



Scaling Up Local Food

Investing in Farm & Food Systems Infrastructure in the Pioneer Valley

by Community Involved in Sustaining Agriculture



community
involved in sustaining
agriculture



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Scaling Up Local Food: Investing in Farm & Food Systems Infrastructure in the Pioneer Valley with live links is available online at:

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Local produce arrives in the kitchen of Square One Preschool in Springfield. Photo: Farm to Preschool and Families Project



Demand for local food in the Pioneer Valley is booming. Farmers' markets, CSAs*, and other direct market outlets are growing fast, but the local food sold through these venues still makes up only a tiny portion of the food consumed by the three-county region's 700,000 residents. Building a robust local food system—one that provides more food to the Valley's residents while supporting thriving farms and a vibrant local economy—requires scaling up our production, processing, and distribution systems. This infrastructure will help make it possible to provide locally-grown food at supermarkets, restaurants, lunchrooms and convenience stores throughout the region and during all seasons of the year.

This report challenges the Pioneer Valley community to play a stronger role in the creation and support of new business enterprises that fill gaps in our agricultural and food system. It summarizes what we at Community Involved in Sustaining Agriculture (CISA) have learned over four years of working on infrastructure projects with our community partners, and it highlights an emerging slate of opportunities for individual, business, and government investment and support.

CISA and other local organizations and individuals have examined several local needs: processing facilities for meat and poultry, milk, frozen produce, and small grains; cold storage facilities; distribution options, and more. Adding these businesses and services to the local food system is an essential next step in “scaling up” our local food system.

Farmers and local food advocates are tackling these challenges with passion and resourcefulness. Some examples of new enterprises and options include:

- Three years ago, Valley meat producers had to transport their animals over long distances to slaughter, but recently two medium-scale slaughterhouses and a mobile poultry-processing unit have opened for business in western Massachusetts and southern Vermont.
- With no local milk bottling plant, several local dairies have

built on-farm processing facilities and are selling milk, cheese, and yogurt. Other dairy farms have created new marketing or delivery services to improve their bottom line.

- A number of farmers, bakers, and others have begun growing and processing grains and legumes and creating small-scale marketing and processing options.
- Improved cooperation between lenders and new financing tools have begun to increase financing options for new food system ventures.

New food system enterprises face a number of steep challenges to business viability, including tight margins, limited financing options, and complex regulatory requirements. In addition to their financial objectives, these businesses may also hold goals related to environmental sustainability, job creation, a fair return to farmers, and the creation of healthy products that are affordable to a wide range of residents. When businesses achieve financial viability while providing wider community benefits they help to create a food system that works for all residents of our region.

In this report, we provide examples that highlight our many local successes and opportunities, but also illustrate the significant challenges that face new food system enterprises. A robust network of food and farm businesses can sustain a thriving local economy while feeding our region with healthy, locally produced food. Entrepreneurs, farmers, public officials, lenders, non-profits, and the larger community, working together, can create and support the infrastructure enterprises that will allow our local food system to go further towards feeding and sustaining us all.

Report Objectives

- Explore the benefits and challenges of supporting local food and agricultural system infrastructure in the Pioneer Valley.
- Provide examples of ongoing local efforts to fill key infrastructure gaps.
- Encourage public officials, food businesses, farmers, economic development agencies, and the general public to support these projects.

*Community Supported Agriculture

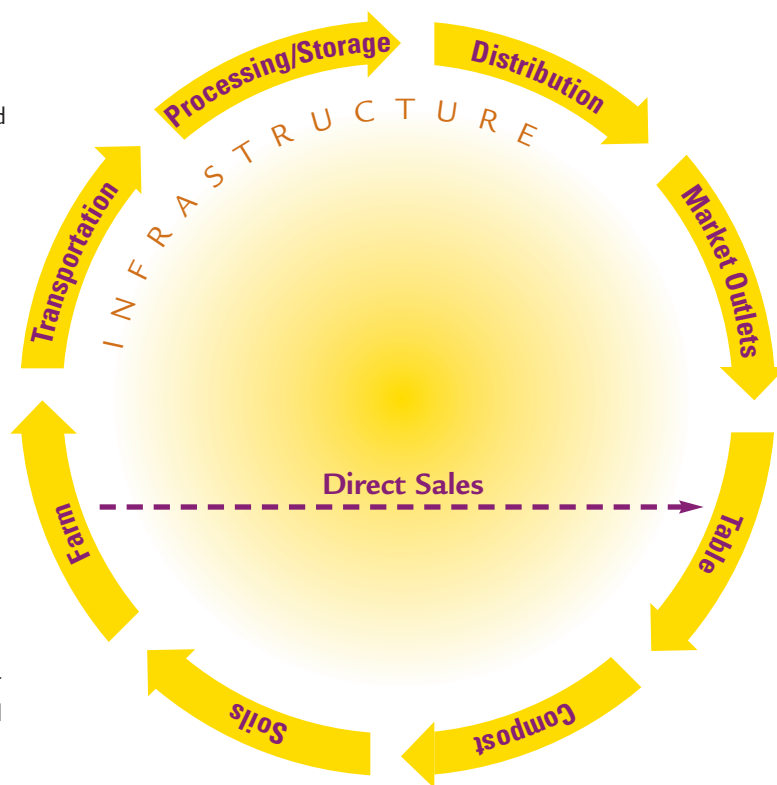
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Overview

What is Infrastructure?

Infrastructure makes possible all of the steps between farms and our kitchens. It includes transportation, processing plants, storage facilities, and market outlets. Infrastructure (buildings, equipment, and services) is critical to the supply chain—the assortment of businesses and relationships that move food from farm to table in our food system¹.

As our food system has shifted away from local and regional production and trade towards global sourcing, the infrastructure required to connect local farms with local markets has eroded. Local mills, slaughterhouses, butcher shops, and canneries are now rare in the Northeast. Similarly, the ordering and distribution systems we rely on to move food from place to place are based on a global food distribution system in which all farm products are available all year round. Infrastructure also has intangible components, such as skills and relationships. For example, a school cafeteria shifting from conventional “heat and serve” meals to meals with farm-fresh ingredients will need new relationships (with local farmers and suppliers), new equipment (such as tools for washing, cutting, and cooking), new skills (for cooking and serving fresh food), and new systems (such as food safety protocols and ordering systems).



Steps in the Farm-to-Table Supply Chain

Right: Serving line at the local foods potluck at CISA's Annual Meeting. Far right: The Real Pickles processing facility in Greenfield is committed to sourcing produce grown only within the Northeast region. Photo: Real Pickles





What Do We Need to Scale Up Local Food?

The rising consumer demand for locally grown food has created a vibrant arena of direct sales, including farmers' markets, CSA farms, farm stands, and pick-your-own operations. Massachusetts ranks second only to Connecticut in the average value, per farm, of farm products sold directly to consumers. Nonetheless, direct sales still account for only 8.6% of farm products sold in Massachusetts². Likewise, the majority of food that Americans eat comes not direct from farmers but from supermarkets (32%), restaurants (36%), or warehouse or superstores (10%)³. Appropriate infrastructure allows local farms to compete in these larger markets.

The infrastructure required for farmers to enter direct markets is relatively simple—pick-up trucks, farm stand displays, and the like. In contrast, connecting more local farmers with wholesale markets—and thus connecting more consumers with fresh local food—requires new businesses and services, such as aggregation and distribution, and new facilities for processing local products. Existing infrastructure can be cumbersome for local sales: local produce destined for Pioneer Valley supermarkets, for

example, must often travel first to a central warehouse out-of-state. Without appropriate infrastructure, farmers cannot get their products from their farms to our tables.

Our conversations with growers and buyers reveal real infrastructure needs. In the box below, we've listed some of the infrastructure facilities and services that would benefit the food system in the Pioneer Valley. We've also learned, however, that perceptions of what's needed can depend on where one sits in the food system. Farmers, for example, often assert that they do not have adequate options for slaughter and meat processing. Existing slaughterhouses contend that they need additional year-round volume to ensure profitability. (Our section on meat processing explains how they are both right.) Similar differences of perspective exist related to the need for shared or incubator kitchen facilities.

As momentum grows around eating local, needs can change rapidly. Three years ago, farmers' markets closed up for the season in October or November; now, year-round and winter markets are springing up all across the state. The success of winter markets has led to interest in facilities that could house year-round markets as well as centers for wholesale distribution and co-packing. Another example is the growth in grain production, which means we now have a need for new grain milling facilities.


Infrastructure Needs in the Pioneer Valley

- Meat and Poultry Slaughter and Processing Facilities
- Dairy Processing Facilities (milk bottling, production of dairy products ranging from ice cream to cottage cheese to hard cheeses)
- Temperature and humidity-controlled storage facilities (root cellars, refrigeration, freezers)
- Improved or expanded facilities for aggregation, basic processing, freezing, and co-packing
- Distribution and delivery services serving a variety of types of markets and farms
- Logistics services that coordinate ordering, delivery, and invoicing
- Grain processing facilities and equipment

Who Benefits?

New infrastructure solutions can benefit farmers by opening new markets, simplifying systems, or providing a higher return on the products they grow and sell. Infrastructure businesses are not “one size fits all”: different solutions work for farm businesses of different sizes or types, and it's important to create a variety of solutions. In some cases, larger farms can build on-farm infrastructure that meets their needs, while smaller farms may need shared facilities. Our local food system will be more robust if it includes some redundancy in services, providing choice and flexibility to farms and other customers.

Farmers are not the only ones to gain from infrastructure development, however. Agricultural infrastructure businesses bring important benefits to the community. Processing plants, for example, contribute to the strength of the local economy by paying local taxes, hiring local employees, and purchasing local



inputs and services. They may also create new, value-added markets for farmers and make new local products available to consumers. New distributors, likewise, provide a pathway to market for farmers while bringing products to consumers who were previously underserved or not served at all.

Currently, only a small fraction of the food we eat is grown in our region. A recent study estimated that current Pioneer Valley production could provide only about 16% of the food we consume here⁴, while another study gives a figure of 5.6%⁵ for all of Massachusetts⁶. In the long term, increasing this fraction will require significant shifts in our diets (primarily through reducing meat consumption) and our production practices. Options for increasing acreage in food production include returning some forested land to pasture or orchard production, shifting land out of tobacco, landscaping crops, and other non-food crops, and intensive planting on small plots in urban, suburban, and rural areas.⁷

Local AND Regional Food Systems

In this report, we talk about both *local* and *regional* food systems. In some cases, it's possible to get our food from the farmer down the road. In other cases, regional collaboration makes a lot of sense. Some processing facilities, for example, may require regional sourcing in order to have enough volume to cover their costs and meet market demand. Soil and climate requirements, the cost of land, and the size of typical farm parcels are among the factors that may determine whether a product is sourced from the Pioneer Valley or from more distant parts of our region, such as upstate New York or northern Maine. These factors may change over time, due to shifts in consumer demand, the price of oil, or global commodity prices.

Strengths of the Pioneer Valley Local Food System

Farmers tell us that they choose to farm in the Pioneer Valley because of the strong support for local agriculture. Clearly, the reshaping of the food system has begun here, and we have many assets on which to build:

- Excellent farmland and a variety of agricultural microclimates, including fertile bottomland, sloping orchard sites, and upland pastures, that support a wide diversity of agricultural products. 1,960 farms operate on 169,062 acres in the three counties⁸;
- A steady, if small, influx of new farmers, often with good experience and training from local farms, colleges, and incubator or training programs;
- Strong community support for local farm products and farm issues;

- Active agricultural organizations;
- A growing number of businesses using locally grown ingredients in processed products, many of them supported by the services of a shared incubator kitchen facility;
- Community gardens and farms, youth leadership programs focused on food and agriculture, and strong farm-to-school programs;
- A growing awareness of the connections between many overlapping goals, including a strong and resilient local economy, thriving farms and food businesses, equitable access to healthy food for all, and jobs that foster environmental and community well-being.

2 Infrastructure Needs and Opportunities

In the following sections, we focus on particular infrastructure areas: meat, poultry, dairy and grain processing, distribution, storage, and freezing of fruits and vegetables. We include current options, challenges and opportunities for future development.

Meat Processing

Mike Austin grew up on the Belchertown dairy farm that his great-grandparents started in 1889. As a young adult, he was eager to join the family farm business, but the financials just didn't add up. By 2006, the family realized that they could no longer sustain production costs that outstripped their milk check every month, and they began to consider other options. Meat production was a good fit: Mike and his parents knew animals, and they had grown beef for friends and relatives and knew that their product was good. The family began the process of converting their operation from milk to meat in 2006, but faced a significant obstacle in finding options for slaughtering and processing their animals into meat cuts and package sizes familiar to consumers. After some trial and error, the family found two different slaughterhouses, each at least two and a half hours away, for their product. "These slaughterhouses give us exactly what we and our customers want. We can rely on them, and we've built the transportation time into our business," says Mike Austin. The Austin family now has a meat CSA, sells at several farmers' markets, and provides meat to area restaurants.

Carolyn and John Wheeler also converted Carolyn's family dairy, Wheel-View Farm, to a diverse farm operation, specializing in beef, but also offering lamb, maple syrup, flowers, and perennials. Since beginning meat sales in 2002, they have built a loyal customer base for their grass-fed meat. The family business was threatened, however, when the closest slaughterhouse, Adams Farm in Athol, Massachusetts, burned down in 2006. For several years, the Wheelers scrambled to book appointments and arrange transportation to other, more distant slaughterhouses. "It was stressful for everyone," Carolyn remembers, "the family and the animals." With CISA's support, the Wheelers and a neighboring farm researched the feasibility of starting a new slaughterhouse themselves. Three factors halted that process: first, the strong negative reaction of neighbors at the proposed site; second, the recognition that adding a second business venture to their existing enterprises did not make sense for their families; and third, the challenge of financing. When Adams Farm Slaughterhouse re-opened in 2008, the pressure eased for the Wheelers. "Adams works for us," Carolyn reports. "There is sometimes a bottleneck on the meat cutting side, and I think that another business, doing cutting only, would be very useful." A meat-cutting shop, Carolyn notes, might not meet the same opposition that the proposed slaughterhouse did, but the challenges of financing and management remain.

The rebuilding of Adams Farm Slaughterhouse provides an example of the potential for joint public and private support for agricultural infrastructure. Finding financing and rebuilding the slaughterhouse took two years and required the hard work and determination of the Adams family, as well as outside support. That support came from state and federal government agencies, local communities, and private banks. The Massachusetts Department of Agricultural Resources, for example, provided funding for the new slaughterhouse, which now provides a range of slaughter, meat-cutting, and smoking services to customers from throughout Massachusetts, southern New Hampshire and Vermont. In addition, to maintain volume throughout the year, the slaughterhouse brings in animals from as far away as Pennsylvania.

Austin Brothers pork sausage for sale at the Northampton Winter Fare. Photo: CISA (Jason Threlfall)





Meat cutting and hanging at Adams Farm Slaughterhouse. Photos: Ivy Ashe for the Vineyard Gazette

The Adams Farm example provides a good illustration of how completely the system for processing and distributing locally grown food for local markets has been dismantled, and how challenging it will be to rebuild. Adams Farm is one of only two USDA-inspected slaughterhouses in Massachusetts. It has gone a long way towards relieving the pressure once felt by the Wheelers and others, but the region still lacks sufficient slaughter and meat processing options to offer farmers choices in services, location, and price. Many farmers must still transport animals long distances to slaughter, which increases costs and can affect meat quality by stressing the animals.

Despite the call from farmers for additional slaughter options, Adams Farm and some other regional slaughterhouses report that fluctuating seasonal demand presents significant financial and management challenges⁹. New meat processing facilities face an uphill climb to economic viability, and, by creating competition, might jeopardize the already slim profit margins of existing slaughterhouses in the region

Challenges to slaughterhouse survival

CISA's slaughterhouse study¹⁰, completed when Adams Farm was off-line, examined options for building a small-scale facility—one that could function with a maximum of six full-time processing employees, processing approximately 1,200 “animal units”^{*} per year. In the context of the contemporary American meat packing industry, a small-scale slaughter facility of this size is an anomaly. The industry is dominated by facilities processing thousands of animals per day from many states. Ownership is consolidated from stockyards through to branded meat¹¹. In order to provide the volume of animals needed to achieve the target price for the mainstream retail market, the industry relies on industrial feed lots.

The CISA study found the key challenges of successful slaughterhouse development in the Pioneer Valley include:

- **Siting** – Slaughterhouses have a bad reputation, reinforced by instances of poor management practices. Even though a small facility would be much less likely to produce the odor or noise associated with large meat packing plants, neighbor relations and waste treatment are complex and important issues.
- **Economic Viability** – Profit margins are historically low for meat processing. Large plants counter this problem by investing in mechanization, which reduces labor costs, but this level of capital intensity requires an economy of scale that small facilities cannot afford.
- **Seasonal Demand** – Demand for slaughter services varies considerably throughout the year, and this fluctuation is sometimes matched with shifts in the species mix in different seasons.

^{*}“Animal units” are used to compare animals that are unlike in size, such as beef cows and lambs.

As a result, farmers become frustrated by scheduling constraints during the slaughterhouses' busy season in fall and early winter, while slaughterhouses face a dramatic decline in demand during late winter, spring, and summer.

- **Labor Availability & Longevity** – Small slaughter and meat processing facilities rely on skilled manual labor. Qualified people to fill these positions are often difficult to find and retain. Good management is also crucial to success, and a small facility may not be able to offer a sufficient salary to attract experienced managers and other staff.

- **The Regulatory Environment** – Federal, state, and local regulations all impact the slaughter and processing options available to farmers. Confusing and sometimes contradictory statutory language and differing interpretations and priorities among agencies with overlapping oversight authority can make navigation of regulations challenging. Funding for regulatory enforcement is also an issue, and a shortage of inspectors makes it unclear whether USDA would be willing to place an inspector at a small plant that is not slaughtering full time.

Options and Opportunities

As the demand for locally grown meat continues to rise, the availability of slaughter and processing services may influence whether or not farmers choose to expand production in order to meet demand. If production expands, increased volume (and cash flow) could create an opportunity for new and existing slaughter or meat processing businesses to provide improved or expanded services. Options for new facilities include not only a full USDA-inspected, fixed-site slaughterhouse, but also mobile units*, meat-cutting and wrapping facilities, and on-farm facilities, particularly for poultry.

Aside from building new facilities, however, other strategies for improvement are also possible, including improvements to the regulatory system; technical assistance and financing designed to improve services at both custom and USDA-inspected slaughterhouses; and training for farmers focused on year-round finishing of animals in order to alleviate crowded fall slaughterhouse schedules.

Community support will be important to the success of any new or existing facility, and to efforts to achieve regulatory change. Greater public awareness that slaughter and meat processing options are essential to the long-term viability of local farms could make the siting of a new facility less controversial. Supportive local and state agencies are also important. By the same token, facilities that are responsive to farmers' needs and allow opportunities for farmer feedback and involvement will earn a customer base committed to their success.

*See our sidebar on mobile poultry processing (pg. 10). Another example is the Glynwood Institute's mobile slaughter unit in the Hudson Valley. Note, however, that mobile units for meat (as opposed to poultry) processing require appropriate docking sites and fixed facilities for hanging, cutting, and wrapping the meat. One source for more information is the National Good Food Network's webinars on regional meat processing.



Pigs at Brookfield Farm in Amherst. Photo: DigitalVues

Mobile Poultry Processing

Lack of slaughter facilities has severely limited production of poultry for meat in Massachusetts. Governed by a complex array of federal, state and local regulations, there are very few of these facilities in Massachusetts and throughout the region. Until very recently, the only USDA-inspected poultry plant in New England was a privately owned, in-house plant that only processed birds grown on-site. Other options were limited to on-farm and custom processing, which provide only limited marketing opportunities, or none at all.*

Beginning in 2008, however, a state-approved mobile poultry processing unit (MPPU) made on-farm processing and local, direct marketing of birds possible throughout the state.** Representing more than 10 years of effort by two non-profits, as well as state and federal financing, the MPPU is owned by the New England Small Farm Institute (NESFI) and operated by NESFI and the New Entry Sustainable Farming Project. It took several years to gain approval for the MPPU from multiple state, federal, and local agencies. (Through “home rule,” Massachusetts grants an unusual degree of oversight to local Boards of Health, which adds a layer of complication to mobile facilities, because they must receive approval for siting by multiple local authorities.) Although still considered a pilot project, the MPPU was used by three farmers during 2010, its third year of full operation.*** “We have learned some important lessons about managing shared infrastructure,” says Judy Gillan of NESFI. “In 2011, we will focus on much tighter management oversight, a more centrally located user group [to reduce transport miles], and a close look at the economic feasibility of capitalizing and operating MPPUs as a business enterprise.”

Jennifer Hashley, Director of New Entry, notes that a second-generation MPPU began operation in 2011, alleviating some of the logistical and transportation challenges related to using one unit across the whole state. She also expects that some of the businesses that have gotten started by



Marc Cesario of the former Greenhorn Farm in Amherst transferring birds from the scald to the plucker on the MPPU. Photo: New Entry Sustainable Farming Project

using an MPPU will need to consider fixed-location or on-farm slaughter facilities as they grow. “It would be wonderful if the MPPU served the needs of start-up and small-scale businesses, and maturing businesses could move on to another option. Clear guidance from the regulatory agencies could help farmers who want to build their own slaughter facilities,” says Hashley.

*Poultry processed at an approved on-farm plant can be sold, within the state, to the end consumer, but not to restaurants and retailers. In custom facilities, birds are slaughtered for—and must be consumed by—their owner or his or her family or guests.

**Two additional mobile poultry processing units now operate in the state, one on Martha’s Vineyard, and a second generation mobile unit serving the eastern half of the state.

***CISA’s December 2010 online profile¹² includes more information about one poultry grower using the MPPU.

Dairy Processing

Dairy farmers, sometimes called the “anchor tenants” of New England farmland, are both important and vulnerable. Dairy farms are larger, on average, than other farms in our region, and keep a significant share of farmland in production. In recent decades the number of dairy farmers in Massachusetts and throughout the region has shrunk dramatically, in response to rising input costs like feed and fuel and the unpredictable—and often very low—price of milk. Between 2003 and 2009, nearly a quarter of the Commonwealth’s dairy farms ceased production, bringing the total statewide to 180 and in the Pioneer Valley to 77¹³.

A recent study¹⁴ by American Farmland Trust (AFT), in cooperation with CISA, describes the importance of the dairy industry, the challenges of achieving profitability on New England dairy farms, and the potential impact of an investment in infrastructure for dairy processing. The report details the dairy industry’s benefits to the region’s economy, its landscape and environment, and its communities. These include fiscal benefits to local towns, nutritional and food security benefits to consumers, and quality of life value to residents of the region. The Pioneer Valley’s dairy farms produce about 15% of the dairy products consumed and processed in the three-county region, and importing milk products from other regions has both economic and environmental costs, the report notes.

Despite these important benefits, dairy farms in the region are vulnerable. According to the AFT report,

The future does not look promising for dairy farmers who solely rely on wholesale milk marketing. Although federal and state leaders have signaled a willingness to consider reforms to dairy policy to improve farm income and reduce price volatility, the current climate of cost-cutting in government suggests that this is an uncertain route to financial stability on dairy farms. Sustained farm profitability for dairy farms in the Valley seems unlikely unless they can reduce their costs, improve milk prices through different marketing strategies, or diversify through new sources of on- or off-farm income.

Dairy farms in the Pioneer Valley are pursuing all of these options, including retaining a greater share of the consumer milk dollar through the sale of branded local milk products. It’s more



Warren Facey of Bree-Z-Knoll Farm in Leyden. Photo: CISA

difficult, however, for dairy farms to take advantage of the rising demand for local food, because most milk products must be processed before sale to the consumer. Selling a branded local milk product requires dairy farmers to take one of the following approaches:

- 1) **Build an on-farm processing plant.** Despite the significant investment required, a number of local dairy farmers have built their own facilities. Mapleline Farm in Hadley built an on-farm processing plant that supports their successful local delivery business. CISA’s profile of Sidehill Farm¹⁵ explores the development of their on-farm yogurt processing facility. Chase Hill Farm, Hillman Farm, Robinson Farm, and others have developed successful lines of cheese that are sold locally and beyond.
- 2) **Sell raw milk directly to consumers.** The price of raw milk is not determined by the federal milk order, and as a result, raw milk sales provide important additional revenue to a growing number of farms. However, raw milk must be sold directly from the farm in Massachusetts, a rule that limits farms from expanding sales into retail outlets.
- 3) **Arrange for milk processing by an existing processing plant.** Processing options are limited and may not suit the needs of the dairy business for a variety of reasons, including the following:
 - Limitations on the volume of milk that can be processed at an on-farm plant;

Two examples of on-farm infrastructure created by farmers to meet the needs of their expanding businesses. Right: Ray Robinson holds a wheel of Hardwick Stone cheese in the Robinson Farm's brine tank aging room. Photo: Robinson Farm. Far right: Chocolate milk being bottled and capped at Mapleline Farm in Hadley. Photo: Paul Kokoski



- Inadequate bottling options, including both the range of sizes and types of packaging available;
- Lack of existing processing capacity for small batches of certain products (such as cream, half-and-half, and butter) or package sizes; and
- Limitations on segregation of milk from specific farms or regions, precluding source identification of the final product.

Farmers have devised creative solutions to these challenges and the region benefits from wonderful local cheeses and delicious, fresh milk and yogurt. Although these successes are important and worth celebrating, they reveal an important underlying problem: most local solutions to the problem of increasing revenue on dairy farms have been improvised on an ad-hoc, farm-by-farm basis. In addition, such innovations require dairy farmers to learn an array of new skills in order to run processing plants, cheese-making facilities, and marketing and distribution businesses. The next step in creating a vibrant, resilient and larger regional food system will require a greater diversity of processing options, such as regional processing plants capable of small-batch processing for several businesses, shared cheese-making or aging facilities and incubator facilities with equipment and expertise suited to dairy products. See AFT's recent report for an exploration of the potential community-wide economic benefit of investment in such processing capacity.

A new, shared-use regional dairy processing facility would share many of the challenges faced by meat processing start-ups, including financing, economic viability, and cash flow, as well as the difficulty of finding skilled managers and reliable labor. Milk production, like meat production, has seasonal variations in both supply and demand, and milk plants need to build in a plan for “balancing” milk in order to match market demand with local production. Doing so means transforming excess milk into additional products, or transporting and selling it to other processors in some seasons; and obtaining additional milk at other times. Trucking of raw milk from the farm to the processor is an additional cost that may change with a shift to a new processing plant, particularly if the production of a branded or source-identified milk product means that the milk can no longer be transported with milk from neighboring farms.

Dairy farming and the small-scale production of dairy products has been financially risky for many years, and farmers and small processors who have built successful niche markets are often wary of new entrants to the local market. Locally produced dairy products, however, represent only a tiny fraction of the dairy consumed in our region. Adopting strategies to increase this market share will help stem, or even reverse, the rapid loss of regional dairy farms, while allowing Valley residents to enjoy a wider array of local dairy products.

Processing, Distribution, and Aggregation

In this section, we provide a brief introduction to some additional infrastructure challenges—and some local solutions.

Cold storage: The expanding year-round market for locally grown food has led to an increased need for cold storage for crops that are harvested in the fall but can be sold all winter. Growers are scrambling to find and build adequate cold storage facilities to meet demand, and large buyers such as hospitals and retailers are also interested in cold storage options that serve their needs. Information is needed about energy-efficient storage facility design; cost-benefit analysis of transportation to and from off-farm storage facilities; and successful models for shared operation and use of storage facilities.

Grain production and processing: Several farms in our region are growing grains for sale to bakeries and other processing businesses, retailers, specialty food producers, and individual consumers. Local grains are now available at some farmers' markets, through grain and dry bean CSA shares, from farm stores, and in bread at local bakeries. Some equipment, including that needed for small grain aeration, cleaning, hulling, and milling, is now available through shared use or fee-for-service arrangements. Much of the demand for grains has been driven by bakers. A new business, Valley Malt, is now working with growers to grow barley and other grains for artisan and home breweries. Grains are a relatively low-value crop and farmland in our region is expensive, but these growers and processors are demonstrating ways to make grain production work as part of crop rotation schedules and in response to market interest. Advocates note that consumer education related to the benefits and use of whole grains and the price of locally-grown grain is needed. As volume increases, additional milling options will be required.

Distribution/Aggregation: Food distribution includes transportation, storage and handling (such as refrigeration), and logistics. Aggregation allows a distributor to consolidate product from several sources in order to meet the needs of a buyer. The distribution and aggregation needs of different markets can be quite different: supermarkets, for example, may receive full tractor trailer loads of one vegetable at their central warehouse, while restaurants need smaller quantities of a diverse array of


products. Ordering systems (on-line vs. phone or fax, for example), delivery frequency, and communication and customer service are all important to buyers. Some distributors sign contracts with their buyers or have a minimum order size, making it harder for buyers to receive products through other channels, such as direct from farmers. Likewise, some farmers who also provide distribution services buy in product from other growers or other regions to supplement their own product during all or part of the year, allowing them to provide a wider range of products to their buyers. Some distributors also provide basic processing services, such as peeling or chopping.

More and more distributors identify the source of the product by farm, location, or distance. Distributors can support local growers in a variety of other ways, including highlighting what is in season on their order sheets, providing clear information to growers about packing and grading requirements, and working to identify and adhere to prices that ensure an adequate return to the growers.

Value-added Processing: The Western Massachusetts Food Processing Center (FPC), operated in Greenfield by the Franklin County Community Development Corporation (CDC), is a business incubator and shared-use commercial kitchen that has provided services to 200 food businesses since opening in October 2001. The FPC's manager assists with recipe development and scaling up production, and the CDC can also help with business plans and start-up loans when needed. The FPC was originally envisioned as a place where farmers could turn excess product into value-added products such as jams or salsas, but today the



Andrea Stanley of Valley Malt skimming the steeping barley in their processing facility in Hadley. Photo: Christian Stanley



users of the FPC are mostly non-farming entrepreneurs starting up new food businesses, some using locally-grown ingredients. In some cases, the FPC provides co-packing services, allowing farmers to supply ingredients and obtain a finished product for sale without providing the labor or recipe development. The FPC also provides important opportunities for business operators to share information about using local ingredients and sourcing from local farms. Real Pickles, a FPC graduate, offers a valuable case study of a business dedicated to the use of locally grown, organic ingredients, despite some inherent challenges related to seasonal sourcing and year-round storage.

Freezing Produce: Frozen produce has a logical place in the array of locally grown foods available. Freezing makes summer-

harvested fruits and vegetables available in the winter, and provides food in a format that works well for cafeterias and institutions. The FPC, with support from CISA, conducted a pilot freezing project in 2010 in response to interest from buyers. They froze chopped broccoli for the Holyoke Public Schools, and additional products for two growers who planned to offer frozen produce as part of a winter CSA share. Their report¹⁶ on the project outlines challenges related to equipment and storage, sourcing and aggregation, and finding a price that works for all parties. An accompanying brief from CISA¹⁷ reviews retailer interest in frozen product and a mobile model from Vermont. Initial response from buyers (and the schoolchildren they serve!) has been very positive, and the FPC is expanding the project in 2011.

The Regulatory Environment

Regulatory requirements impact many aspects of growing and marketing local food. Regulations serve important goals, such as the cleanliness of food and the health and safety of workers, but may also influence which products, from which businesses, make it to market. The interplay of local, state, and federal regulations means that requirements vary from state to state and even, in some cases, from town to town. Here are a few examples of how the regulatory environment can impact farm and food businesses:

- Mobile poultry processing is regulated by three different state agencies, one for wastewater and solid waste management, one for flock health inspection and bio-security, and a third for food safety issues and licensure. Farmers must integrate the requirements of each agency into a single management plan.
- In Massachusetts, “home rule” ensures that broad powers are reserved for local boards of health. One town, for example, may require farms selling meat at a farmers’ market to have a plug-in freezer, while in another town, coolers and regular temperature checks are sufficient. Fees, too, can vary considerably, but most have risen in recent years due to state and local budget cuts.

- Many common farm labor arrangements, such as providing housing for college-aged summer workers or using volunteer labor from CSA members, can bring farmers into violation of labor and housing codes, each governed by several different state and federal agencies.
- Recently food-safety scares have led large buyers, such as supermarkets, to require producers of pre-washed salad greens¹⁸ to adopt expensive and time-consuming new food safety protocols. Since these requirements, to date, are market-based (not mandated by government), requirements are often opaque, and sample protocols may be both hard to access and largely irrelevant to diverse Northeastern farms. Scale-appropriate protocols could avoid disadvantaging local and regional farms while protecting consumers.
- Recent federal legislation gives the Food and Drug Administration greater oversight of farms and processors, including basic processing like washing, peeling, and chopping. This legislation could add significant new requirements for medium and large farms, but the full impact will be unclear until regulations are written and the appropriations process is complete.

3

How Does a Community Invest in Infrastructure? ●●●●●

The success of any of the infrastructure projects described in this report will require collaboration between committed entrepreneurs and a supportive community. If we imagine a future in which profitable infrastructure businesses are providing essential services at every level of our local food system, what kinds of investments do we need to make today to make that a reality? We suggest some approaches below.

Improving the Business Environment

Public Support

Just as “buy local” campaigns, farmers’ markets, and community-supported farms have moved from the fringes to the mainstream in the past decade, the need for local food infrastructure needs to become a part of the public consciousness. Words like “food processing,” “livestock,” and “slaughterhouse” conjure up images of the massive operations used in the global industrial food system, and a “not-in-my backyard” attitude can result. Community support can blossom, however, when neighbors recognize the more limited impact of facilities designed for local and regional needs.

Each of our Pioneer Valley communities has its own rich history of small, community-scale food infrastructure: country stores selling local produce, mills and bakeries, and home-scale cold storage powered by door-to-door ice deliveries. Springfield was home to the nation’s first meat-packing operation, a preserved pork warehouse owned by William Pynchon in the 1600s. Every community once had dozens of food-related businesses, almost all of which have withered away as the global food industry has consolidated.

A growing number of communities are reclaiming their food history and taking pride in the resurgence of old-fashioned ingenuity and self-sufficiency (mixed with a dose of modern technology and smart financing) in the form of small food businesses. Also referred to as “community food enterprises,” these for-profit or not-for-profit ventures fill gaps in the local food system infrastructure while maintaining a “triple bottom line” of environmental, social, and financial health.

In some cases, concerted community action has fostered the creation of a cluster of food enterprises, which together have the potential to have a significant impact on both the food system and the economy. Examples include Hardwick, Vermont¹⁹, where dozens of new food enterprises have emerged in recent years, and Woodbury County, Iowa²⁰, which combined tax incentives, regulatory reforms, grants, and private financing to engineer a shift to organic agriculture and local marketing.


Public Policy & Regulation

Massachusetts is no longer a fundamentally agricultural state. As a result, policy-makers sometimes ignore the potential of farm and food businesses to be an economic driver in the region. Good communication between economic development programs, agricultural technical assistance providers, regulators, planners, and those promoting “green jobs” could help to harness the power of farm and food businesses to contribute to a thriving green economy.

State and local governments support farm businesses in a variety of ways, including farmland protection, business training, operation of farmers’ markets, and support for local purchasing in schools, jails, and other public institutions. At the same time, layers of regulatory authority laid down over time and across different agencies can unnecessarily complicate the requirements



Good food, laughter and conversation about food and farm business success at CISA’s Annual Meeting. Photo: CISA (Jason Threlfall)



that farmers and food business must follow. (See the regulatory sidebar on pg. 14 for some examples.). Consumers and policy-makers who understand the importance of local farm and food businesses can help to support policies and regulations that safeguard public health while supporting local food businesses.

Federal farm, food, and business policies all impact local farms and the climate in which new food-related businesses operate. Current federal policies, for example, dictate which farmers receive subsidies, how research dollars are spent, and how organic growing practices are defined. Food policy affects what children are served in school, the ease of using SNAP benefits (previously food stamps) at farmers' markets and farm stands, and how food safety is protected. The lack of enforcement of anti-trust policy has contributed to significant consolidation in arenas directly related to agriculture and food, such as seed production and meat processing.*

Although some federal programs recognize the importance of locally grown food, these represent only a tiny fraction of government funds and policies that create the climate in which farm and food businesses survive or fail. Widespread citizen action could result in federal policies that support, rather than hinder, growth in local and regional food systems.

Growing Entrepreneurs: Business Development and Technical Assistance

Entrepreneurs are a key to the development of new or expanded infrastructure businesses, and need support at all phases of business development. Many organizations in the Pioneer Valley provide business planning and technical assistance to small businesses. This support can help business owners write a business plan, understand options for financing, evaluate their product mix, or navigate the challenges of running a family business. Few small business support agencies, however, have extensive experience with the new business models being tested in the new food economy, nor are they familiar with the regulatory challenges faced by food businesses or the logistical hurdles represented by seasonal sourcing. Training and resource sharing on the specific needs of local food and farm enterprises can ensure that business owners find appropriate expertise at small business support agencies throughout the Pioneer Valley.

Networking among food business owners is another important avenue for learning. Providing technical assistance in settings that allow for networking and peer-to-peer learning may help to jumpstart an active network of entrepreneurs.

Financing for Infrastructure

Anyone starting or expanding a business needs to get financing from somewhere, whether it's personal resources, family members, credit cards, community-based lenders like Community Development Corporations (CDCs), local banks, or investors. Financing allows a business to cover start-up and operational costs until revenues begin flowing in. To be eligible for financing, a business needs to prove to lenders or investors that it is likely to succeed, and often must provide capital sources with either collateral (to protect against borrower default) or equity (a partial ownership stake in the business). Riskier business models need to find sources of capital that are willing to accept a higher level of risk.

Small food enterprises, particularly if they are start-ups, are likely to be considered "higher risk" borrowers, because they:

- Are bucking the trend of consolidation of food systems;
- May be perceived as entering a non-growth industry;
- May need community investment in order to achieve profitability;
- May rely on unconventional business or ownership models;
- May offer a lower or slower return to investors.

*For more information on the impact of consolidation on the growth of local food systems, see Tom Philpott's column, "Time for the Public to Reinvest in Food-System Infrastructure," *Grist*, April 20 2010.

**A classic example of the use of customer financing for business expansion is the use of "deli dollars" at the Great Barrington Deli (http://www.smallisbeautiful.org/local_currencies/BTC.html) in the early 90s. More recently, Northampton's Hungry Ghost Bakery offered "bread shares" to fund building renovations and brick oven construction.



Ownership and Local Accountability

Local food businesses generate community support because they provide high quality products and services, local tax revenue, and wider community benefits, which may include jobs, a fair return for farmers, and environmental stewardship. Local ownership helps to ensure an ongoing commitment to providing these benefits to the local community. Ownership by farmers can return a larger share of the consumer dollar to farmers and builds in a preference for using local farm products as ingredients.

Farmers, however, already have at least one business to manage, and may not want to add another. The capital that farmers can bring to a new business is often secured by the land that they own, and mortgaging that land may pose an unreasonable degree of risk if the existing family business, residence, and history are all tied to that land. In addition, some farmers might not possess the business and financial management skills needed to run such new businesses.

Other options include shared or cooperative ownership, opportunities for farmer buy-in over time, and creation of facilities committed to shared use. Often, the largest

farms are best positioned to invest in new infrastructure, and creative business structures can help to ensure that infrastructure facilities are available to small and start-up farms as well.

A group of Massachusetts dairy farmers interested in producing electricity from manure and “source-separated organics,” or food waste, have come up with an innovative solution for ownership and management. They’ve formed a business, owned by five dairy farmers, a business consultant, and a waste hauling firm, with the farmers retaining majority ownership. Each farm will install a methane digester with an identical design. The five digesters together will provide employment for two technicians, relieving the farmers of day-to-day management, while the other partners bring important business skills and experience. The linked digesters also provide redundancy for suppliers of food waste, who can be assured that even if one digester is down for repairs, their waste can go to another one. “I could make more money if I did this alone,” notes Peter Melnik of Bar-Way Farm. “But I milk cows and raise vegetables, and I have two young kids at home. We’ve set up something that will work for me.”

Some start-ups in need of high-risk financing turn to personal networks of family, friends, or even customers;** a few are lucky enough to win highly competitive grants. These options, however, are not available to most entrepreneurs. Local food systems all around the country are looking to strengthen options for higher-risk investments. At the same time, many professional investors are being asked by their clients how they can invest in sustainable food systems. These converging groups are creating “social finance” models such as Slow Money, both a nod to “slow food” and a rejection of “fast money”.

The Pioneer Valley Grows (PVGrows) Loan Fund is a new financ-

ing option dedicated solely to local food system infrastructure development in the Pioneer Valley. The \$1 million fund offers loans to small food enterprises that would be too risky for banks or even community-based lenders. Using pooled funds from a number of community loan funds and “program-related investment” funds from small foundations, PVGrows offers mission-driven loans at below-market rates.

The next step for PVGrows will be to launch a “community capital” fund, which will provide an opportunity for members of the general public to make small-scale investments in the local food system. Traditional investors shy away from this type of high-



Community demand has fueled winter farmers' market expansion. Ben Clark of Clarkdale Farm in Greenfield at CISA's Northampton Winter Fare. Photo: CISA

risk, low-return model, but a growing segment of local food supporters see an opportunity to put some of their capital to work in their own community.

Planning for Local Food²¹

Investment doesn't always mean "dollars." Here are just a few other ways the broader community is helping pave the way for infrastructure development in the Pioneer Valley:

1. Strategic food-systems planning provides valuable direction.

- The Pioneer Valley Planning Commission places food and farming squarely at the center of its plans to "develop a green regional economy"²² and has identified natural resource-based businesses, such as farms, as a key area of growth.

*A good example of successful connections between institutions and producers can be found in Eau Claire, Wisconsin. Read more at the Sacred Heart Hospital website.

- Community Food System Assessments have allowed towns such as Northampton²³ and Shelburne Falls²⁴ to inventory their food system needs and assets. A logical next step would be a valley-wide food system assessment with a formal food system infrastructure inventory.
2. Diverse communities are clarifying and acting on their food system priorities.
- The PVGrows network regularly convenes diverse stakeholders—from farmers and food processors to distributors, emergency food providers, farm land protection groups, buyers, and consumers—to discover opportunities for collaboration in the development of a healthy and sustainable Pioneer Valley food system.
 - Residents of the town of Wendell voted to hire a Local Food Coordinator to support commercial and home-scale food production in town.
 - Individuals and community groups throughout the region are holding events that help residents learn how to use local ingredients and support local businesses by pickling, preserving, baking, brewing, and more.
3. Institutions are using their purchasing power and public profile to create new infrastructure services for local food:
- The Holyoke Public Schools Food Service contracted with the Western Massachusetts Food Processing Center to freeze locally grown vegetables for winter use (see page 14);
 - Institutional buyers, such as Baystate Health Systems and the University of Massachusetts, are interested in sourcing pre-cut or peeled local vegetables. Adding this capacity may allow farmers and distributors to expand into other markets, such as frozen vegetables;
 - Non-profit preschools in Springfield, with support from Live Well Springfield and the Massachusetts Farm to School Program, contract with local growers to deliver healthy locally grown food.

Conclusion

Thriving farms benefit local communities, residents, and regional economies. We will all gain if our communities support farms of many sizes and types, producing a wide variety of products that are available in all of the places that we buy food, including supermarkets, food co-ops, corner stores, daycare centers, schools and colleges, and urban and rural markets.

A healthy local and regional food system will support not only strong and diverse farm businesses, but a network of businesses and services using those ingredients and making them available to all corners of our region. These businesses, too, benefit us all: they pay local taxes, employ local people, circulate dollars in the local economy, and provide us with food and farm products that we want and need.

Despite the benefits these businesses bring to our communities, starting and sustaining them is not an easy task, particularly when business owners are focused not only on their business' financial health but also on its social and environmental impact. Community members can play many roles in supporting these businesses, beginning with being welcoming neighbors and regular consumers, but also including our roles as town officials or volunteer board members, investors and advocates at the local, state, and federal level. Buying local food is a good place to start supporting local agriculture, but we can't stop there. Scaling up our local food system and achieving the goal of making healthy local food available at all of our region's tables requires a commitment to strengthening local communities and active involvement from local residents.

All of us eat, and we are all affected by the quality of our food and the health of our communities. We are lucky to live in a region with good soils, ample water, and diverse farms, and we can build on those strengths to ensure that agriculture sustains our communities long into the future.

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