparation. "That showed me how easy it could be, and how great the food could be," Bernstein says. "One of the growers at the market has the best-tasting chard," he continues. And there are so many choices." Bernstein adds that he has learned from the market to be more selective

in what he looks for. "I no longer look for the biggest items. Now I seek out the small ones that have the most flavor."

Bernstein's biggest concern as a buyer is to have more consistent access to fresh foods during the off season. Huttinger points out that the city hosts quite a few greenhouses, yet many now are unfortunately closed. Each was built in an era when fuel prices were relatively low. Now the costs of heating the indoor growing spaces have often become prohibitive.

One private farmer north of the city raises cattle and farms several acres of land where he raises fresh vegetables for sale to local independent grocers. Since he has more land than he needs, he also rents out garden plots to several people. Huttinger says, "The biggest thing is to keep that land as a farm over the long term," since it is such a close-in community resource, one that could be threatened by urban development.

The work that lasts:
Charles Griffin, Chief farmer, Enright Ridge Urban Eco-Village (Cincinnati)

One small step toward extending the growing season in Cincinnati is being made by Charles Griffin, manager of a farm and greenhouse in the Price Hill Neighborhood west of downtown. The facility is part of an eco-village that spreads throughout several blocks, where former open spaces have been turned into seven productive gardens.

This work has been gestating for 34 years, sparked in large part by Imago, a neighborhood environmental project that settled into the locale in order to build an urban community centered on nature. All told, Imago protects 23 acres of land that it considers an urban forest. Its first land management opportunity opened up when work on a proposed elementary school on Terry Street was halted. The wooded and hilly eight-acre site was cleaned up by neighborhood volunteers. Hiking paths were expanded and maintained, and environmental learning opportunities were created. Four years later, the group gained access to seven additional acres with a view of the Ohio River Valley, and in 2002 expanded the original site by eight acres.

The greenhouse and farms total about one-third of an acre combined, and currently support a CSA farm with 40 members. Most members pay $400 per year to join, and also agree to devote 36 hours of volunteer time to the farm, while a few offer no labor but pay $600 for a membership. Griffin estimates that it would take twice as much land, and 40 more members, for the farm to support itself.

In addition to Griffin, who was trained in French Intensive farming techniques, two AmeriCorps volunteers and another part-time volunteer staff the greenhouse. Seedlings from the greenhouse are replanted in neighborhood gardens, and several crops dwell inside the structure into the colder months. Even in mid-November, tomato plants tower over eight feet, lush with plump tomatoes.

Peter Huttinger offers one of the most penetrating insights of the tour as we drive to the eco-village. Some people might look askance at this initiative for being small, he says, but he adds, "What was built here lasts over time."

Stone's Throw Market Co-op: engaging residents and businesses together

Young leaders have brought existing food businesses into collaborative networks in west Central Ohio, simultaneously forming an innovative model of co-operative organizing. Operating without a storefront has allowed the Stone's Throw Market Co-op to grow at a relatively slow pace to build a solid foundation of local food trade. Businesses have offered to share resources for the greater good of the region.

Laura Hanson and Jake Schlachter, Stone's Throw Market Co-op (Troy)

Laura Hanson and Jake Schlachter of Stone's Throw Market have launched an exceptionally innovative approach to forming a food co-op in the west central town of Troy. Rather than leaping into a storefront and hoping others will follow, they established an online grocery to serve as an income-generating activity for the organizing process. In turn, the online grocery engaged members and nearby businesses into the co-op's circle, so that a cluster of collaborative firms would support the store when it opened. Hanson and Schlachter call it the "Miami River Model" of co-operative organizing.

Hanson's is an extremely sophisticated vision for someone who is not too many years out of college. It was born out of practical working experience founding the Daily Market food co-op in Walla Walla, Washington, during college, and by interviewing other co-ops around the U.S. to learn about their operations. She points to Bloomingfoods Co-op in south central Indiana, Common Ground in Urbana, Illinois, and New Pioneer Co-op in Iowa, as models. Hanson and Schlachter see themselves collecting this knowledge into templates that make it easier for others to launch co-operative efforts.

"We knew we needed professional staff from the beginning," Hanson recalls. "Since we were building a business, we needed a high level of consistency and professionalism. We also knew we would have initial expenses the business itself could not cover. But we did not want to be shaped too narrowly around the need to build an income generating activity until we had our systems worked out. In the early stages, it was all about creating the right group culture." She says the most critical issue is constructing a distribution system for food that is locally produced, and conveying it to local customers.

How does one start a co-op without a storefront? One essential step was developing online grocery sales. Members can order what they want from a discrete list of products produced by about a dozen farmers, in addition to bulk organic foods from a distributor. Orders are packed by volunteers and available for members for late afternoon pickups on Tuesdays through Thursdays. Opened in February, 2010, the online grocery business has already spent $68,300 buying food from local farms — money which otherwise would have previously left the Troy area chasing food from distant suppliers.

Through the online grocery, members can purchase over 173 products, including Snowville Creamery milk, Blue Jacket Dairy cheese, natural beef, lamb, pork, chickens, and turkey, organic eggs and grains, Amish cheeses, local maple syrup, and a wealth of other products.

The co-op, which started in October, 2009, with a meeting of 15 people, now has attracted 157 member-owners. Hanson estimates that one-third of these members are active on a

weekly basis. The board of directors also plays an exceptionally immersed role. "The co-op provides that nexus for people to get together," Hanson adds.

Even more remarkably, Stone's Throw Market Co-op has brought nearby businesses together. An insurance company has donated office and packing space to the co-op. A local baker has sponsored fundraisers. A local butcher shop has allowed the co-op to establish a separate cooler featuring locally produced meats. Forging these connections of course creates a cluster of economic activity around the co-op itself.

In September 2010, Stone's Throw hosted a demonstration farmers' market at a local festival to announce that it was moving into the public phase of the work. Co-op members have now contributed almost $25,000 to pay for feasibility studies to open a physical storefront. The brick-and-mortar store will open once the co-op has sufficient membership and capital to be assured of success.

Hanson looks back with pride at the rapid growth of Stone's Throw. "People are really ready for a local foods movement to come to our community," she says, "especially in the wake of the economic downturn, which has so sorely tested the resilience of our small towns." The engagement is phenomenally rewarding, she adds. "We are learning skills of civic engagement you cannot learn in school."

As one example, the artisan bakery in downtown Troy, the Bakehouse, displays a poster entitled, "A Story of Local Collaboration." Pictured there are three local firms that do business within 30 miles of each other: "The Farmer, the Miller, and the Baker." All three firms partner with Stone's Throw Co-op. E.A.T. Food for Life farm in Yorkshire raises spelt without chemicals. The grain they harvest is milled into flour by Bear's Mill in Greenville, using a cold-stone process to preserve nutrients. The flour is baked by Bakehouse Bread and Cookie Company into breads and pastries. It is clusters like these that Stone's Throw hopes to cultivate.

Produce and beyond in the heart of Ohio

Raising fresh produce and transporting it to market has fueled a number of businesses in the Columbus area historically. Several families that have been involved in this food trade for decades report on the different strategies they each use to adapt to changing conditions and markets, ranging from the large scale to the very small. In some cases, the distinction between for-profit business and nonprofit organizations has begun to lose its edge. Social entrepreneurs launch produce shops while one retiring produce wholesaler looks to a nonprofit future. One dealer grabs hold of new technology. A century farm moves from conventional grain production to create a diversified and innovative dairy; blended families find close ways to collaborate.

Blending profit and nonprofit approaches: Rick DiNovo, Delaware County Community Market

The DiNovo family name is well known in Columbus produce circles, since the family has shepherded produce from regional farms to market for decades. The family is so well

established, that in addition to its produce business, the firm owns real estate interests, a trucking company, and a holding company that owns the trucks it uses to ship its products.

Yet, Rick DiNovo was faced with a challenge when he approached retirement age. Certainly he wanted some new outlet for his prodigious energy. Yet he wanted to do something different that would bring some new benefits to his neighbors.

The idea he came up with has attracted an explosion of interest from his neighbors in Delaware, Ohio. DiNovo took over a small space next to the produce firm's offices in Delaware, and turned it into the Delaware County Community Market.

Since opening in April, the market has attracted 1,800 members, who pay nothing to join, but do designate a local nonprofit that will receive a donation of 20% of the purchase price for every purchase they make from 40 vendors who bring their products to the market. Farmers might bring fresh fruits and vegetables; several vendors sell jams, breads, pies, or shortbread; a craftsman might bring a handmade item. After each sale, the market keeps 80% of the purchase price, and donates the rest to the nonprofit the customer had designated.

According to the mission statement of the nonprofit corporation that runs the store, the market is designed to help "all parts of our community." It provides a low-risk way for vendors to sell to their neighbors at competitive prices; it offers an easy path for residents to make regular donations to local nonprofits, and provides new sources of income for those nonprofits.

The market "began with a belief that the traditional business model could be applied to a nonprofit organization and produce benefits for a community," DiNovo says. The IRS had some trouble with this blended notion of commerce, DiNovo adds, but was finally persuaded that linking neighbors in this way was a charitable purpose, and granted the corporation tax-exempt status in 2009.

DiNovo acknowledges he had to step out of his comfort zone as a businessman to learn some of the nonprofit approaches, but adds that he makes this shift because "it's fun." Moreover, he says, "I'd like to see one in every county."

Adapting as the market changes:
Ben Roth, Roth Produce Company (Columbus)
Jim Sanfillipo, Sanfillipo Produce (Columbus)

Ben Roth says his produce distribution firm is a "relatively new company," having started in 1925. With 17 trucks, Roth Produce Company services 200 customers in Central and Southern Ohio, including restaurants, hotels, universities, caterers, grocery chains, and institutions. They ship vegetables, bread, milk, cheese, and eggs.

"Everyone wants to support local producers, and we do, but only if they have good practices," Roth says. For his firm that means: they are certified, insured, inspected by a

third party, have a hazards (HAACP) plan in place, have the ability to do a complete recall, and can trace their product from seed to our truck." Only a small number of growers qualify, he adds.

One grower that "went the extra mile," in Roth's estimation, was Wiers Farm. Since they plant in the rich muck soils of north central Ohio, Wiers (which also runs its own distribution) has taken special care to wash its products to remove traces of soil that might linger. "We used to stay away from greens," Roth added, because of the potential for residue on the plant. "We probably can use more now" that the firm has established such advanced washing procedures.

Roth has worked with experts at Ohio State University to train in new growers. "I hope it gets better as more people get into the business," Roth says. "One student has a farm outside of the college. We buy pumpkins, Indian corn, a squash from him."

Roth also hosts events to connect growers and chefs. Last fall he invited 35 chefs to the warehouse to meet several growers. "We told them it was wonderful to use local growers, and it was better for them to now how each grower grows his stuff."

Jim Sanfillipo of Sanfillipo shepherds a slightly older business, which goes back five generation to 1899. Located in Columbus, Sanfillipo delivers primarily in the central part of the state. Sanfillipo distributes food to hospitals, country clubs, private clubs, fruit stands, and several restaurant chains in the area.

"We have always been involved in local produce," Sanfillipo says. But he has noticed huge changes in the industry. "My grandfather used to sell to independent restaurants and grocers," he says. "Big Bear alone had 62 grocery stores. They even had their own cattle and poultry farms." But the chain was sold to a larger firm out of state, which, in Sanfillipo's estimation, "ran the company into the ground. That took a large chunk of the local business away."

Now, he adds, "there are fewer and fewer wholesalers. There once were 25 companies. Now we are down to eight, with a couple of jobbers." He is not certain the demand for local food is lasting. "The percentage is still pretty small, perhaps around 5%. Some of our customers are pizza restaurants. They don't typically care if the green peppers come from California."

Other restaurants, he adds, don't look for local. They consider it a pain to use, because they think they will have to clean it more carefully, and California always has enough. "Still, I go out of my way to get local supplies. We push for home grown as hard as we can. We send e-mails to our 140 clients telling them we can source locally for them."

"We supply Whole Foods in this region," Sanfillipo adds. "We're back-up conventional supply. We don't carry organic, and they don't use organic in their deli counter."

With the impersonality has come a push for product safety, he adds. "There was this seminar at OSU for farmers. There were over 500 at this meeting. I stood up and asked,

"How many people have become sick from eating fresh fruit and vegetables?" Sanfillipo himself is not aware of any.

He adds that negotiations with the federal government about proposed safety regulations have been complex. New policies are supposed to go into effect in June, 2011, that may require produce distributors like Sanfillipo to invest as much as $50,000 in software that will allow products to be traced through the production system. As of October, however, Sanfillipo says that "We can't get hold of any guidelines about what the computer system has to do." One thing he is sure of, however: "The new regs will devastate the three-acre farm."

In recent years, he has worked with Brad Bergefurd at Ohio State Extension to make closer contact with Amish growers. Out of that came new purchases from the Owl Creek produce auction in Waterford, which is an Amish auction that is expanding.

Still, Sanfillipo does believe strongly in local distribution. "There is always space for a small firm like us," he continues. As long as the suppliers continue to get large, we can compete with them. The big companies offer no service. We can offer second deliveries each day, seven days a week."

Right now the trends look very positive. "Every month this year, we've set another record for monthly sales," Sanfillipo adds. "We're even picking up a lot of roadside stands — more people are selling from these stands because they are unemployed."

Building an urban food hub:
Colleen Braumoeller, The Greener Grocer (Columbus)
Noreen Warnock, Local Matters (Columbus)

With a fine position in the heart of Columbus' North Market, The Greener Grocer sells local foods and serves as a local foods distribution hub for the Columbus metro area. It is also a grocer with a mission: The Greener Grocer was birthed by a network of food leaders who decided that forming a business to purchase products from local family farms would be an effective way to encourage farmers to produce food for local markets. The business is owned by Michael Jones, who also serves as the Executive Director of Local Matters, a not-for-profit that has taken a leadership role in the local foods movement in Columbus.

Last September, The Greener Grocer Operations Manager, Colleen Braumoeller, took a break at one of the picnic tables located on the outdoor patio of North Market to explain to a visitor how the business began. She explained that after the former produce grocer at the market closed, North Market management asked Local Matters if they were interested in purchasing the business.

Local Matters explored running the grocery as a not-for-profit, but encountered resistance from the IRS. Ultimately, Jones fronted the money himself, assembling the technical skills needed to open the store in January, 2008. The Greener Grocer now buys fresh fruits and vegetables, cheese, milk, grains, flour, honey, and maple syrup from about 30 farmers in Central Ohio, re-selling them to Columbus consumers.

After three years in business, the store turned a small profit in 2010 — a relatively fast start for a new business. Profits are typically donated to Local Matters, but the store has also invested creatively. The Greener Grocer recently provided a loan to a local farm, allowing it to purchase a critical piece of small equipment to expand production.

2010 was a good year despite the fact that "It's a nightmare getting product this year," Braumoeller explains. With cycles of too much rain and drought, she adds, there was either too much harvest or too little. At one point the ground developed mildew from bountiful precipitation; as we spoke in September the region was suffering from an extended drought. Not only does Braumoeller stock shelves at the store, she also purchases food to distribute in a Weekly Fresh Market Bag, delivered to low-income members year-round.

Yet weather is not the main factor limiting supply, Braumoeller adds. "We just don't have enough people farming." Not only are fewer young farmers getting started, because the requirements for land and capital are often daunting, many of the farmers who started decades ago are getting out of farming as they age.

Noreen Warnock, Director of Public Policy and Community Relations for Local Matters, notes that urban farms could also supply food for local customers. Yet this has proven difficult in the city proper. Unlike Cleveland, she says, where the government is willing to permanently commit parcels of vacant property to urban food production, "most land in Columbus is viewed by the City as potential buildable development." This means anyone who might want to grow food on city-owned land in Columbus may find the land gets sold for development use, forcing the farmer to start over in a new site. Getting access to water can also be challenging.

Another limitation, for both urban and rural farmers, is access to capital. Most banks and lenders don't understand a farm business model, and most farm lenders are focused on conventional farms that grow commodities. While some micro loans have been extended to Somali immigrants and others who want to start urban farms and food businesses, much more financial assistance needs to be available, Warnock says. "We have to work at all levels," she adds.

While The Greener Grocer's main role is to run a store in hopes of increasing the local food supply, it also serves as a distribution hub for Local Matters' Veggie Van, which delivers low-cost bags of fresh fruits and vegetables to community partners in low-income areas. The van accepts Electronic Benefits Transfers (EBT), and also offers cooking lessons to the customers who come to purchase their bag.

Warnock says that Local Matters has learned a tremendous amount in launching this service. "It boils down to building relationships — true, strong, relationships. That is almost more important than the nuts and bolts of distribution."

Relationships, indeed, helped launch Local Matters in the first place. The organization emerged out of a USDA Community Food Security grant of $200,000 in 2002. At that time, several partners, including Ohio Citizen Action, Innovative Farmers of Ohio, Stratford Ecological Center, Ohio Ecological Food and Farm Association, and Denison University, Franklin Park Conservatory and The Ohio State University, formed a collaboration to assist

low-income people in Columbus to build better food options for themselves. Calling themselves The Greater Columbus Foodshed Project (TGCFSP), the partnership helped Head Start families to create more than 20 community gardens, and offered cooking and nutrition education in inner-city neighborhoods.

This work has matured into a solid focus on three strategic areas: supply, access and education. Local Matters devotes considerable attention to young children, hoping to instill an understanding of the need to create a strong local food system. Their 28-week curriculum*, Food Matters,* reaches over 1,000 young children each week.

"Local food connects us to the most important issues of our times," Warnock concludes.

Farming a century farm:
Perry Clutts, Pleasantview Farm (Circleville)

Early Ohio pioneers were drawn to Circleville, south of Columbus, because of its open prairies, and proximity to the Scioto River. For millennia, the river had overrun its banks, depositing fertile muck. The river also represented a route for transporting products to market along the Ohio River. The open prairies meant it was easier to break the soil without waiting for trees to be cleared.

One early account noted that a farmer had managed to plant corn continuously on his land for over 60 years without sacrificing yields. Another recalled the lush grasses that fostered a dairy industry in this region.

Now, that early fertility has been consumed, and the land has been transformed into farm operations far larger than early dairymen would ever have imagined. Yet, on one Century farm near Circleville, a new generation is making its own mark on the land.

As he sits on the front porch of the family's 1904 brick home, Perry Clutts recounts the history of his family's farm with exceptional detail. His great grandfather George C. Gerhardt bought 110 acres of land here more than one hundred years ago. Purchasing a nearby farm in 1928, he ended up with a 365-acre spread by the time he died in 1935. Perry's parents purchased another 180 acres in 1984, which brought the total to 545 contiguous acres.

Perry's parents, George Robert and Sue Clutts, took over the farm in 1974, renting the land to two tenants on shares. The second tenant to work the land was Asa Chester; he continued farming for decades and never farmed on any other farm but Pleasantview. Asa and Perry's father formed a close partnership, and expanded the operation broadly. At one point the farm encompassed 3,000 acres spread over four counties, a strategy intended to minimize risks of bad weather in any one location. Yet after many years of farming at such a scale, Asa was involved in a severe auto accident near the farm. For some reason, as he convalesced, Asa experienced a dramatic change in his thinking. The story is told that when he recovered from his wounds, Asa remarked that "I have to do something different in my farming." He began adopting conservation techniques like ridge-tilling and crop rotation. He weaned the farm off of chemical inputs, and scaled back to 400 acres. Asa had lost most

of his memory in the accident, but he had kept detailed notes, so he was able to improve on his old techniques, raising seed wheat, blue and red and food-grade corn, tofu soybeans, and alfalfa/orchard grass.

Asa and his notebooks helped in the transition that brought Perry Clutts from North Carolina, where Perry grew up, to return to take over the family farm ten years ago. He focused on the 545 acres of contiguous land his grandfather and parents had procured, but noticed that is was the "gravelliest farm in the neighborhood." Thirty acres of this land are bottomlands in the river floodplain, now in CREP (Conservation Reserve Enhancement Program). A pine plantation on higher ground occupies 50 acres. A few acres are devoted to the house and barn. The remaining 450 acres he plants to grass, the primary feed for his animals. One of Perry's first decisions was that the land required animals to build fertility. He began by adding beef cattle to graze, in part to reduce the stress and cost of harvesting pastures.

He also sought ways of further building the fertility of the soil. By 2000, he had found two sources of organic matter: a combination of bedding material and manure from local horse racetracks and the Ohio State Fair, and leaves from the city of Circleville. Adding this material to manure from his own cattle, and turning it with machinery he purchased from an American firm using a South African design, he was able to add rich nutrients to the soil. He uses a microbial composting technique developed by the Lubke family in Austria.

After five years of raising cattle, "It seemed a natural progression to begin milking," Clutts says. He purchased his first yearlings in 2005, and bred them for spring calving in 2006. He milked the cows conventionally for one year before he made the change to organic milk production. He sells his milk to Horizon Organic of Broomfield, Colorado, which runs a regional processing plant in Buffalo, New York.

He had absolutely no dairy experience when he started, but he had connected with growers who were creating new ways of farming. "When I looked at the costs of the dairy operation we had," Clutts says, "It didn't make sense to spend all of that money on grain." So, he uses grain and minerals merely to balance their diet, 80% of which comes from grazing.

Despite his lack of dairy experience, he found several mentors willing to assist. "If I have an issue, I can usually get someone on the phone within an hour to help," Clutts says. Many of these mentors are organized into a graziers' group of 15, each of whom have different styles, but similar core values towards grazing. Group members help each other learn about healthy farm practices, and troubleshoot when something goes awry. "I was lucky to meet people who were already doing it," Clutts recalls.

Among those for whom Clutts grazed cows during the transition period between row crops and grazing were Bill Dix and Stacy Hall, who run Big Rumen Farm, in Athens, and The Brick Farm in Pomeroy. These farmers supply grass-grazed milk to Snowville Creamery [see page 60].

Clutts shares farm chores with another family, the Queen family of three, and the team milks 150 Jersey/Holstein cross cows twice daily. Their New Zealand-style Swing 20 milking parlor allows great efficiency. They hope to expand production to 225 cows within a couple

of years. After starting with only one spring milking season, the team has now moved to two seasons per year, so they can sell milk year-round.

"Personally, I feel we are creating jobs here," Clutts says. "I serve on the Ohio Food Policy Council, where we have been talking about the fact that Ohio grows all of this stuff that is shipped somewhere else. If we can get to where we are growing, processing, and shipping and eating right here, then we can create jobs."

Options for Ohio to produce more of its own food

Summary of Recommendations

See page 109

Public investments from state and local governments in Ohio should include, and should inspire private parties to invest in the following:

1. **Ohio should create a "farm system" that grows new farmers.**

2. **Building citizen capacity to coordinate local food activity is required if the state is to adequately respond to changing market conditions.**

3. **Citizen planning initiatives will be strongest if they compile comprehensive data bases regarding their own local food economies.**

4. **Investment in green energy production at the community level will be critical for Ohio's food future.**

5. **The state should support the creation of regional investment funds.**

6. **Physical and knowledge infrastructure at both the state and local level will be required.**

7. **Investing in building solid relationships of trust among community food system practitioners will help the food system cohere.**

Options for Ohio to produce more of its own food

This study has found that the prevailing food system in Ohio has failed to build health, wealth, connection and capacity in Ohio communities to the extent that Ohioans deserve. Indeed, the food system often frustrates these purposes.

In response, residents are actively building community-based networks that include clusters of food businesses, with supportive social connections, popular organizations, and policy initiatives, that strive toward a better future for Ohio.

Interviews with more than two dozen businesses document that forming relationships of deep mutual trust is the central "lever" creating the systems change that fosters the emerging food system.

It follows, then, that the primary thrust of Ohio food policy should be to support this emergent community-based food sector. This is the only approach that will allow Ohio to build upon the assets it has so doggedly built, against tremendous odds, for more than 40 years. This is the only approach that will re-weave the social fabric of the state, to help overcome the deep divisions that have been opened.

Moreover, this is the essential path for promoting economic recovery — one based on building democracy and capacity at the community level. The farm and food sector is critical to the state economy, and healthy food is crucial for a healthy Ohio. The change will begin here.

Accordingly, this report recommends that initiatives such as those covered above be embraced with supportive policies, and supportive investments. Although this community-based foods effort has the potential for repatriating $30 billion that is currently shipped out of the state each year as farmers farm and consumers eat, making this conversion will not be easy.

As our historical overview shows, this will be the first time that Ohio has ever set out to build lasting infrastructure that connects local farmers with local producers. Some of this infrastructure existed in the past, but almost as an afterthought to farmers' main purpose, which typically was to pay off mortgage debts by producing crops and livestock for commodity markets, and then to build wealth if possible. Ohio agriculture, indeed, was built on an effort to exploit its natural position on water trading routes — the Ohio River, the Great Lakes, and the canal system that linked them — so food could be shipped to distant markets, not on creating the conditions for lasting food security for state residents.

This investment in infrastructure that supported long-distance shipping resulted in economic structures that extract more wealth from the state than they create for Ohioans. Unless new initiatives reverse this extraction, the state will become increasingly dependent. Moreover, the prevailing food system is built on the assumption that fossil fuel will be plentiful and cheap. Just as the Northwest Ohio greenhouse industry foundered when its low-cost sources of natural gas were completely mined, the rest of the food industry may find itself in

deep jeopardy as oil supplies peak. Oil may no longer be available, let alone at a price any Ohioan can afford.

Interviews with business and community leaders leading this effort show that this emergent food sector is characterized by a mix of for-profit and nonprofit activity. Each form of doing business carries inherent strengths and limitations. Even many people who are skilled in running for-profit firms find that the prevailing economic conditions make this impossible without long-term subsidies. Accordingly many seek patient capital investments or donations through investors, nonprofit or public channels in order to launch new business concepts. Conversely, many nonprofits are starting businesses of their own in order to create more reliable income streams, or are pursuing nonprofit work in a more entrepreneurial fashion. There also appears to be a rebirth of co-operative forms of ownership, because these forms allowed for shared decision-making, accumulation of member equity, and attention to broader community goals.

Indeed, even long-established business and investors rely deeply on subsidies. Prevailing subsidies that shape and support private enterprise include:

(a) laborers, especially farmworkers and new immigrants working in strenuous field and processing jobs, who work for less than livable wages;
(b) global financial channels that favor the so-called "developed" nations (or regions) over those that rely on production of primary commodities;
(c) public acceptance of monopoly power that allows large firms to charge more for their services than those working in a competitive environment;
(d) federal tax incentives to promote investment, that are often skewed to benefit larger firms more than small;
(e) federal subsidies to farm commodities which have the effect of allowing farmers to sell products at less than the cost of production, which benefits lenders, input dealers, commodity buyers, farmers, and consumers but at the expense of rural communities;
(f) business incentives by local governments such as reductions in property tax, or construction of public infrastructure that reduce costs for manufacturing or retail firms to locate in a given community;
(g) state or local investments in infrastructure (transportation paths, buildings, technology, computer software knowledge bases, etc.) that create market connections and efficiencies;
(h) worldviews and habits that promote extractive industries and the assumptions and values that serve as their foundation;
(i) protected business arrangements, including preferred customer arrangements, kickbacks, or other exclusive channels that protect specific financial transactions;
(j) public allocations by local and state governments that serve to foster business development, including basic education, training, referral services, research, and supportive public policy.

This, then, is Ohio's $30 billion challenge: The Ohio Department of Agriculture should build upon the work Ohioans have pursued for decades, and invest in the long-term expansion, job-creation, and resilience of its food business clusters.

As important as the investments Ohio makes are the reasons behind the investments. Here are a few guiding principles that should guide Ohio policy makers:

1. Family farms literally are at the heart of it all. A **family-style agriculture**, with thousands of families owning businesses that trade locally, exploiting green energy, and connecting in community, **will build more wealth than a system based on centralized firms** that are deeply dependent upon public subsidy and fossil fuels.

2. **Farmers are one of the most vulnerable sectors in the Ohio economy**, since they face risks of climate and weather, lack power in global markets, and produce perishable items. Their physical labor makes farming one of the most hazardous occupations in the nation. Amidst a highly rationalized and predictable industrial economy, which can compile wealth more readily than people who work the land, farmers will require investments that offset these risks.

3. Yet throwing **cash subsidies at commodities is a failed strategy**, since this essentially supports the extraction of capital from rural communities to financial centers. Public moneys are far too valuable, and hard-won, to be expended on day-to-day costs; rather these should be capital investments that promote lasting benefit to the communities where investments are made.

4. **Many of the existing farms are not skilled in raising food directly for consumers**, since they have become expert, and highly productive, at raising commodities for industrial processing. These commodities are, of course essential. Policy regimes have not effectively supported Ohio farmers for producing them. Even though Ohio's farmers have doubled productivity over the past forty years, other stakeholders in the food system have gained more financially from these farmer investments than farmers themselves have.

5. This means that public policy in Ohio should **support new people to enter agriculture**, including inner-city residents; immigrants (who often bring expert farming and business skills with them from their home country); youth who have not grown up on farms; and retirees who may coordinate with younger colleagues who engage in field work.

6. **Farms of all sizes are critical to Ohio's future**. Indeed, 44,000 of the state's 75,000 farms sell less than $10,000 of products. Many have survived rugged economic times, often by relying upon off-farm income. These small farms are the ones best poised to lend the Ohio food system resilience, since they can change their farming practices more readily in response to new challenges. **Middle-size farms** may play a strong role in supporting families who wish to work full-time at farming. **Large-scale farms** can play an important role, in particular by ensuring that through their efficiency, size, and market power, they create economic opportunities for small producers and processors.

7. **"Going to scale" is a strategy, not a purpose.** While producing and trading at a larger scale may create efficiencies, it may also concentrate economic power, or further draw wealth away from local communities. The test of whether going to

scale makes strategic sense, at any given point in time, is whether local communities will build health, wealth, connection, and capacity by engaging with larger trading systems over the long haul.

8. The importance of the "local" foods movement cannot be measured strictly in "food miles." What is emerging is not simply a local foods movement, it is a food movement **based in local community**. For example, Kenyon College does not buy food strictly from the producers closest to the campus; it buys from farmers with which it has found mutual benefit, and has established trust. Blue Jacket Dairy finds it needs sales outlets in Pennsylvania and Kentucky as well as Ohio; these markets may be more "local," in the sense they are based on trust, than simply selling cheese within a small radius of the creamery. However, these longer-term sales may also become more vulnerable as gasoline prices rise. Once again the test of community-based foods networks is whether they build health, wealth, connection, and capacity at the community level.

9. Although there has been a tendency on the part of economic development officials to consider community-based foods as a marginal or minor concern in the face of broad economic upheaval, this is not the best way to think about the issue. In fact, **building community-based food business clusters is the best vehicle for rebuilding the American economy**, because we are required to be inclusive when we build food networks. Certainly, victories in local food may be small at first, but these early steps lay the groundwork for more rapid progress, and larger economic multipliers, at a later date. Note that economic multipliers are built by intentional investment and public policy.[53]

10. As argued above, most every business, co-operative, or nonprofit venture in the community foods movement (as in the mainstream economy) has **required a subsidy** in one form or another, whether public or private. If a subsidy effectively allows a creative business model to be built, especially in ways that encompass larger community goals for sustainability rather than simply achieving profitability, this upfront investment is well-spent. Significant lessons, or future economic growth, can also be learned from endeavors that appear to fail in the short term.

Public investments from state and local governments in Ohio should include, and should inspire private investors to invest in the following:

1. **Ohio should create a "farm system" that grows new farmers.** Similar to the farm system in baseball, this would be a comprehensive approach, including adequate provision of places to garden, effective training in sustainable horticulture and commercial food production, adequate infrastructure to ensure that foods produced on training farms is efficiently conveyed to nearby markets, and should ensure there are enough farmers — and farms — to keep Ohioans fed with locally produced foods. Further, Ohio should permanently protect farmland from development, including expansion of existing farmland preservation programs. As more and more producers enter the market, the Ohio farm system will also have to build ways of ensuring that farmers don't unleash a surplus of foods onto the

market, depressing prices. Amish, Mennonite, and other farmers could play a significant role in the growth of this "farm system."

2. **Building citizen capacity to coordinate local food activity is required if the state is to adequately respond to changing market conditions.** The complex workings of food systems, along with rising uncertainty about fossil fuel supplies and unpredictable changes in climate, are all reasons to engage citizens in coordinating local food activity. Making strong use of this wisdom from the field is crucial to success. Moreover, without a mutually agreed vision for the future of Ohio's food, business clusters cannot cohere. A number of strategies, including forming local or statewide Communities of Practice, citizen networks, coalitions, or food councils, may be appropriate citizen engagement processes.

3. **Citizen planning initiatives will be strongest if they compile comprehensive data bases regarding their own local food economies.** A locale or region can gain a competitive advantage if it holds the best information available regarding the local food system, its assets, and its challenges.

4. **Investment in green energy production at the community level will be critical for Ohio's food future**; if local food growing, processing, and distribution is operated on renewable, locally produced energy, it will hold a competitive advantage over foods that are produced, processed and transported using fossil fuels. Conserving energy will be critical. Similarly, the more other farm inputs, such as soil fertility, integrated pest management techniques, equipment, and debt, are locally produced, the more resilient the Ohio economy will be.

5. **The state should support the creation of regional investment funds within Ohio.** These funds should engage Ohio residents in expressing a local vision for sustainable local food production, build local capacity to handle investment, and recycle interest payments back into local uses. Farmers and food businesses will need patient capital that does not demand immediate repayment, or make new firms overly vulnerable to paying interest. Interesting models of local investment have been built by La Montanita Co-op in New Mexico, by the Carrot Fund in New England, and by the Hiawatha Fund in Minnesota, which promise to allow average residents to participate in investing in the development and growth of business clusters. Existing Community Development Financial Institutions, Community Development Corporations, and scattered independent banks already begin to fill this role, but a more comprehensive vision and greater resources will speed this work. It is worth recalling here (see page 51) that individual lenders have been the most important source of farm credit during the years when Ohio's farm economy was most healthy. Public policy and public investment are critical, and at times have built communities' capacities to address their own issues and concerns, by limiting the supply of farm commodities, ensuring that farm-gate prices stay high through federal loans, and by engaging local residents in lending decisions. Moreover, the experience of Amish, Mennonite, Hutterite, and immigrant Asian communities shows that self-financing (which of course becomes possible due to policies adopted by elders within each community) is often an effective path for building community wealth.

6. **Physical infrastructure at both the state and local level will be required**, in addition to the softer forms of infrastructure listed above. This might include (a) regional food warehouses that offer root-crop storage, freezer and cooler space, and clean dry space for storing foods that are harvested in season, and used later; (b) packing, packaging, and distribution spaces that are geared to the needs of local markets and responsive to local consumers; (c) food-processing facilities that help create entrepreneurship opportunities for Ohio residents, especially low-income. ACEnet's community kitchens and processing facilities is obviously an important model to draw upon; (d) efficient local distribution and logistics channels; and (e) facilities that reprocess items that are now considered "waste" for use as raw-material inputs for another industry (for example, recycling municipal food waste into fertilizer for nearby farms). The above list is not exhaustive, but is meant to offer examples of what local communities may choose to build. In order to ensure a secure food supply, local planning should determine how much food needs to be produced to have sufficient supply from each harvest year for local needs, including reserve storage to cover emergencies. Funds from the state's proposed 2011 Economic Development Program, totaling $6 million, could be used for these purposes.[54] Note that this report chronicles the development and growth of hundreds of businesses, tens of millions of economic activity, and thousands of jobs, all emerging while the prevailing food industry is undergoing a period of decline.

7. **Investing in building solid relationships of trust among community food system practitioners will help the food system cohere.** Without strong loyalty from consumers, Ohio farmers and processors will be unable to connect to local markets effectively. Moreover, as we enter an era of great economic and climate uncertainty, the ability of community members to trust each other enough they can work together to respond effectively to unforeseen change will prove to be the most critical element in Ohio's future success. Investing in effective communities of practice, resilient business networks, and capable nonprofits and extension educators who build community capacity will all be crucial.[55]

The potential payoffs are immense. If Ohio residents purchased only 15% of the foods they eat at home directly from Ohio farmers, with no intermediary, this would result in $2.5 billion of new farm income for the state — more than one-third of what farmers now sell to commodity markets.

Ultimately, the biggest obstacle to the emergence of the already-expanding community-based food business networks is a worldview that does not appreciate the importance of this work, and assumes that only rapid and showy progress will make a difference. This quest for rapid results, rather than patiently constructing a food system that actually attains the proper goals, is short-sighted and self-defeating.

It should be remembered that the only eras in which American farmers made sustained profits – such as the 1910-1914 period, or the post-World War II years, were possible primarily because the U.S. had few competitors as a producer of agricultural commodities. In each case, the productive farms of Europe were devastated by war, while developing nations could not produce, or transport, enough food to compete with American farmers.

American farmers were price-setters in both eras, but more importantly our national economy was in a privileged position relative to the rest of the world, using our industrial might, fossil-fuel-based technology, and military gains to maintain a dominant position. With recent reductions of trade barriers and increased production abroad (for example, Brazil now produces as many soybeans as does the U.S., even exporting beans to the U.S.)

From here on, America will always face steep competition unless oil is simply unavailable, or if there is a major calamity that knocks out transportation. At such a time, the U.S. would be forced to rely on its own resources and ingenuity, and would serve neither as importer nor exporter. As the data cited in this report show, America's emphasis on exports has often been illusory or self-defeating. Moreover, American exports have often harmed developing nations, undermining their farmers and creating dependence among their consumers.

Moreover, America's focus on technology has often been misplaced, creating domestic dependency as well. After doubling productivity over the past forty years, largely by adopting new technology and reducing the role of labor in agriculture, American farmers earned $11 billion less by farming in 2008 (a relatively good year) than they earned in 1969. Net cash income from raising commodities was even larger in 1929 than it was in 2008. That is to say, the benefits of new productivity and technology have not accrued to farmers, but rather to others in the economy. This dynamic reflects the dilemmas that developing-nation farmers face: exporting their best production while often going hungry themselves. Although American farmers have vastly more access to capital and markets than their counterparts in developing nations, they are trapped in many of the same cycles of dependency.

Future investment in biotechnology will have limited benefit unless this investment overturns, rather than perpetuates, the economic structures that create poverty in rural and urban communities. As practiced under this prevailing infrastructure, biotechnological solutions will only promote greater inequality, creating profit for the most privileged, but little or no benefit for the hungry. If the goal of a food system is to build health, wealth, connection, and capacity in Ohio communities, expanding community-based business clusters is a better answer.

The experience of Adam Moody, a fifth-generation cattle farmer near Indianapolis, Indiana, and a leader in the Indiana Farm Bureau who is writing a report on the state of Indiana agriculture, is highly instructive here. As a junior-high-schooler, Moody helped his father move away from a diversified farm operation into a corn and bean rotation on the family's 250-acre farm. "It just wasn't sustainable," Moody recalls. "There were too many external inputs." After two years, the Moodys brought back a variety of small grains and introduced a wide variety of livestock. Adam later purchased a nearby beef processing plant, and opened three butcher shops in metro Indianapolis. By vertically integrating his own operation he created exceptional efficiencies. Thirty percent of the sales in his storefronts derive from meats he raises on his farm. "Every one of these steps takes infrastructure," he adds, which in his case means investing personally. Still, he points out that the investment he made in opening one of his storefronts is only one-quarter of the amount it would take to buy a new combine that might be used for only a few weeks each year. Meanwhile, the storefront creates full-time jobs for nine people. Overall, Moody calculates, he creates one

job in his own cluster of firms for every ten acres of farmland he works. He cautions, "If we [Indiana] limit ourselves to commodities, we are destined to become a Third World state."[56]

Ohio, as a leading state in direct food marketing, and in setting effective food policy, should take the lead in moving the U.S. to a more self-determined future. Community-based foods will be the most solid step Ohio can take to move in this direction — and to fashion new jobs and economic recovery.

List of Interviews

Athens
Leslie Schaller, ACEnet
Larry Williams, ACEnet
David Gutknecht, former manager of Athens farmers' market

Bowling Green
Dave Beck, Center for Innovative Food Technology (CIFT)

Cincinnati
Ken Stern, Findlay Market
Charles Griffin, Enright Ridge Urban Ecovillage
Peter Huttinger, Neighborhood Gardens Coordinator at the Civic Garden Center
Brad Bernstein, chef at Lavomatic Restaurant
Melt Restaurant

Circleville
Perry Clutts, Pleasantview Farm, century farmer

Cleveland
Kim Scott, City of Cleveland Planning Department
Ifeoma Ezepue, City of Cleveland Small Business Project Director
Morgan Taggart, Cleveland-Cuyahoga County Food Policy Coalition and OSU Extension
Mansfield Frazier, Chateau Hough vineyard
West Side Market
Greenhouse Restaurant

Columbus
Colleen Braumoeller, Greener Grocer
Noreen Warnock, Local Matters
Several Columbus urban gardens and farms
Glory Foods (vegetable packer)
Ben Roth, Roth Produce
Jim Sanfillipo, Sanfillipo Produce
Jeni Britton Bauer, Jeni's Splendid Ice Creams
Brian Williams, Mid-Ohio Regional Planning Commission

Delaware
Rick DiNovo, Delaware Community Market

Gambier
Howard Sacks, Kenyon College
John Marsh, Kenyon College food service
Damon Remillard, AVI Food Systems

Oberlin
Chet Bowling, OSU Extension, at Oberlin New Agrarian Center

Pomeroy
Warren Taylor, Snowville Creamery

Toledo region
Bill Hirzel, Hirzel Canning Co.
Elizabeth Bergman, Sage Organics, vegetable farmer
Curt and Corinna Bench, Shared Legacy farms, vegetable farmers
Ralph & Gini Behrendt, Flying Rhino Coffee and Chocolate
Greenhouse Nurseries project
Martha Mora, Johnston Fruit Farm
Michael Szuberla, Toledo GROWs
Baldemar Velasquez, Farmer Labor Organizing Committee (FLOC).

Troy
Laura Hanson, Stone's Throw Market Co-op

Wooster
John Anderson, Local Roots grocery
Martha Alvarez, Martha's Farm, vegetable farmer who sells at Local Roots

Endnotes

[1] One analysis of Ohio's food business clusters was performed by Sporleder, Thomas L. (2007). "OHFOOD: An Ohio Food Industries Input-Output Model Version 9.0." Ohio State University AED Economics Department Report AEDE-RP-0096-07. The Ohio State University, November, page 1.

[2] Ohio Department of Development (2008?). "The Ohio Food Processing Industry." Downloaded from www.development.ohio.gov/Research/files/b405000000.pdf on February 9, 2011.

[3] James, Scott (2010). "The Future of Food." Forbes Corporate Social Responsibility Blog, September 28. Viewed March 26, 2011 at http://www.forbes.com/csr/2010/09/28/the-future-of-food.

[4] Ohio Department of Development (2008?).

[5] This author did not find a single source of data that provides a complete portrait of the Ohio food industry. Note that this one paragraph includes data from 2004, 2006, and 2008. Sporleder (2007) includes forestry products in its depiction of agriculture in 2004, so this report estimates the amount of sales that accrued to selling food through retail channels.

[6] Bureau of the Census, County Business Patterns data for 2008. Note that Sporleder (2007) finds even larger counts.

[7] Shafer, Jon (1982). *Toward a Sustainable Ohio in Food, Farmers and Land. A study of the food system of Ohio.* The Cornucopia Project.

[8] Meter, Ken (2009). *Mapping the Minnesota Food Industry.* Crossroads Resource Center. Available at www.crcworks.org/mnfood.pdf.

[9] Bureau of the Census, American Community Survey. http://quickfacts.census.gov/qfd/states/39000.html

[10] Calculation by Ken Meter using Bureau of Labor Statistics consumer expenditure survey data and Federal Census income data from the American Community Survey.

[11] SNAP data from Bureau of Economic Analysis. WIC data from State of Ohio (2009). "WIC Program Facts." Downloaded January 7, 2011 from www.odh.ohio.gov/ASSETS/

[12] Centers for Disease Control, Behavioral Risk Factor Surveillance System (BRFSS).

[13] Centers for Disease Control, BRFSS.

[14] Centers for Disease Control, BRFSS.

[15] Centers for Disease Control, BRFSS.

[16] Calculated using American Diabetes Association cost calculator.

[17] Centers for Disease Control, BRFSS.

[18] Ohio Association of Second Harvest Foodbanks (OASHF) "Hunger in Ohio 2010: Highlights of Findings." Survey of 4,092 food bank recipients in Ohio, along with MATHEMATICA Policy Research interviews with 1,989 feeding agencies served by Ohio's 12 foodbanks. Downloaded from http://www.oashf.org/news/view.php?category=publication, March 9, 2011.

[19] OASHF.

[20] OASHF.

[21] James, Scott (2010). "The Future of Food." Forbes Corporate Social Responsibility Blog, September 28. Viewed March 26, 2011 at http://www.forbes.com/csr/2010/09/28/the-future-of-food.

[22] Sporleder, Thomas L. (2007). "OHFOOD: An Ohio Food Industries Input-Output Model Version 9.0." Ohio State University AED Economics Department Report AEDE-RP-0096-07. The Ohio State University, November, page 9.

[23] Ohio Department of Development (2008?).

[24] Ohio Department of Development (2008?).

[25] Data on this page are drawn from U.S. Census of Agriculture, 2007.

[26] U.S. Census of Agriculture, 2007.

[27] Jones, Robert Leslie (1983). *History of Agriculture in Ohio to 1880.* Kent State University Press, 15-16.

[28] Jones, 41.
[29] Jones, 7.
[30] Jones, 53.
[31] Jones, 213-215.
[32] Jones, 216-221.
[33] Jones, 221-222.
[34] Jones, 222-224.
[35] Jones, 230-232.
[36] Jones, 235-237.
[37] Jones, 235.
[38] Meter, Ken (1979). *Money With Roots.* Crossroads Resource Center. Available at http://www.crcworks.org/roots.pdf.
[39] The federal government offered farmers non-recourse loans backed by the value of the crops that the farmer would produce. If the farmer could not pay back the debt, the lender (the federal government) could claim the crop, but could not place a lien on the farmer's other property. This helped protect farmers from the fact that prices were unpredictable. If crop prices fell, farmers could not be held liable for more than the value of their crop.
[40] Meter, Ken (1983) *Green Isle: Feeding the World and Farming for the Banker.* Crossroads Resource Center. Available at http://www.crcworks.org/gi.pdf. See also *Money with Roots.*
[41] Calculated by the author based on Midwest Consumer Expenditure Surveys by the Bureau of Labor Statistics. Data for 2008.
[42] USDA Economic Research Service (ERS), Food and Expenditures data Table 13: per capita food expenditures.
[43] Ohio Department of Development (2011). "Ohio Exports 2010 Origin of Movement Series." March. Table of Ohio Exports by Product, page 42. Viewed March 26, 2011 at http://development.ohio.gov/research/documents/b000000003.pdf (page 13 of this excerpt).
[44] Ohio Department of Development (2011). "Ohio Exports 2010 Origin of Movement Series." March. Table of Ohio Exports by Product, page 42. Viewed March 26, 2011 at http://development.ohio.gov/research/documents/b000000003.pdf (page 13 of this excerpt).
[45] Although derived independently, the figure of $4 billion is consistent with data from the Ohio Food Industries Input-Output Model for 2004. If extrapolated, this OHFOOD model could yield external purchases as high as $6 billion in 2008, although it should be emphasized this is a very rough estimate. See Sporleder, Thomas L. (2007).
[46] The Ohio Department of Development (2011) "Gross Domestic Product from Ohio" January. Table of Ohio Gross Domestic Products by Industry for 2008, page 14. Viewed March 26, 2011 at http://development.ohio.gov/research/documents/e100000001_11.pdf (page 19 of this excerpt) does not list farm inputs' contributions to the state GDP.
[47] Ohio Department of Development (2011). "Gross Domestic Product from Ohio." January. Table of Ohio Gross Domestic Products by Industry for 2008, page 14. Viewed March 26, 2011 at http://development.ohio.gov/research/documents/e100000001_11.pdf (page 19 of this excerpt). The table also lists food manufacturing's contribution to the Ohio GDP as $7.7 billion, and that of food service and drinking establishments as $9.7 billion.
[48] Ohio Department of Development (2011). "Ohio Exports 2010 Origin of Movement Series." March. Table of Ohio Exports by NAICS, page 61. Viewed March 26, 2011 at http://development.ohio.gov/research/documents/b000000004.pdf (page 8 of this excerpt). Sporleder (2007) lists considerably larger figures.
[49] Ohio Department of Development (2011). "Ohio Exports 2010 Origin of Movement Series." March. Table of Products Sorted by Concentration and Growth, page 13. Viewed March 26, 2011 at http://development.ohio.gov/research/documents/b000000001.pdf.

[50] See, for example, Swenson, David (2010). *Selected Measures of the Economic Values of Increased Fruit and Vegetable Production and Consumption in the Upper Midwest.* Available at http://www.leopold.iastate.edu/research/marketing_files/midwest.html

[51] Scholars in Vermont are attempting to calculate the percentage of food that Vermonters buy from in-state sources, and may create reliable estimation tools to address issues like these.

[52] Lengacher, Brandy; Kline, Terrence; Harpster, Laura; Williams, Michele; and LeJeune, Jeffrey (2010). "Low Prevalence of Escherichia coli O157:H7 in Horses in Ohio, USA." Food Animal Health Research Program, Ohio Agricultural Research and Development Center, The Ohio State University, July 24. Of course, there are other potential pathogens in any natural environment.

[53] Meter, Ken (2010). "Learning to Multiply." *Journal of Agriculture, Food Systems, and Community Development (JAFSCD)* 1:2, Fall.

[54] Ohio Department of Development (2011), "Draft Fiscal Year 2011 Ohio Consolidated Plan." Office of Housing and Community Partnerships, March, p. 68. Viewed March 26, 2011 at http//development.ohio.gov/Community/ohcp/documents/DraftFY2011OhioConsolidatedPlan.pdf.

[55] See also Williams, Brian (2010). *Central Ohio Local Food Assessment and Plan.* Mid-Ohio Regional Planning Commission and the Columbus Foundation, April.

[56] Interview with Adam Moody, March 10, 2011.