

Food and Farming in the Quabbin Region

A Community Food System Assessment of Athol, Barre, Hardwick, Orange, Petersham, and Warwick



HENRY P. KENDALL FOUNDATION



Kathleen Doherty | June 2016

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Cover photos: Produce on the shelves courtesy of Quabbin Harvest co-op; John Moore and granddaughter Sienna courtesy of Moore family and Cathy Stanton; young girl at a co-op event courtesy of Quabbin Harvest co-op

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Chapter 1: Introduction

What is a community food system assessment?

Food is a subject that brings together people of all backgrounds and organizations working on a diversity of issues, ranging from economic development to land protection and from hunger relief to waste recovery. The food system is a complex system that encompasses all the pathways food takes, from the farm where it was grown onto the consumer's plate and then back into the soil.



Graphic from Food Well Alliance, <http://www.foodwellalliance.org/>

A community food system assessment is a tool for analyzing and assessing the assets and barriers related to local food production and consumption in a community or region. This report will focus on six towns in north-central Massachusetts and will assess the five major sectors of our regional food system: food production, processing and storage, distribution, consumption, and food waste recovery.

Three recent plans have informed the research and vision for this assessment. The first, the New England Food Vision, is a report published in 2014 by Food Solutions

New England that lays out a vision for the six states of New England to produce 50 percent of their food within New England by the year 2060. The second, the Massachusetts Local Food Action Plan, is a state plan completed in 2015 that outlines hundreds of action items to strengthen the food system in Massachusetts. Finally, the Franklin County Farm and Food System Project, also published in 2015, breaks down the goals of the New England Food Vision at a regional level and ties in issues of food access, the needs of farmers, and challenges related to land access and protection.

Taken together, these three reports outline a vision where people across the region have access to healthy, locally-grown food, where farming is a viable and sustainable sector of the economy, and where land and other natural resources are utilized in a way that is sustainable over the long-term. This community food system assessment aims to extend and deepen that vision for the north and east Quabbin region of Massachusetts.

Chapter 1: Introduction

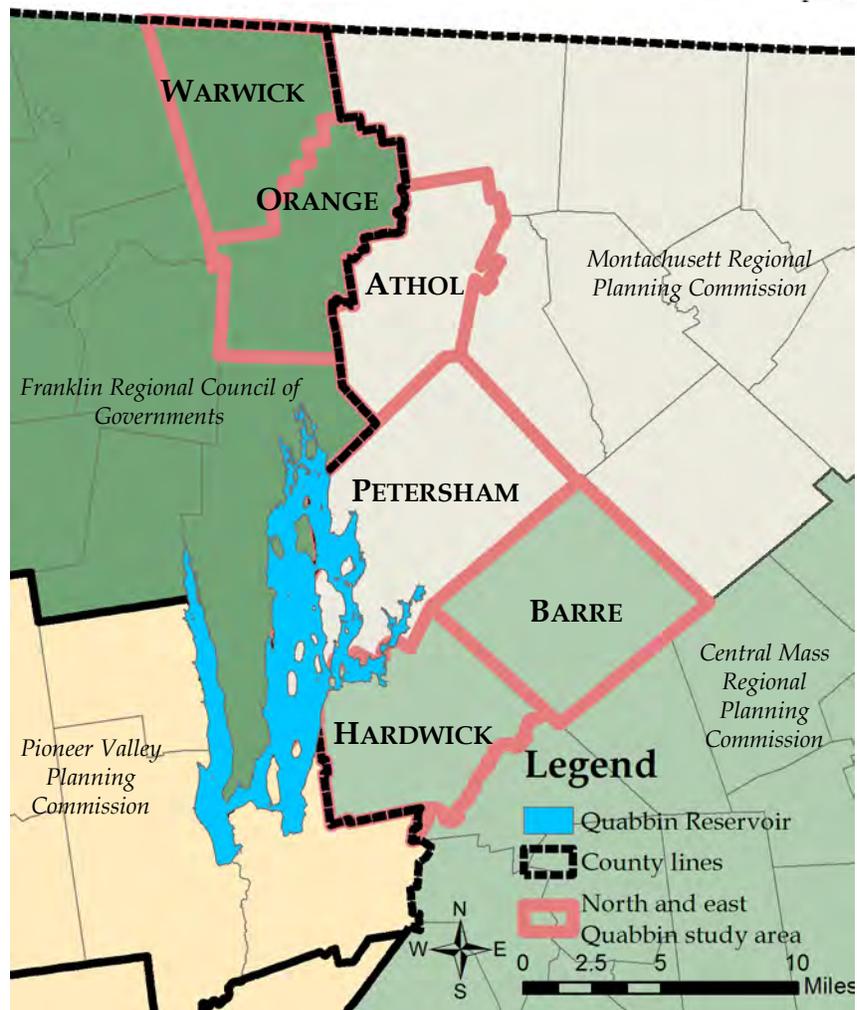
Geographic context

This community food system assessment focuses on six towns in north-central Massachusetts: Athol, Barre, Hardwick, Orange, Petersham, and Warwick (see map below).

In the context of this report, this six-town sub-region will be referred to as the *north and east Quabbin region* because of its location in relation to the Quabbin Reservoir. This sub-region spans two counties (Franklin to the west and Worcester to the east) as well as three regional planning agencies (Franklin Regional Council of Governments, Central Massachusetts Regional Planning Commission, and Montachusett Regional Planning Commission). These six towns were selected with the intention of crossing county lines and engaging multiple planning commissions. They also reflect the wide variety of characteristics of towns in the north-central part of the state, ranging from towns with urban, industrial cores like Athol and Orange to smaller rural communities like Petersham and Warwick.

Historical context

The following timeline was developed by humanities scholar Cathy Stanton as part



The six towns in our region span two counties and three regional planning agencies.

of a project called “Farm Values: Civic Agriculture at the Crossroads.” The project was sponsored by Mount Grace Land Conservation Trust and funded by MassHumanities. More information can be found at <http://farmvalues.net/>.

Before Europeans began to establish towns in our region in the 18th century, indigenous groups hunted and gathered a wide variety of food and grew some crops, especially along the fertile river floodplains. Colonists and their descendants created versatile small farms (typically 50-100 acres) from a mix of tilled fields, hayfields, pastures, and woodlots, with an emphasis on pasture-based animal husbandry. Settled later than the rich farmland in the Connecticut River Valley, the area that is now north-central Massachusetts was – and remains – a patchwork of different soils and terrains, with relatively limited areas of prime soils. By the 1790s, farmable land was already in scarce supply even in “upland” or hill towns like Warwick and Petersham.

Although most farm products went to family subsistence, farmers in our region had long been involved in small-scale networks of trade and exchange as well. After the Revolution, though, they began to experience the effects of more distant markets and movements of capital, including in negative ways. With the “market revolution” of the early 19th century, small-scale producers began a long process of adaptation and struggle – which continues into the present – to remain competitive within longer food chains. Dairying, haying, and selling specialty foods like maple syrup took on new importance as strategies for farmers in our region to keep their farms going, while non-land-owning farmers increasingly found themselves working as waged laborers on others’ farms. Cheese-making became an important business in many towns. At its peak in the 1850s, Hardwick produced more than 300,000 pounds of cheese annually.

As the 19th century went on, grain and cheese from New York and Midwestern states became more widely available in New England, and farmers in our region shifted toward meat and liquid milk or butter. The town of Warwick held large-scale cattle shows in 1860 and 1861, and the Hardwick Fair, chartered in 1762 as the first authorized fair in Massachusetts, showcased oxen and beef cows in the 1850s.

Towns like Athol and Orange expanded exponentially with the growth of industries in the later 19th century. We often think of the industrial economy superseding the agricultural one, but these growing towns actually expanded the market for local farm products while offering a wider range of off-farm, year-round jobs for members

of farm families, contributing to farm household economies.

In the economically-volatile decades following the Civil War, farmers in our region, like others across the U.S., banded together in mutual-assistance organizations of many kinds. In 1873, six years after the creation of the national Grange, the Massachusetts State Grange (also known as the Order of Patrons of Husbandry) was founded with 18 town chapters. Hardwick's chapter was established the following year, Petersham's in 1875, Athol's in 1889. In 1892 the Granges in most of what are now the nine North Quabbin towns formed the Worcester Pomona Lodge, a regional umbrella group that is still active today.

Economic crises in the 1890s prompted the first "back to the land" movement while nostalgia for rural places led to the emergence of what is now called "agritourism." The number of farms and farmers in New England continued to shrink and a good deal of farmland – including some that had been over-cleared during earlier eras of attempting to remain competitive in changing markets – was reforested as part of a growing turn toward land conservation. However, more intensive farming methods actually increased overall regional agricultural production through the 19th century, with a peak in 1910. Food marketing took place through a patchwork system of small



In this undated photo, Nora Comerford pours milk at her Bearsden Road dairy farm. Nora's sister Hester Adams founded the neighboring farm that became Adams Farm in Athol, now the region's largest slaughterhouse.

Photo courtesy of Noreen Heath-Paniagua

specialty stores, market gardeners, dairies, orchards, and butchers, with many people growing at least some of their own food and purchasing the rest from mostly local sources.

In 1912, the Great Atlantic & Pacific Tea Company (A&P) introduced the "economy" grocery store model and launched an era of chain store

expansion. Ten years later, there were about 8,000 A&Ps across the U.S., including a store in Athol by 1920 and in Orange two years later. First National Stores and Piggly Wiggly, two other early supermarket chains, also had stores in both towns, showing that most people were still shopping very locally even if national chains were now supplying some of their food. At the same time, some



Four of the nine generations of the Moore family who have farmed in Orange: left to right, Laura and John M. Moore III, John N. Moore II and Jeannette, Charlotte (Lottie) and John N. Moore, and Della and Frank C. Moore. Photos courtesy of the Moore family.

disused farms in our region were being reclaimed by new owners. Athol banker Warren Tyler started a small commercial orchard at Red Apple Farm in Phillipston in 1912, and soon sold it to the Rose family from Worcester, who still run it today.

During the Great Depression, more people returned to growing food for themselves and their families. Many small farms faltered, but some new farmers, including immigrants from eastern and southern Europe, were able to buy land at low prices and often became important suppliers of the produce that still helped feed people in towns and cities. However, the first all-in-one grocery store in New York City in 1930 heralded a new level of shopping convenience, linked with the expansion of car culture and the provision of ample free parking outside of older town centers, which made it increasingly difficult for small local businesses to compete in commercial markets.

Petroleum-fueled expansion after World War II enabled highways, long-distance refrigerated trucking, and the continued growth of supermarkets, leading to the sharpest decline yet in the profitability and numbers of New England farms. Dairying remained a mainstay for those who stayed on the land. The North Central

Massachusetts Dairymen's Association was founded by area farmers in 1954 to protect their interests as the dairy industry began to follow the same path toward consolidation and corporate control that had made it difficult to compete in other agricultural sectors. Some small dairies went out of business or switched to new products. Adams Farm in Athol was one of these; in 1946 the family opened a small slaughterhouse that has since grown to be the largest in the region.

A new "back to the land" movement in the 1960s and 70s brought many young homesteaders to our region in search of affordable land, small-scale community, and a healthy lifestyle. Few of these newcomers started commercial farming ventures, but many became important advocates for farmland and open space preservation and more locally-based economies, reconciling environmentalism and agriculture through the valuing of traditional working landscapes and community character.

The end of the 20th century saw the rise of the chain grocery superstore and the globalization of food production and marketing with expansive new trade agreements. In our region, it also saw the establishment of several mainstays of the local farming community that remain active today, including Many Hands Organic Farm in Barre (1982), the Farm School in Athol (1991), and Seeds of Solidarity in Orange (1996). The first Garlic & Arts Festival in 1998 began a tradition of highlighting the grass-roots creativity and productivity of an area that was struggling economically after the loss of much of its major industry.

Enthusiasm for local food has spurred the growth of farmers markets, agritourism, and direct marketing in the early 21st century, as many producers, consumers, and planners work to shorten the long-distance food chains created over the past hundred years. Today's small farmers must contend with the formidable economies of scale of large regional and national food producers who are able to keep prices low through enormous volumes. However, new alliances with schools, hospitals, land trusts, planners, and others, as well as connections to customers in the Pioneer Valley and eastern Massachusetts, continue to expand the market for local food and support the people and farms that produce it.

Research goals and methodology

The goal of this community food system assessment is to help communities in our region improve community health, spur economic development, and create a more resilient food system by:

1. Providing a snapshot of the state of food and farming in the six-town region
2. Identifying community assets that should be supported or protected
3. Identifying needs and barriers that need to be addressed to create a more resilient food system
4. Highlighting successful models in our region
5. Recommending specific actions that towns and community groups can take to rebuild the food system.

The report is broken into chapters by food system sector: Production, Processing and Storage, Distribution, Consumption, and Food Waste Recovery. Each chapter will explore the assets and the barriers associated with that sector in our region. Recommendations for each food system sector are compiled in Chapter 7, with specific actions identified for each stakeholder group and relevant recommendations from the Massachusetts State Food System Plan.

Findings and recommendations were generated based on a combination of research methods, including conversations with community members, spatial analysis including GIS (Geographic Information Systems) mapping, and analysis of quantitative and qualitative data from a variety of sources. A primary source of information was community conversations; over 60 community members were interviewed over the course of a year for this report, and at least 150 more were engaged in feedback sessions at two public meetings. For more information about the research methodology for this report, see Appendix B.

Resources:

- A New England Food Vision: <http://www.foodsolutionsne.org/new-england-food-vision>
- Massachusetts Food System Plan: <http://www.mafoodplan.org/>
- Farm Values: Civic Agriculture at the Crossroads: <http://farmvalues.net/>

Chapter 2: Production

Overview

Historically, a much larger percentage of the six-town region of Athol, Barre, Hardwick, Orange, Petersham, and Warwick was open and in active production, with farmers serving local and regional markets for dairy, beef, and diversified products. Fewer farms exist today and many face numerous challenges to stay viable. Many larger farms have been divided into smaller parcels and different ownerships, and are kept open by a small number of farmers, primarily in hay production.

There is more prime agricultural soil in the six towns than is currently being used for food production (over 32,000 acres), due in large part to the trend of reforestation in New England during the 20th century. Many of the active farms that remain are similar to those of 200 years ago; most are relatively small but diverse, with a focus on beef and dairy production and limited fruit and vegetable production. Many farmers do not own the land they farm or have not identified successors, and the future of those farms is therefore uncertain. At the same time, new and beginning farmers struggle to find and afford farmland and housing. Two-thirds of the open farmland (approximately 5,300 acres of farm fields) in our region is still unprotected and threatened by development.



*Dairy cows graze at Chase Hill Farm in Warwick.
Photo credit: Chase Hill Farm*

Major findings

1. There is potential for increased food and fodder production in our region.
2. Farmland access is a challenge for both beginning farmers and established farmers interested in expanding their production.
3. The farmland that exists in our region is threatened by development.

Chapter 2: Production

Assets

Potential for increased food and fodder production

Most farms in our region are not completely open, but have a large area of land that is forested. In fact, as shown in Figure 2.1, only a little more than 20 percent of the total area of farmland in our region consists of open fields; the rest is wooded. This reflects the general historical land use pattern of the north and east Quabbin region, which is largely wooded and hilly. Many farmers cut timber on their backland in addition to farming the fields. Maple sugaring is also an important industry in our region.

Although our region is not known for having great agricultural soils, there are more prime and statewide important farmland soils than are being utilized for food production. As shown in Figure 2.2, only about 16 percent of prime and

statewide important farmland soils are currently being utilized for crop production and pasture. This reflects a historic trend of reforestation of much formerly-cleared farmland, development of many flat (and fertile) areas, and the difficulty that small farmers have historically had within larger-scale produce and grain markets.

While it is important to take these factors into consideration, it does seem that there is a potential for increased food and fodder production in our region. Of course, some of these soils have been built upon, have been covered by water, or are under permanently protected forestland and therefore will likely not be utilized for agriculture in the future. However, many acres of good agricultural soils exist at the edges of fields or in abandoned farm fields; with selective clearing of trees at the edges of fields or in abandoned farm fields, some of these soils could be reclaimed for farming as they were in the past.



Sweetwater Farm in Petersham grows certified organic hay as feed for its beef herd. Photo credit: Sweetwater Farm

Old farmland hiding under the trees

As shown in Figures 2.3 and 2.4, the amount of forested land in our region has been on the rise over the past 200 years, while the amount of agricultural land has declined. Today's heavily forested landscape in the six-town region is the result of a long effort to restore forests that were cut in the rush to sell lumber or keep farms competitive in expanding

markets. Forest cover declined sharply throughout the 19th century in New England, and was at its lowest (20%, according to spatial data from Harvard Forest researchers) in our region by 1830. It has rebounded strikingly (back to 83% by 2005), leaving the well-known signs of old and abandoned farms in the form of stone walls and cellar holes dotted throughout the woods.

However, the too-simple story of decline and abandonment masks some of the contradictions within New England’s economy over the 19th century. Despite the steady loss in open farmland and numbers of farms and farmers, intensified methods actually increased agricultural production overall until its peak in 1910. Industrial towns and cities gobbled up land but also provided new markets for farmers’ goods. Competition from Midwestern farms undercut area prices on grains and vegetables but also provided cheap feed that let many area farmers shift to livestock and specialty products. Today, farmland continues to be lost to development and other causes (a loss of 3,000 acres in our region, or 27%, between 1971 and 2005), making it more urgent to understand both the reasons

Figure 2.1: Farm parcels and open farm fields by town

Town	Total land area (acres)	Acres of farm parcels	Acres of farm fields	Percent of farm parcel area in open fields
Athol	21,354	1,744	452	26%
Barre	28,555	9,520	2,548	27%
Hardwick	26,154	9,702	2,440	25%
Orange	23,043	4,827	1,257	26%
Petersham	43,657	6,318	1,013	16%
Warwick	24,103	4,504	619	14%
Six-town region	166,866	36,615	8,329	23%

Over 36,600 acres of land in the six-town region are located on farm parcels, but as is typical for diversified farms in our region, most of those acres are forested, leaving only about 8,300 acres of open fields, or a little more than 20 percent of total farm area.

Sources: Mount Grace Land Conservation Trust farmland inventory, 2014-2015; MassGIS datalayers for land use (2005) and open space

Note: “Farm parcels” are all tax parcels being utilized in whole or in part for agriculture, as captured in the Mount Grace Land Conservation Trust farmland inventory. “Farm fields” are open fields and pastures on those parcels being actively utilized for agriculture.

Figure 2.2: Prime and statewide important farmland soils by town

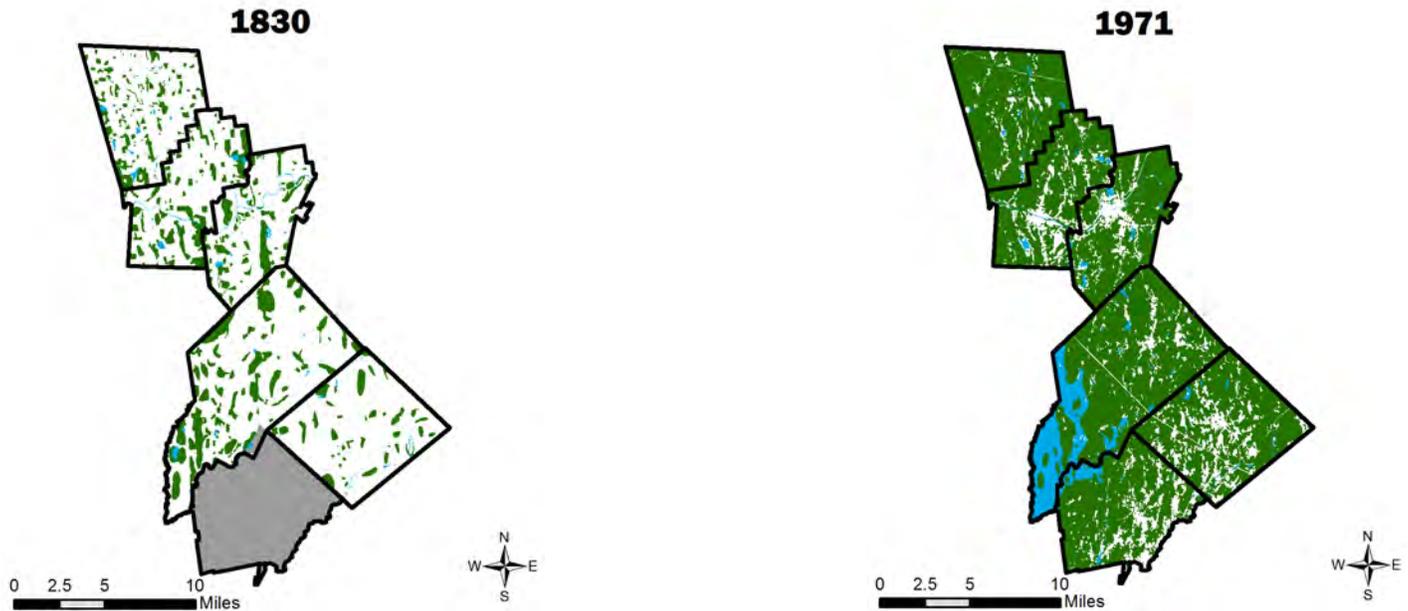
Town	Total land area (acres)	Acres of prime farmland soil	% land area covered by prime soil	Acres of prime soil used for cropland or pasture	% of prime soil NOT utilized for agriculture
Athol	21,354	4,463	21%	231	95%
Barre	28,555	5,113	18%	1,562	69%
Hardwick	26,154	2,845	11%	1,187	58%
Orange	23,043	9,343	41%	1,022	89%
Petersham	43,657	3,012	7%	670	78%
Warwick	24,103	7,575	31%	475	94%
Six-town region	166,866	32,351	19%	5,147	84%

Over 32,000 acres of land in our region are covered by prime and statewide important farmland soils; however, only 5,000 acres are being utilized for crop production or pasture. This leaves 84% of all the agricultural soils in our region being used for non-farming purposes, indicating a potential for increased food production in the six-town region.

Sources: MassGIS datalayers for land use (2005) and prime and statewide important farmland soils

A trend of reforestation...

Figure 2.3: Forest cover from 1830 to present



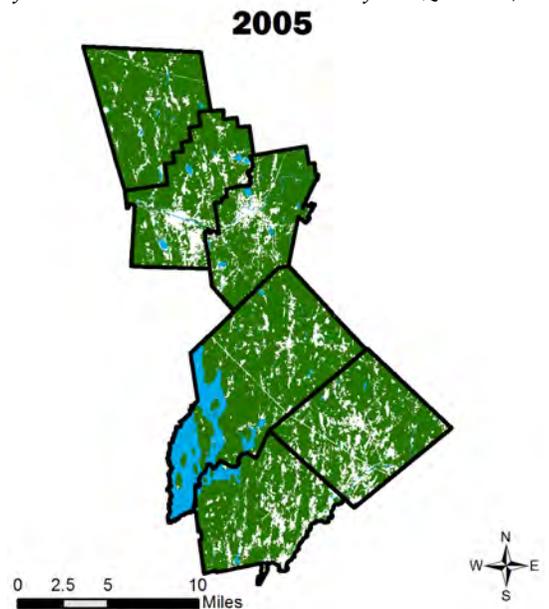
In 1830, 80% of land in the five-town region was cleared for farming and settlement, leaving only 20% of land area forested. No data available for Hardwick.

By the mid-20th century, nearly all the forest had grown back, with about 83% of the land area of the six towns covered by forest (accounting for land lost due to the creation of the Quabbin).

Town	% land area covered by forest		
	1830	1971	2005
Athol	21%	78%	78%
Barre	11%	77%	76%
Hardwick	-	78%	78%
Orange	24%	78%	75%
Petersham	23%	91%	89%
Warwick	18%	91%	90%
Six-town region	20%	83%	82%

Warwick and Petersham experienced the highest rate of reforestation in the six-town region; Orange and Barre experienced the lowest (after accounting for land lost due to the creation of the Quabbin Reservoir).

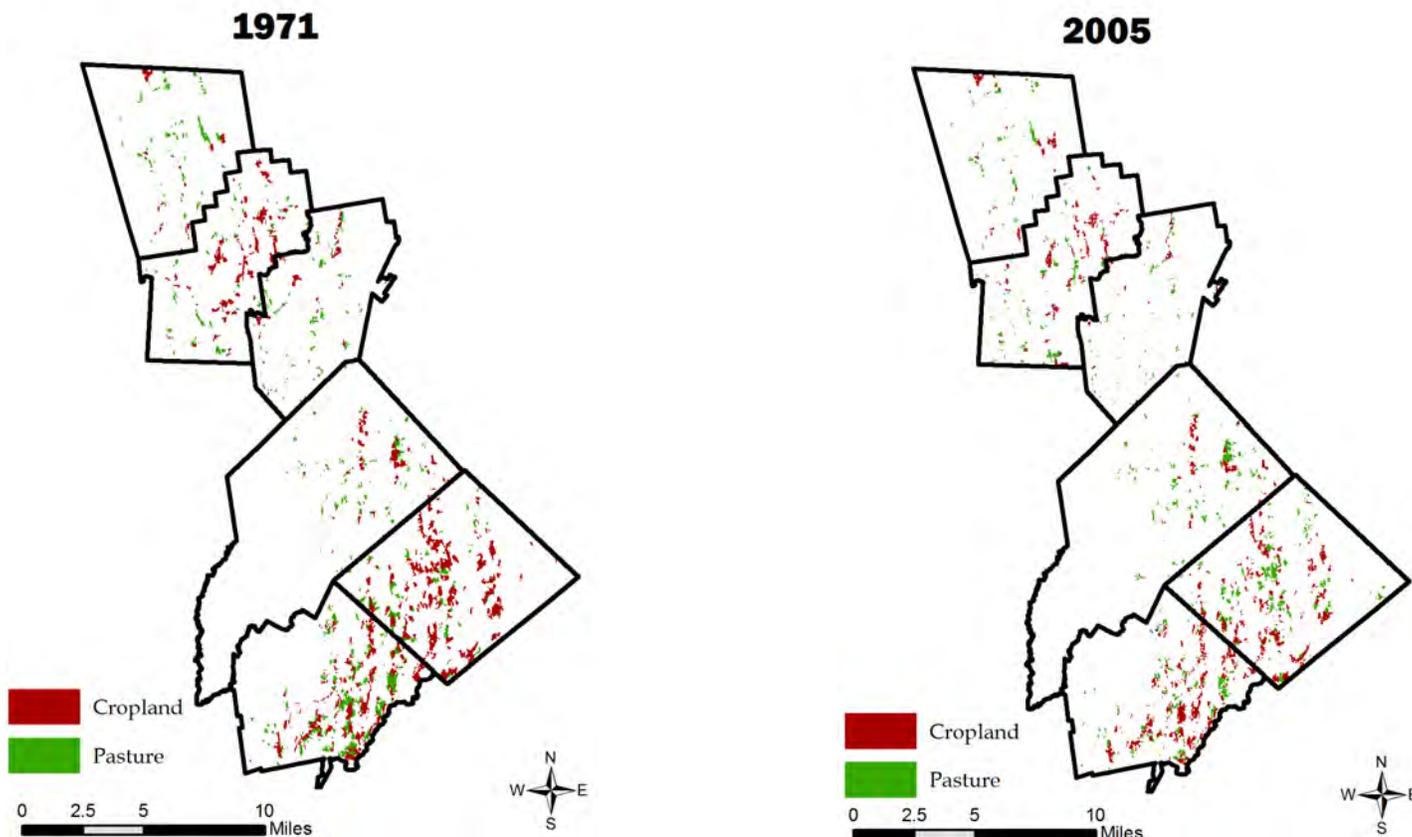
Sources: MassGIS datalayers for land use, 1971 and 2005; Harvard Forest datalayer for Land Cover and Cultural Features of Massachusetts in 1830.



The early 21st century saw a slight decline in forest cover in the six towns; however, forest still accounts for 82% of land area in our region.

...and the decline of farmland

Figure 2.4: Cropland from 1971 to present



In 1971, cropland and pasture accounted for 11,400 acres of land in the six-town region, or about 7% of total land area.

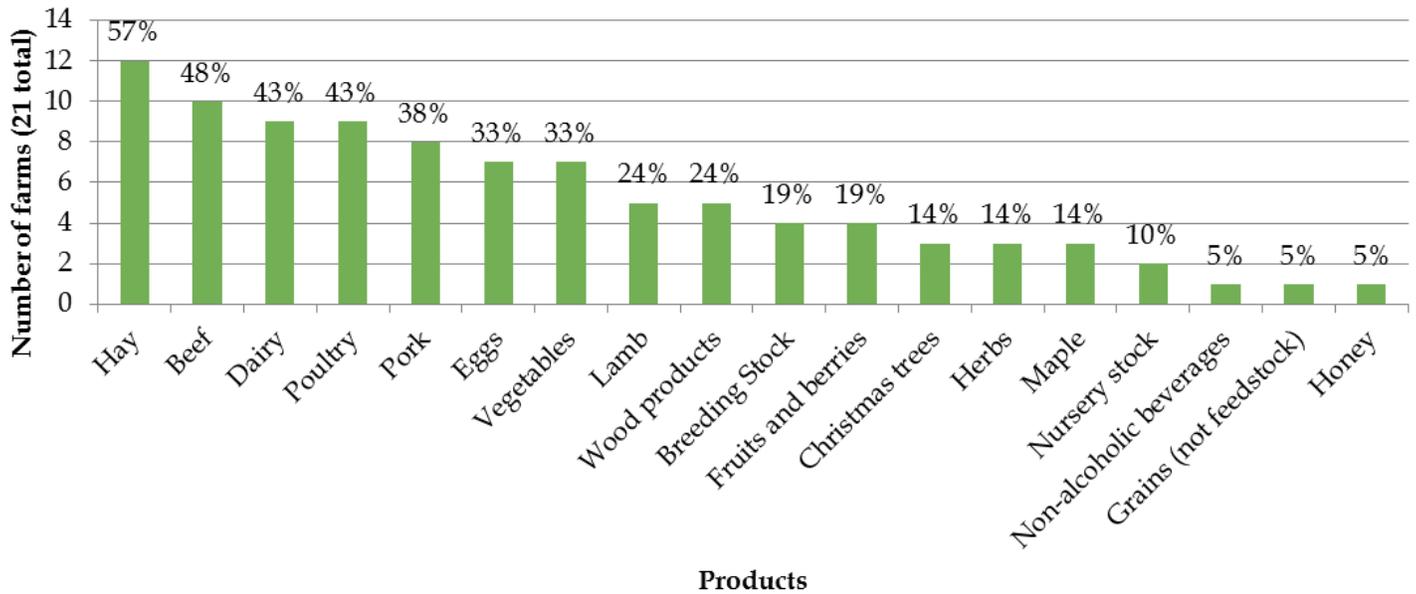
By 2005, the amount of cropland and pasture in the six-town region had declined to 8,300 acres, or about 5% of total land area. This represents a decline of 27% from 1971.

Town	% land area used for ag	
	1971	2005
Athol	4%	2%
Barre	12%	9%
Hardwick	14%	9%
Orange	7%	5%
Petersham	2%	2%
Warwick	3%	3%
Six-town region	7%	5%

The towns experiencing the highest rate of farmland loss between 1971 and 2005 were Hardwick, Barre, and Athol.

Sources: MassGIS datalayers for land use, 1971 and 2005.

Figure 2.5: Most commonly produced products in the 5-town region* according to farmer surveys



Of 21 farms surveyed in Barre, Hardwick, Orange, Petersham, and Warwick, over half reported growing hay. The next most commonly produced products were beef, dairy, poultry, and pork. Only one-third of the farmers surveyed reported growing vegetables, and less than 20 percent reported growing fruits and berries.

Sources: FRCOG and CMRPC farmer surveys
 *No data available for Athol

why farmland grew back into forest and the potential for selectively putting some of that land back into food production.

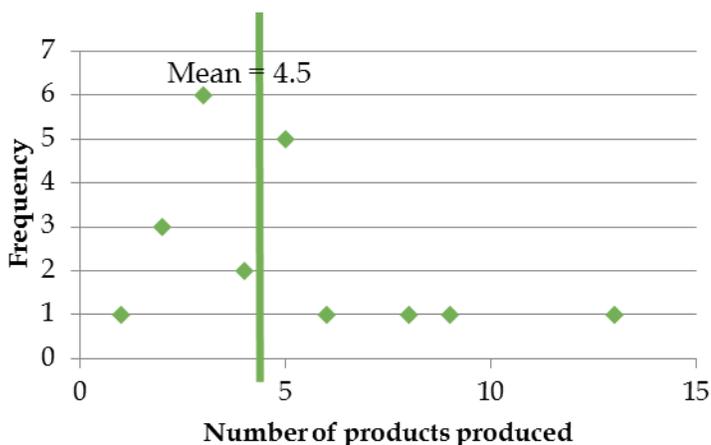
Diversity of farm products

Farms in our region produce a great diversity of products. As shown in Figure 2.5, according to farmer surveys conducted by Franklin Regional Council of Governments (FRCOG) and Central Mass Regional Planning Commission (CMRPC), more than half of the 21 farmers surveyed in our region reported growing hay. The next most commonly grown products according to this survey were beef (48%), poultry and dairy (both 43%), and pork (38%). Another analysis based on an inventory of almost 1,000 farm parcels conducted by Mount Grace Land Conservation

Trust in 2014 shows an even more dramatic picture. Over 80 percent of farm parcels for which data were available were being used (in whole or in part) for growing hay. For more information about the farmer surveys and the Mount Grace farmland inventory, see Appendix B.

Although hay is far and away the most commonly produced product in our region, there is a surprising diversity of crops produced at the level of the individual farm. According to the FRCOG and CMRPC farmer surveys, almost all responding farms in the north and east Quabbin region produce a variety of products; the average farm reported about 4 or 5 different types of products, with some farms producing over a dozen types of products, as shown in Figure 2.6.

Figure 2.6: Number of products produced per farm



As shown in this scatterplot, for the 21 farms surveyed in the five-town* region, the average (mean) number of products produced per farm was 4.5. Just one farmer reported producing only one product; on the other end of the spectrum, one farmer reported producing 13 different products. The mode, or the most frequently reported number of products, was 3 products per farm.

Sources: FRCOG and CMRPC farmer surveys

*No data available for Athol

With a strengthened local market for locally-produced fruits and vegetables in stores and at farmers markets, farms in our region might be able to expand their production in these areas. There is already some demand for increased production of fruits and vegetables in the area; markets such as Quabbin Harvest co-op and Hannaford struggle to source these products locally, especially berries and fruits (except for apples). Winter vegetables, such as root vegetables and leafy greens, would also be welcome at markets that often struggle to offer local produce during the off-season.

Opportunities for pasture and hay

The New England Food Vision describes a future where the six states of New England produce 50 percent of their food by the year 2060. In order to

accomplish this goal, the Vision calls for a tripling of the total farmland area in New England, from 5 percent of total land area for all six states to 15 percent. In Massachusetts, this would mean increasing the amount of farmland in the state from about 235,000 acres to about 800,000 acres, or nearly quadrupling the area of farmland in the state.

Pasture and hay have an important part to play in achieving this increased level of production. According to the Vision, over half of New England’s farmland acres, or 3.5 million acres out of the 6 million total that the Vision calls for, should be devoted to hay and pasture as a crucial foundation for meat and dairy production. The north and east Quabbin region is well-suited to grow hay and graze livestock and could serve an important role in fulfilling the “50-by-60” vision outlined in the New England Food Vision. It is more important now than ever to preserve the

To meet the vision of producing 50 percent of New England’s food within New England, the amount of farmland in Massachusetts alone would have to nearly quadruple by 2060.



Many Hands Organic Farm in Barre produces certified organic vegetables, fruits, and berries, while also raising beef cattle, pigs, chickens, and hay.

Photo credit: Many Hands Organic Farm

farmland that remains and increase production where possible to improve our regional self-reliance.

Barriers and Opportunities

Rocky soil

Although 32,000 acres of the six-town region are covered by prime and statewide important farmland soils (out of about 167,000 acres total), anyone who has farmed in this region knows the soil in some areas is extremely rocky. Many areas are hilly as well, which presents additional challenges for farming. This is one reason why many farmers in our region, historically and today, grow such a diversity of products; they may hay their largest fields, graze cattle on the slopes, grow a few vegetables in the areas with the best soil, and cut timber on the backland. As mentioned previously, these traditional diversified farms provide valuable hay and pasture, which are both important to the larger regional food system, as well as forest products, which are important to the economy and rural character of the north and east Quabbin.

In spite of the challenges presented by the rocky, hilly terrain, some small-scale farmers are shifting away from this traditional production method and towards more intensified techniques drawn from less-mechanized, more 'artisanal' modes of farming (for example, no-till cultivation and permaculture). Many Hands Organic Farm in Barre produces certified organic vegetables, fruits, and berries, while also raising beef cattle, pigs, chickens, and hay. Jane's Heirloom Tomatoes in Petersham is a smaller operation specializing in small-scale, intensive tomato production. These innovative new farms should be celebrated as a valuable addition to the older, more traditional diversified farms in our region.



The next generation of farmers learn to plant garlic at the Farm School in Orange.

Photo credit: The Farm School

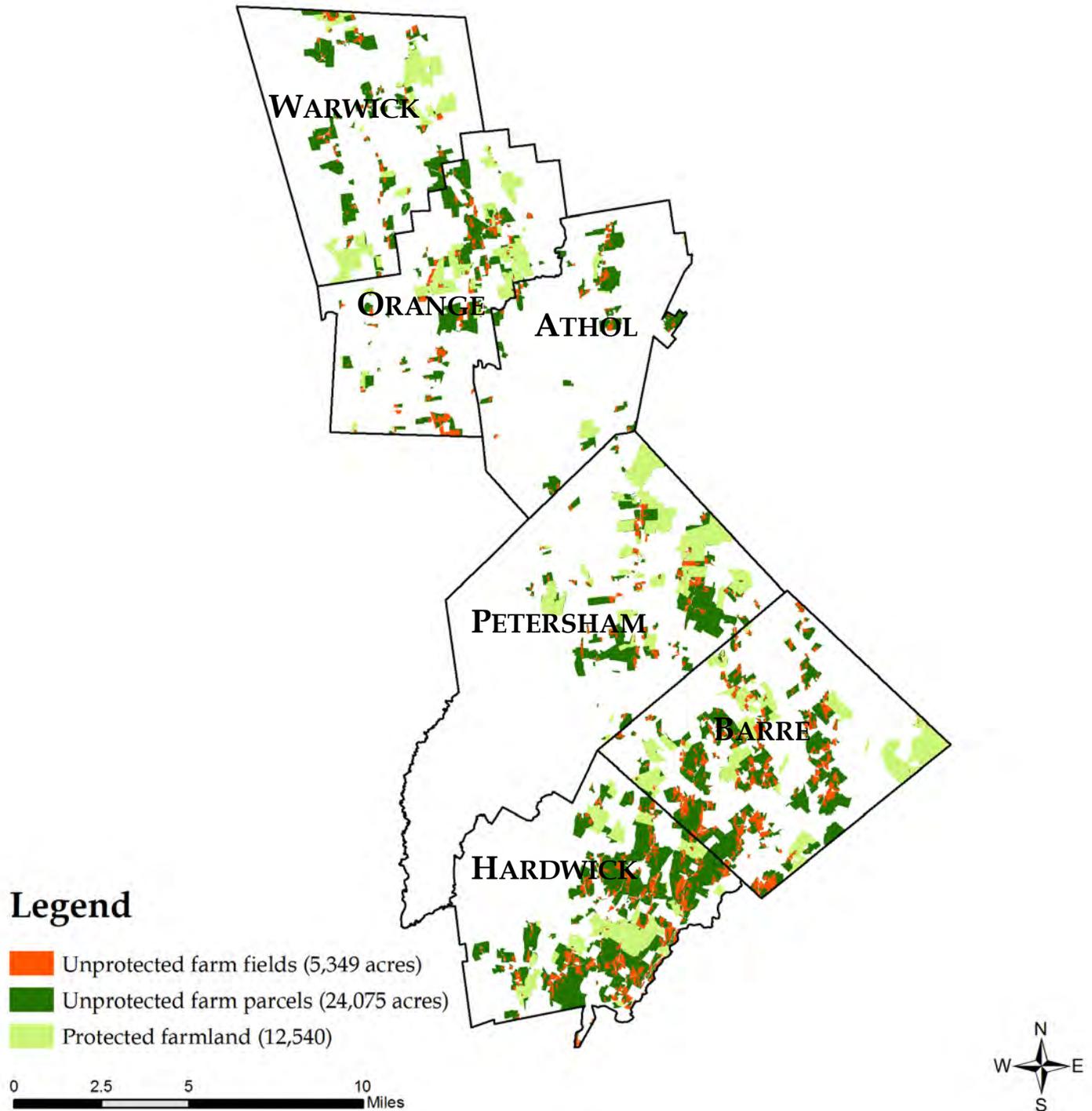
Keeping farms in the hands of farmers

The question of how a farm will transition from one generation to the next, or from one farmer to another, is an important challenge faced by all farm owners. According to farmer surveys conducted by FRCOG and CMRPC, about two-thirds of farmers surveyed in the north and east Quabbin towns are between 45 and 64 years of age. Less than 30 percent of farmers surveyed in our region reported having either a transition plan or an identified successor for their farm. There is a need to link these aging farmland owners with resources to help them find a successor for their land to keep it in farming. Often, that successor will be a family member; however, there are many beginning and established farmers seeking farmland in our region who may be able to take over for a farmer exiting the business, or even start a new farm on land that is not currently being utilized.

Less than 30 percent of farmers surveyed in our region reported having either a transition plan or an identified successor for their farm.

Unprotected farmland in our region

Figure 2.7: Unprotected farm fields and farm parcels in our region



Sources: Mount Grace Land Conservation Trust farmland inventory, 2014-2015; MassGIS datalayers for open space and land use
Note: Since many farm parcels in our region have forested areas as well as open fields, farm fields are identified on the map as an important resource that needs protecting.

Access to farmland is a challenge affecting farmers across the country. Some farmers in the north and east Quabbin region who participated in the FRCOG and CMRPC farmer surveys reported that farmland is expensive and hard to find, with one farmer noting that the “big farms in town use it all up.” Farmers surveyed in the north and east Quabbin also identified a need for more farmland for hay, pasture, and cropland. Mount Grace’s 2014 farmland inventory found that many fields in the six-town region are not actively farmed, and that many more have been allowed to start returning to forest, indicating that opportunities exist for beginning farmers as well as established farmers looking to expand their farm operations in our region.

Protecting farms for future generations

Farmland is particularly vulnerable to development, especially in a heavily wooded area like the north and east Quabbin, because it is often the most flat and open land available. While towns, state agencies, and land trusts like

In Barre and Hardwick, more than half of responding farms did not have any form of protection on their land, including Chapter 61 enrollment. This indicates that these towns could serve as a starting place for conservation organizations working to conserve the 65 percent of farm fields not currently protected.

Mount Grace Land Conservation Trust and East Quabbin Land Trust have permanently protected many farms from development, many more farms are still at risk of being sold for non-farming purposes. According to Mount Grace’s farmland inventory, nearly 5,400 acres of farm fields in the six-town region, or about 65 percent of farm fields in our region, are not permanently protected, as shown in Figures 2.7 and 2.8.

Various mechanisms exist for farmland protection. Conservation Restrictions (CRs) or Agricultural Preservation Restrictions (APRs) provide permanent protection by preventing the land from being developed in perpetuity while keeping the land in private ownership and allowing for farming and other uses. Enrollment in a current use program (Chapter 61A) provides temporary protection by providing the town or other conservation organization an opportunity to purchase or protect the land if there is a proposal to develop it. This “right of first refusal” persists for a year after the land is unenrolled in the Chapter 61 program, providing temporary protection from development.

According to farmer surveys by FRCOG and CMRPC, 57 percent of farms surveyed in the north and east Quabbin region are protected by a CR or an APR, while 81 percent are enrolled in

Figure 2.8: Unprotected farm fields

Town	Acres of unprotected farm fields	Percent of farm fields not protected
Athol	228	50%
Barre	1,817	71%
Hardwick	1,655	68%
Orange	705	56%
Petersham	579	57%
Warwick	365	59%
Six-town region	5,349	64%

Hardwick and Barre have the largest area of farm fields in the six-town region and also have the highest percentage of unprotected farm fields. Overall in our region, nearly 65% of farm fields are unprotected.

Sources: MassGIS datalayers for land use (2005) and open space



*Jamie Pottern leads a group of farmers in Orange in a discussion about the future of their farms.
Photo credit: Bradley Kennedy, MassLIFT 2014-2015*

Chapter 61. It is important to note that these responses were not spread evenly across the five towns captured in the surveys; in Barre and Hardwick, more than half of responding farmers did not have any form of protection on their land, including Chapter 61 enrollment. This indicates that these towns could serve as a starting place for conservation organizations working to preserve the 65 percent of existing open farmland that is not currently protected.

Recommendations

Conserve the most important and threatened farms in the six-town region.

Towns, land trusts, and other conservation organizations can work together to identify farms that should be highest priority for conservation. Mount Grace Land Conservation Trust in Athol has engaged with farmers, community members, town boards and committees, and other land trusts in the six-town region to identify priority farms for conservation based on a set of criteria. This process is ongoing and involved ranking over 100 farms in our region based on acreage, prime soils, diversity of products, historical and community significance, proximity to other

protected land, and several other factors. A full outline of all the criteria as well as their rationale and the weight they were given in the ranking process is included in Appendix C. Towns and other conservation organizations can collaborate to identify their own conservation priorities and take steps to protect the most important and threatened farms first.

Towns can also take steps to increase their capacity for conservation. For example, every town should have an active agricultural commission to serve as an advocate for farmers and make farmland conservation a priority at the town level. Petersham, Warwick, and Orange could make it a priority to start or reactivate their agricultural commissions as a first step towards accelerating the pace of farmland conservation in those towns. Athol and Petersham can also take steps to pass a Right-to-Farm bylaw to protect farmers from future liability in case of conflicts with future development patterns. Towns can also increase the pace of conservation by adopting the Community Preservation Act (CPA), which is a state program that allows towns to add a surcharge to property taxes to fund open space projects as well as projects relating to affordable housing, historic preservation, and outdoor recreation. None of the six towns have passed the CPA to date.

Support farmland owners with transition planning and help connect the next generation of farmers with “exiting” farmers or non-farming landowners.

Towns and conservation organizations can help farmland owners plan for the future of their farms by hosting workshops on transition planning and conservation options. Workshops like these can also serve as a place for beginning

farmers to connect with exiting farmers or non-farming landowners interested in selling or leasing their land. An online portal that centralizes existing web-based resources for finding farmland could also serve to connect buyers and sellers of farmland, especially as a tool for conservation organizations who work directly with landowners and could serve as a liaison to farmland seekers. Towns, private landowners, and institutional landowners could also consider selling or leasing underutilized land to farm seekers to be used for agricultural purposes.

Connect farmers with resources for business, financial, and marketing support and foster connections to untapped markets.

The best way to encourage increased food production in our region is to support local farmers and facilitate their success. Farmers need access to business planning resources, marketing support, and other resources to succeed. As discussed in Chapter 4, branding campaigns such as “Buy Local” campaigns can help farmers in this respect. Untapped markets that could be explored in our region include schools, hospitals, and other large institutional buyers; see Chapter 4 for more details.

Consider restoring former crop fields and pasture, where appropriate.

In order to reach the ambitious goal set out in the New England Food Vision, the amount of land farmed in Massachusetts will have to nearly quadruple in the next forty years. The large number of fields and pastures that have recently started returning to forest present a great opportunity to increase production in the north and east Quabbin region. Twenty-seven percent

of the farmland that existed in 1971 has been lost in the past 45 years, either to development or to forest succession. A significant amount of prime and statewide important farmland soil is currently covered by trees; in fact, 84 percent of agricultural soil in our region is not being cultivated for crops or pasture. Although some of this land is already developed or is permanently protected forest and so could not be used for agriculture, this does point to a significant opportunity to increase food production in our region by selectively restoring former farm fields. Decisions about which fields to clear must be left to the individual landowner and should be taken with other considerations, such as wildlife habitat and watershed protection, in mind.

Resources:

- Farmer survey from Franklin Regional Council of Governments (FRCOG): <http://frcog.org/publication/franklin-county-farmer-survey-results/>
- Farmer survey from Central Massachusetts Regional Planning Commission (CMRPC): www.cmrpc.org/farm-survey-open
- Land for Good: <http://landforgood.org/>
- Mount Grace Land Conservation Trust: www.mountgrace.org
- East Quabbin Land Trust: www.eqlt.org

Chapter 3: Processing and Storage

Overview

Producers in the north and east Quabbin towns of Athol, Barre, Hardwick, Orange, Petersham, and Warwick process food into a variety of value-added products, such as jams, jellies, baked goods, salsa, smoothies, coffee, beer, brandy, and especially meat and dairy products. According to farmer surveys conducted by the Franklin Regional Council of Governments (FRCOG) and the Central Mass Regional Planning

Commission (CMRPC), all farmers surveyed in the north and east Quabbin towns who process their produce into value-added products reported that the processing took place on their own farm. See Appendix B for more information about the farmer surveys.



*Workers prepare apples for processing at the Western Massachusetts Food Processing Center.
Photo credit: Bradley Kennedy, MassLIFT 2014-2015.*

Meat slaughter and processing typically takes place at off-farm facilities due to USDA regulations. Other off-farm processing facilities might include milk bottling and dairy processing facilities; commercial kitchens in public buildings such as churches, senior centers, or even schools; and large-scale commercial kitchen spaces such as the Western Massachusetts Food Processing Center in Greenfield. Barriers to local food processing include the complexity of some permitting processes, the logistical challenges of processing off-site, and the challenges associated with sharing food processing and storage facilities and equipment among farmers.

Major Findings

1. There is a diversity of value-added products being processed in our region, especially dairy and meat products.

2. Many farms in the region are too small to produce large batches of value-added products at off-farm processing facilities, but opportunities exist for farmers to utilize smaller-scale commercial kitchens to process food in our region.
3. Opportunities exist for farmers to collaborate on processing efforts by sharing equipment, utilizing communal storage facilities, and working together to brand and market regional products, but many are reluctant to do so.
4. Most farmers are satisfied with their current meat slaughter facilities, but a smaller secondary processing facility providing specialty cuts, curing, smoking, or other post-slaughter services could increase the diversity of meat products produced in our region.

Chapter 3: Processing and Storage

Assets

Diversity of value-added products

Any food products that have been enhanced by processing or cooking are known as “value-added products.” The six towns of the north and east Quabbin region are home to a variety of value-added products, from cheese and beer to salsa and coffee. As shown in Figure 2.3, meat and dairy are the most commonly raised products in our region after hay, leading to a great diversity of value-added meat and dairy products. Farms like Robinson Farm, Ruggles Hill Creamery, Little White Goat Dairy, and many other dairy farms are known across our region and the state for their cheese, yogurt and other dairy products. Stillman’s Quality Meats, Chestnut Farms, and many other livestock farms offer poultry, beef, pork, and other meat products locally and across the state.

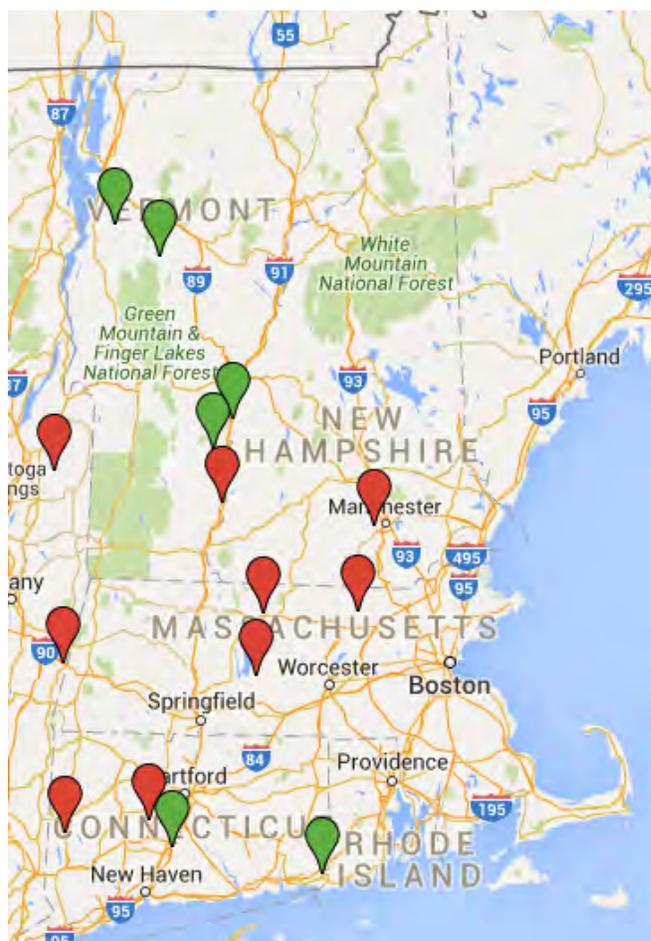
On a smaller scale, farmers and even some non-farming residents are producing salsa, smoothies,



Jay Sullivan and Sean Nolan opened Honest Weight Artisan Beer in the Orange Innovation Center in 2015. They use local ingredients from Valley Malt, which grows and malts barley in Northampton and Hadley.

jams and jellies, and baked goods in church kitchens and permitted residential kitchens around our region. Rachel’s Everlastings is a great example of a small-scale food processing operation using local ingredients to make salsa

Figure 3.1: Regional meat processing options



Although there are many meat processing options in New England, only three are located in Massachusetts: Adams Farm in Athol, Blood Farm in Groton, and Stillman Quality Meats in Hardwick. On the map above, slaughterhouses are shown in red, while post-slaughter processing facilities are shown in green.

Source: *Confronting Challenges in the Local Meat Industry: Focus on the Pioneer Valley of Western Massachusetts* (published by CISA in 2013)

and smoothies; see page 29 for more details about Rachel's Everlastings.

Another type of product being processed locally is beverages; Dean's Beans in Orange roasts organic, fair-trade coffee, while Honest Weight Artisan Beer just opened a new brewery in Orange in 2015 using local ingredients from Valley Malt. A new brandy still that will use local apples and other fruits may also be opening soon in Petersham, adding to the diversity of locally processed food products in the north and east Quabbin region.

Proximity to meat processing and slaughter facilities

Only two USDA-inspected slaughterhouses exist in Massachusetts: Blood Farm in Groton and Adams Farm in Athol. Stillman Quality Meats in Hardwick is also a licensed slaughter facility, but only for poultry. Adams currently serves over 100 individual farms, many of them in western and central Massachusetts.

The close proximity of Adams Farm is an important asset to the food system of the six-town region of the north and east Quabbin

region; in other areas of the state, making trips to and from the slaughterhouse costs livestock farmers a lot of time and money. According to a 2013 study by Community Involved in Sustaining Agriculture (CISA), farmers in the Pioneer Valley (which includes farmers in Franklin, Hampshire, and Hampden Counties, but not Worcester County) drove an average of 74 miles and spent about \$87 round trip just to bring animals to the slaughterhouse.

Farmers in the six-town region are all within a 25-mile radius of Adams Farm, implying that many of them likely spend less time bringing animals to the slaughterhouse than many farmers in other regions of the state. There are also several other slaughter and processing facilities in New England that may provide services beyond what Adams provides, including secondary, post-slaughter processing options like smoking and curing; see Figure 3.1.

According to farmer surveys conducted by FRCOG and CMRPC, 80 percent of responding farmers in five towns in the north and east Quabbin reported being satisfied with their current slaughter facility, and of those, three-quarters were "highly satisfied" (no data were

Highlight: Adams Farm

One of only two USDA-inspected slaughterhouses in the state, Adams Farm is an extremely valuable community asset. Most farmers in the region bring their beef cattle, pigs, lambs, and goats to Adams for slaughter and processing. The facility does not operate at capacity throughout the year but experiences extremely high demand during the winter and fall. According to farmer surveys conducted by FRCOG and CMRPC, the majority of farmers surveyed in our region who used Adams reported being "satisfied" or "highly satisfied."



Photo credit: Greenfield Recorder file photo

Highlight: Rachel's Everlastings

Rachel Gonzalez got her start making smoothies, salsa, and pesto using her own tomatoes and other local ingredients at the senior center in Orange. She would squeeze all her cooking for the day into the three-hour window between lunch and dinner at the senior center when the kitchen was free. Now she utilizes a church kitchen in Orange to prepare her products for sale at the farmers market and online through Mass Local Food. The church kitchen is already permitted by the Board of Health and is much closer to home—and more affordable for her small operation—than the Food Processing Center in Greenfield.



Photo credit: Rachel's Everlastings

available for Athol). The CISA meat study also found that, although demand for slaughter facilities is extremely high during the fall and winter, Adams is currently operating below capacity throughout the year. More secondary meat processing options may increase the variety of value-added meat products in our region, but at the moment there is no need for an additional slaughter facility in the area.

Adams does not currently slaughter or process poultry, and when farmers participating in the FRCOG and CMRPC farmer surveys were asked about the possibility of a new small batch poultry processing facility in the region, almost 70 percent of responding farmers had at least some level of interest. In the months since these surveys were completed, Stillman Quality Meats has opened its poultry slaughter facility for use

by other farmers. According to Kate Stillman, the farm's primary operator, the facility is now permitted to process 20,000 birds per year; as a result, Stillman's has grown its staff from just 4 or 5 workers to almost 30 in the past year alone. This venture will provide a sorely needed service for poultry farmers in our region and fill a long-term gap in the food system.

According to the FRCOG and CMRPC farmer surveys, farmers in all the north and east Quabbin towns expressed an overwhelming level of interest in seeing more value-added meat processing options at the Western Massachusetts Food Processing Center in Greenfield; over three-quarters of responding farmers indicated they would be either "somewhat" or "highly" interested. The Food Processing Center is focused on production of shelf-stable products and so does not currently offer meat processing of any kind for the moment. However, this level of interest indicates that there may be a need for small-scale secondary meat processing facilities in our region.



Kate Stillman raises turkeys, chickens, lambs, pigs, and beef cattle at Stillman Quality Meats in Hardwick. She also operates a small abattoir, or slaughterhouse, for poultry that has recently been permitted to accept birds from other farms as well as her own birds.

Photo credit: Katie Noble, Edible Boston

Barriers and Opportunities

Issues of scale and cost related to processing

As part of the farmer surveys conducted by FRCOG and CMRPC, farmers in all six towns of the north and east Quabbin region except Athol were asked if they process any of their produce into value-added products. Of those farmers who reported processing their produce, all of them in all five towns reported doing so on their own farm. The most commonly cited reason for this was that the farm is too small to use an off-farm processing facility; other commonly cited reasons included the regulations and cost associated with using an off-farm processing facility. These challenges are somewhat unique to farms in the north and east Quabbin region; out of all the farms in Franklin County, over half use off-farm processing facilities, and in Worcester County, two-thirds of all farms use off-farm processing

facilities. This may indicate a need for smaller-scale processing facilities to meet the needs of small-scale farmers in the six-town region.

All farmers surveyed in our region reported processing their produce on the farm, many citing that the farm is too small to use an off-farm processing facility.

Abundance of small-scale community kitchens

Although the Western Massachusetts Food Processing Center is an important asset to the larger regional food system, its relatively distant location and the cost of membership may be a deterrent to smaller farmers in the north and east Quabbin region who want to produce very small batches of value-added products for sale locally. One option for smaller processing operations is

Highlight: Western Massachusetts Food Processing Center

Located in Greenfield, the Franklin County Community Development Corporation (FCCDC) operates the Food Processing Center as a hub for food processors across New England. The Food Processing Center offers equipment rental, storage space, packaging space, marketing consultations, assistance with product development, and advice on navigating regulations for entrepreneurs producing shelf-stable food products. Members can pay a monthly fee for services or may rent equipment and space on an occasional basis. By renting equipment that would be expensive to buy and operating under the FCCDC's Board of Health permits and food safety certifications, members avoid many of the risks associated with starting a food business.



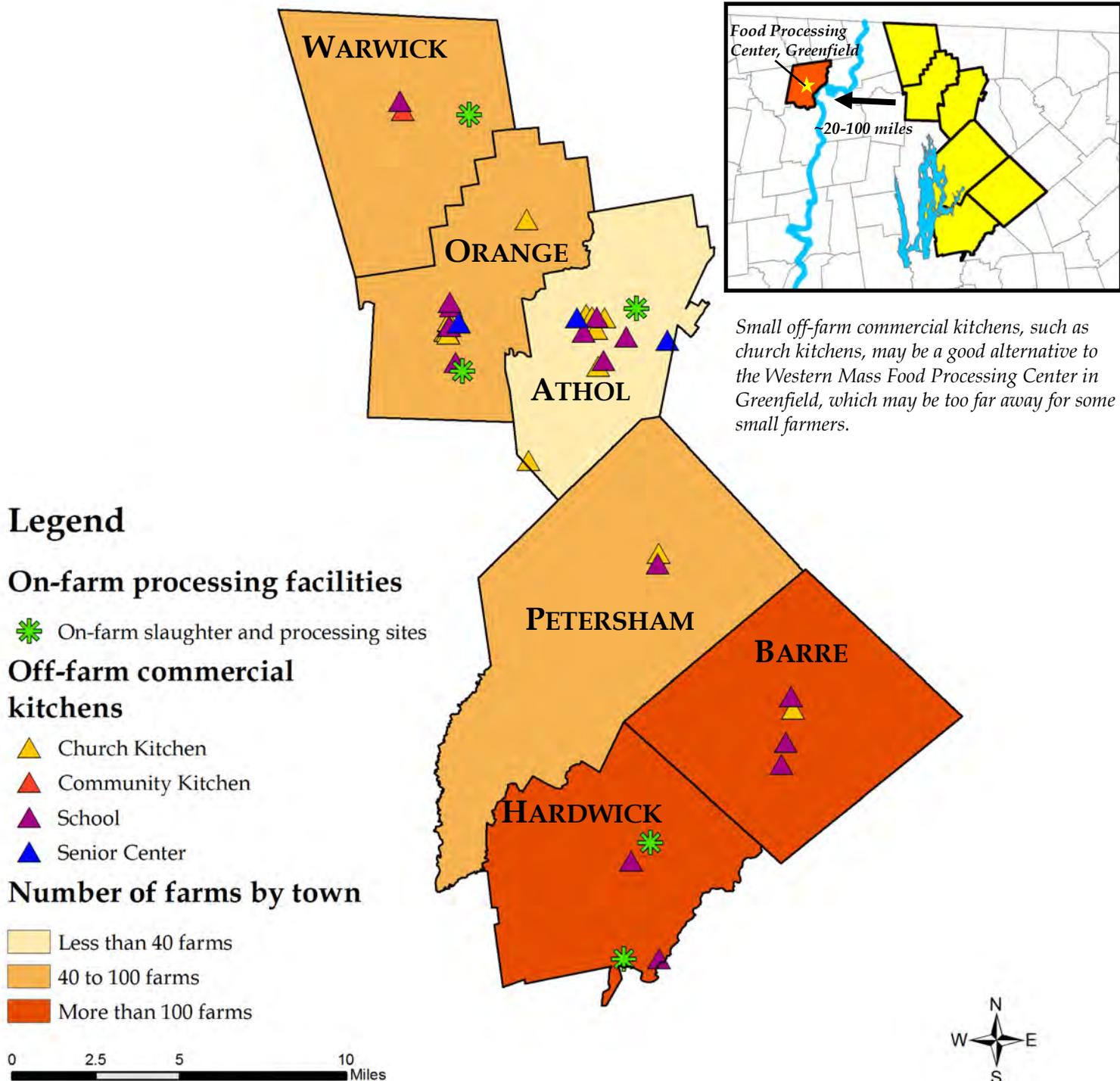
Nico Lustig showcases some of the shelf-stable products produced at the Food Processing Center.

Photo credit: Paul Franz, Greenfield Recorder

Recently the FCCDC has also expanded into frozen vegetable production, using equipment at the Food Processing Center to chop and flash-freeze local vegetables for sale to schools and other institutional buyers. The Food Processing Center has helped launch over 50 small businesses all over New England selling everything from salsa to kombucha, filling an important niche in the regional food system.

Food processing facilities...

Figure 3.2: On- and off-farm processing facilities compared to number of farms in each town



Sources: Local Board of Health permits; permits from the MA Food Protection Program; Mount Grace farmland inventory, 2014-2015

...on and off the farm

Figure 3.3: Number of food processing facilities on and off the farm in the six-town region

Town	On-farm processing facilities		Off-farm processing facilities					Total
	Slaughter	Processing	Church kitchen	Community kitchen	Residential kitchen	School	Senior center	
Athol	1	-	6	-	2	4	2	15
Barre	-	-	1	-	1	3	-	5
Hardwick	1	1	-	-	1	2	-	5
Orange	-	1	7	-	-	5	1	14
Petersham	-	-	1	-	1	1	-	3
Warwick	-	1	-	1	2	1	-	5

As shown in Figure 3.3, there are a variety of different types of commercial kitchens with Board of Health permits in the six-town region, from church kitchens and senior centers to permitted residential kitchens and larger off-farm processing sites. Athol and Orange have the largest number of potential community kitchens of any of the six towns.

Figure 3.4: Number of food processing facilities compared to population and number of farms

Town	Population (2010)	Number of farms	Number of processing facilities
Athol	11,584	39	15
Barre	5,398	172	5
Hardwick	2,990	197	5
Orange	7,839	102	14
Petersham	1,234	30	3
Warwick	780	89	5

As might be expected, the relatively rural towns of Barre and Hardwick have the most farms of the six-town region but the fewest permitted community kitchens. Athol and Orange have higher populations and are more urban, and so have more church kitchens, senior centers, and other potential food processing facilities. Athol is already a destination for many livestock farmers in our region because of Adams Farm, and the presence of so many commercial kitchens may indicate that Athol and Orange have a larger role to play in the food processing sector of the regional food system in the future.

Sources: Local Board of Health permits; permits from the MA Food Protection Program; US 2010 Decennial Census; Mount Grace farmland inventory, 2014-2015

to utilize local commercial kitchens that have already been inspected by the town Board of Health, such as a church kitchen. As shown in Figures 3.2, 3.3, and 3.4, there are fifteen permitted church kitchens as well as four community kitchen spaces (such as kitchens in town halls and senior centers) in our region. These spaces may be a good place for farmers and other entrepreneurs to get started with a small-scale processing operation for value-added goods.

Although it is difficult to bring all the ingredients and materials needed to make the product to an off-farm facility, processing food in a community kitchen has many benefits over the alternatives. Farmers and entrepreneurs trying to set up their own commercial kitchen need access to capital to purchase equipment that may be available in some community kitchens for low or no cost, while those using their own home kitchen may not be legally allowed to produce the same types of value-added products they could make in a community kitchen. Users of these community kitchens are allowed to produce a wider variety of products than if they were working in a residential kitchen, but still need to get their own



*Warwick Town Hall includes a community kitchen that has been inspected by the Board of Health and is available to residents and community groups by request.
Photo credit: Town of Warwick*

Board of Health permit to produce value-added products for sale.

Challenges related to collaborative processing efforts

Because so many farms in the region are relatively small, storage space and equipment are often limiting factors when it comes to food processing. Farmers could collaborate to share storage space, purchase expensive equipment, or develop and market products together, but there are logistical challenges. According to farmer surveys conducted by FRCOG and CMRPC, farmers in our region were split on the question of whether they would be interested in equipment sharing and/or collective purchasing of supplies; just over half expressed interest in the idea, while several others expressed concern over the logistical challenges involved. One farmer commented that, while sharing equipment may seem like an appealing idea, “this never works as planned.” Commonly listed equipment that farmers might be interested in sharing included manure spreaders and no-till seeders for hay and other crops. Food processing equipment such as industrial kettles or canning equipment could also be purchased collectively and shared among farmers interested in expanding into value-added products.

As for storing products grown or processed on the farm, most farmers use on-farm coolers and freezers. There is a dearth of communal storage facilities in the area, meaning beginning farmers have to invest in this equipment as part of their start-up costs. Shared storage facilities could benefit new farmers as well as established farmers in need of more storage space.

One way to address food processing challenges

related to scale is for farmers to work together to develop and market value-added products. Often, this means aggregating produce or milk from multiple farms and combining them all to make one product. A 2011 report from CISA recommends the construction of a new shared-use regional dairy processing facility in the Pioneer Valley to serve just this purpose, but this may not fit the needs of farmers in our region.

One farmer commented that, while sharing equipment may seem like an appealing idea, “this never works as planned.”

When dairy farmers in the north and east Quabbin were asked about the potential for a new dairy processing facility in the region as part of the FRCOG and CMRPC farmer surveys, they were overwhelmingly interested in utilizing it to process and sell their own brand of milk and dairy products, as opposed to aggregating their milk and working with other farmers to process milk and cheese. Although aggregating milk regionally might seem to make logistical sense, dairy farmers in the area value having their own brand of products with the name of the farm on the label. While farmers might be able to share equipment to produce value-added products, it seems unlikely that they would be interested in collaborating to develop products using ingredients from other farms.

Recommendations

Small-scale commercial kitchens such as church kitchens could be utilized by farmers interested in making small batches of value-added products.

Infrastructure already exists for farmers interested in expanding into small-scale production of value-added products.

Commercial kitchens in churches, senior centers, and schools can be utilized by farmers and local residents who don't have the capital to build their own commercial kitchen and get it inspected by the Board of Health. Athol and Orange in particular have a wealth of community kitchens that could be utilized for food processing.

These small community kitchens offer entrepreneurial farmers an opportunity to experiment with value-added products at a very small scale for sale at local farmers markets and retail stores. It should be noted, however, that not all community kitchens are currently available for public use. Towns should work with farmers and community organizations to reduce the fees associated with using community kitchens and draw up agreements for their use by community members. For farmers and residents who are ready to scale up production and receive more advanced training in product development and marketing, the Food Processing Center in Greenfield is also available as a valuable resource.

A farmer cooperative or trade association could facilitate sharing of processing and storage facilities among farmers.

Farmers in our region could come together to form a cooperative or trade association in order to share resources, collaborate on marketing and outreach efforts, and share some equipment and facilities. Possible initiatives could include a shared trucking service to bring products to market, drafting of equipment sharing agreements, construction of shared storage space, or collective purchasing of processing equipment. Formal agreements set up through a cooperative or trade association could make it easier for farmers to navigate the logistical

challenges associated with sharing equipment and storage space. University extension programs may have resources related to setting up a cooperative or trade association. Existing farmers co-ops, such as the Hardwick Farmers Cooperative Exchange, already have a membership base and could help to coordinate equipment rental and sharing among its members.

A new small-scale secondary meat processing facility or other meat processing options in the area could add to the diversity of meat products in the area.

The CISA meat study found that, although most farmers are happy with their current slaughter facility, the fact that there are only two slaughterhouses in the state means that many farms end up with very similar products; for example, Adams uses the same recipe for all its sausage, regardless of what farm it came from. Some farmers bring meat to secondary processing facilities like Westminster Meats for specialty cuts, smoking and curing, and other post-slaughter processing, but there is no similar facility in or near the north and east Quabbin region. Sometimes these facilities require a minimum volume as well, which smaller farmers from our region may not be able to meet. A small-scale meat processing facility offering secondary processing in the area could make it easier for farmers in our region to produce a wider diversity of meat products, which would be especially helpful considering the large number of meat producers in our region.

Resources:

- Scaling Up Local Food (published by CISA in 2011): www.buylocalfood.org/about/publications
- Confronting Challenges in the Local Meat Industry: Focus on the Pioneer Valley of Western Massachusetts (published by CISA in 2013): www.buylocalfood.org/about/publications

Chapter 4: Distribution

Overview

Many farmers in the six-town region of Athol, Barre, Hardwick, Orange, Petersham, and Warwick sell their products directly to consumers, whether through community supported agriculture (CSA) shares, the farmers market, or their own farm stand. Barriers to selling to larger markets include logistical challenges, especially delivering products to market, as well as minimum volume requirements imposed by some larger markets. Several outlets exist for farmers interested in selling food to local markets, including Quabbin Harvest in Orange and the Country Store in Petersham, as well as some supermarkets. The Massachusetts Local Food Cooperative and Lettuce Be Local both serve as regional distributors of local food but face challenges finding new customers and finding producers willing to deliver produce to the drop-off site. Some farmers markets in our region have also struggled to attract customers.

Top four ways farmers sell products in our region

1. Our farm stand (67%)
2. Direct to stores (33%)
3. Farmers market (29%)
4. Direct to other farms (29%)

Sources: FRCOG and CMRPC farmer surveys (no data available for Athol)

Major Findings

1. Many farms in our region sell direct to consumers through farm stands, farmers markets, or CSAs.
2. Several outlets exist for farmers interested in selling food to local markets, but logistical challenges exist for both farmers bringing their products to market and small retail markets interested in sourcing local products.
3. There is a need for stronger connections between farmers and institutions such as schools interested in sourcing local food.

Chapter 4: Distribution

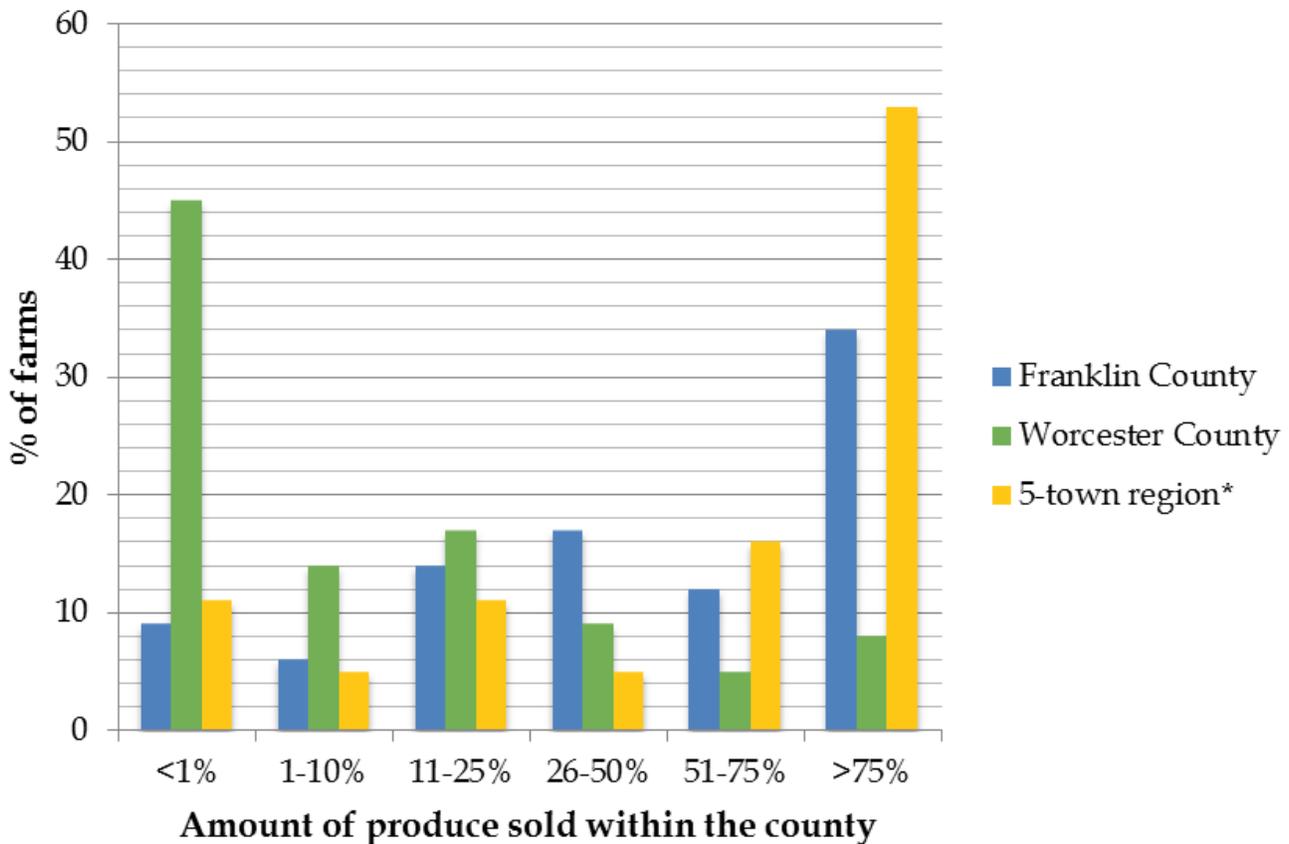
Assets

Benefits of direct-to-consumer sales

Food grown in the north and east Quabbin region tends to be consumed locally, as shown in Figure 4.1. According to farmer surveys conducted by the Franklin Regional Council of

Governments (FRCOG) and the Central Mass Regional Planning Agency (CMRPC), about 70 percent of farmers surveyed in our region sell at least half of their produce within their own county; over 50 percent sell at least three-quarters of their produce within the county. For more information about the FRCOG and CMRPC farmer surveys, see Appendix B.

Figure 4.1: Amount of produce sold locally for farms in Franklin and Worcester County



Compared to county-wide statistics, products from the north and east Quabbin region are more likely to be consumed locally. For this chart, “locally sold” produce is sold within the same county where it was grown. In our region, over half of farms surveyed sell at least three-quarters of their produce within the county where it was grown, compared to about 35 percent of all farms in Franklin County and less than 10 percent of all farms in Worcester County. On the other end of the spectrum, nearly half of all farms in Worcester County sell less than 1 percent of their produce locally, compared to only 10 percent of farms in the five-town region.

Sources: Franklin County Farm and Food Systems Project; FRCOG and CMRPC farmer surveys

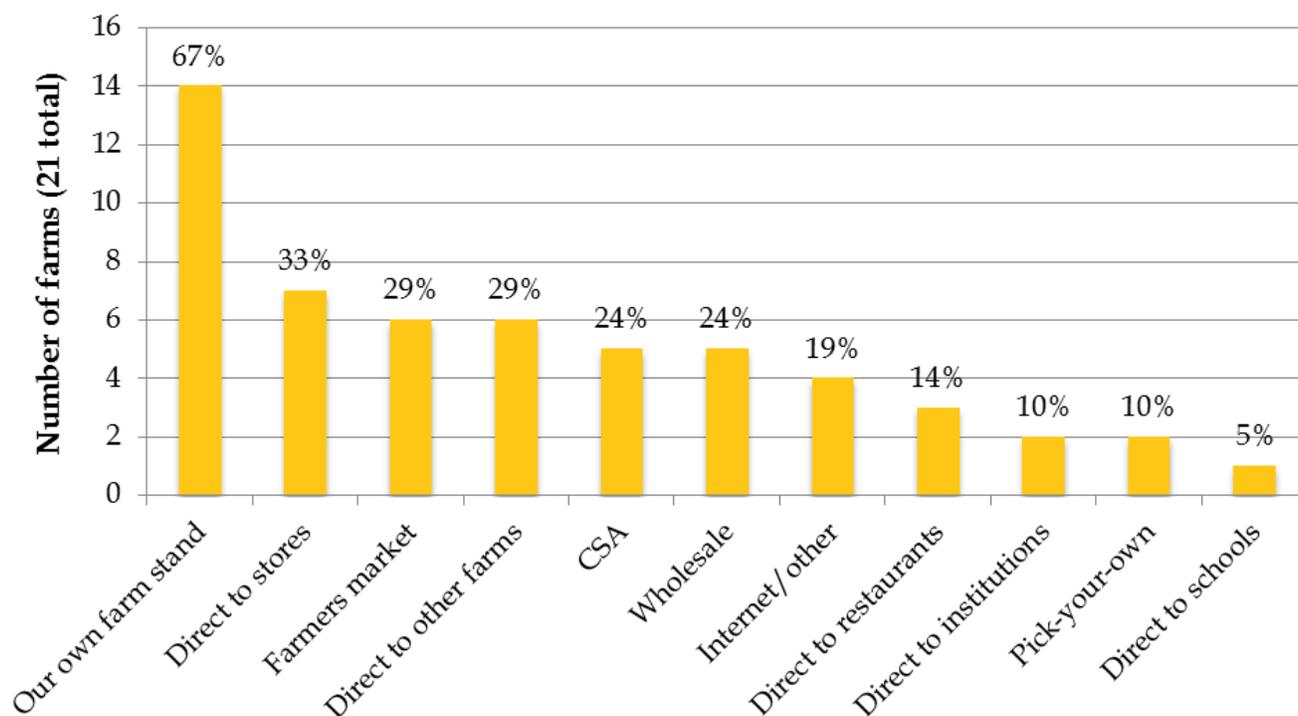
*No data available for Athol

Much of this produce is sold directly to consumers at farm stands or farmers markets. As shown in Figure 4.2, according to the FRCOG and CMRPC farmer surveys, the most popular means of selling farm products in the north and east Quabbin region is farm stands, with two-thirds of farmers reporting that they sell at their own stand. A third of farmers in our region sell products directly to stores, making it the fourth most common way of selling products. The reason for this may be that many of the farms in this region are small and so have an interest in maintaining a loyal base of local customers, without introducing the added cost and logistical challenges of selling to markets or through a middle man.

Options for retail outlets and other distribution methods for local food

One of this region’s strengths is the availability of retail outlets that source local food, as seen in Figure 4.3. Quabbin Harvest in Orange and the Country Store in Petersham have taken the lead on this front, but even some larger grocery stores source local products on a seasonal basis. Market Basket orders seasonal produce from the local area when cost allows, while Hannaford features a program called “Local Farm Stand” where local farms are showcased on a daily basis during the growing season.

Figure 4.2: Distribution methods used by farms in the 5-town region*



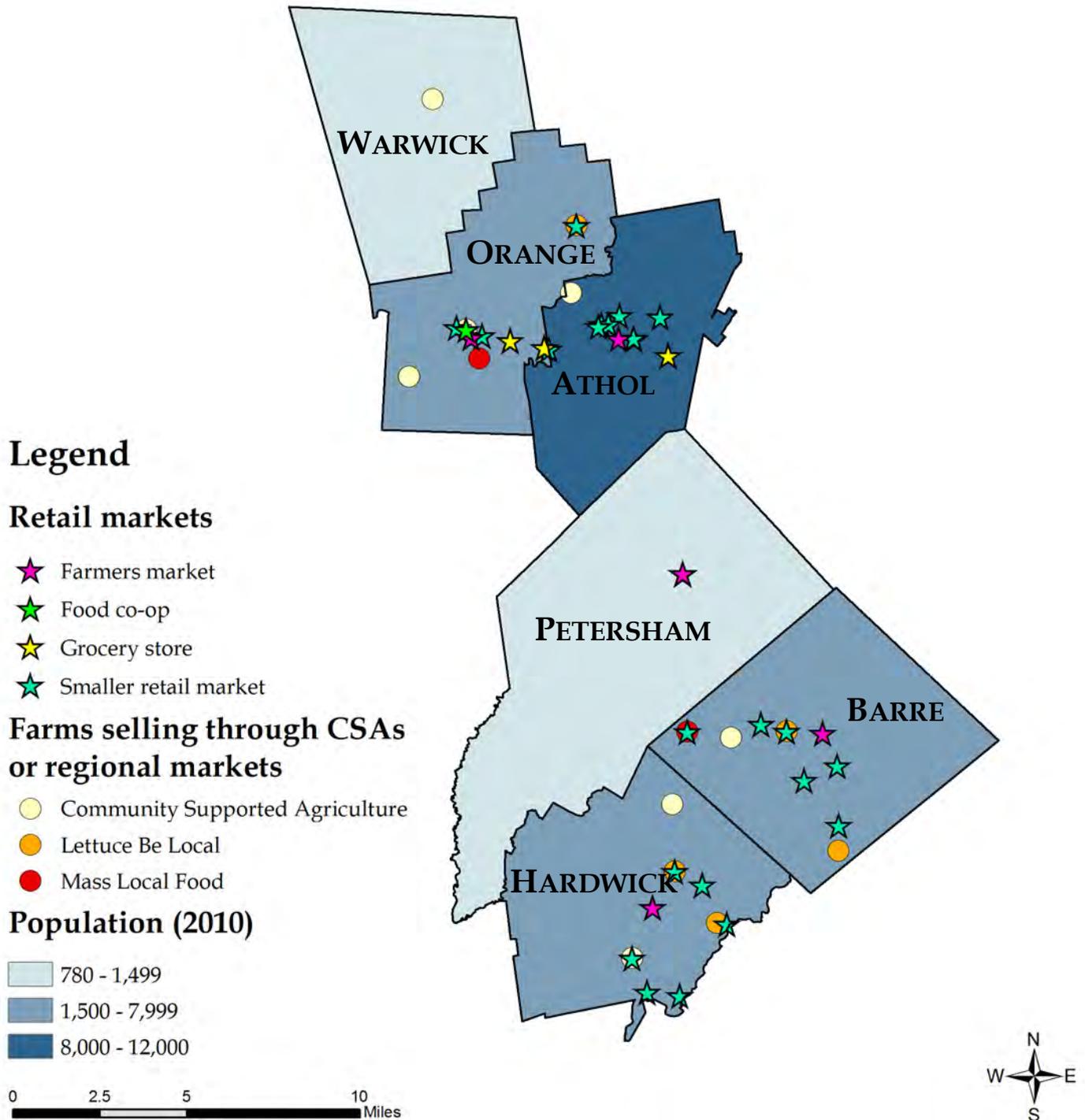
The top four ways that farmers in the north and east Quabbin region sell their products are farm stands (67%), direct to stores (33%), farmers market (30%), and direct to other farms (30%). Although about a quarter of farms reported selling produce wholesale through distributors or farmers’ co-ops, a very small percentage reported selling direct to institutions, restaurants, or schools.

Source: FRCOG and CMRPC farmer surveys

*No data available for Athol

Distribution channels

Figure 4.3: Food retail markets and other distribution channels compared to town population



Sources: Local Board of Health permits; US Decennial Census 2010; masslocalfood.org; lettucebelocal.com
 Note: "Smaller retail markets" include farm stores, convenience stores, and other small stores.

Highlight: Quabbin Harvest

Quabbin Harvest co-op in Orange is housed in a building purchased by Mount Grace Land Conservation Trust in 2014 and is the only cooperatively owned retailer of local food in the six-town region. Although small, the co-op sells a variety of local produce, dairy products, meats, and prepared foods as well as staples like grains and household supplies. The store is committed to buying local whenever possible, which means staff are often stretched thin driving to different farms to pick up produce and negotiating with distributors who find it inconvenient to stop for small deliveries. In spite of these challenges, the co-op has recently instituted several new programs aimed at ensuring that food in the store is affordable for residents of Orange and the surrounding region. One program is a discounted CSA share for SNAP recipients; another is the Basics program, which lowers the price (and the profit margin) for essential items like milk and rice.



Leigh Youngblood, Executive Director of Mount Grace Land Conservation Trust, shops at Quabbin Harvest after its opening. Photo credit: Quabbin Harvest

Farmers may also utilize other avenues to market and distribute their products. Central Mass Grown is a new “Buy Local” campaign developed by Central Mass Regional Planning Commission and Montachusett Regional Planning Commission to promote farms in Worcester County and beyond. Programs like this can be especially helpful for small farm operators that don’t have time to find new markets or advertise their products. Commonly cited reasons farmers gave for not selling more products within their own county was the need for product development and marketing assistance and not having enough time to market the product, according to the FRCOG and CMRPC farmer surveys. Online distribution networks have also started to crop up to connect farmers and consumers more directly; see the next page for more information.



Barriers and Opportunities

Challenges for small retail markets

Although many farms in our region sell direct to consumers at farm stands, retail outlets provide an important avenue for farmers to reach customers who value the one-stop shopping model of a larger grocery store. Small retail markets like Quabbin Harvest are committed to sourcing local food, but struggle to get certain products onto the shelves because of logistical challenges related to distribution. Food distributors, even smaller regional companies, are often unwilling to deliver to Quabbin Harvest because of its out-of-the-way location and the small size of its orders. Even trucks that pass through Orange on their way to Boston or Greenfield often won’t stop at the store, and farmers are not able to deliver the produce themselves in many cases, leaving co-op staff to drive around our region picking up produce and other products in their own vehicles.

Even before local products are loaded onto the truck, small markets face significant challenges with the ordering process. While there are some distributors that offer a variety of local products, many products must be ordered separately from a number of different farms and distribution companies; according to Ari Pugliese, owner of the Country Store in Petersham, the result is “a million invoices and a million phone calls” for the person doing the ordering. For him, sourcing local food in the store has become “a full-time job” in itself. At the same time, there are certain products that are difficult to source locally; according to Amy Borezo, a member of Quabbin Harvest’s Board of Directors, there is a demand for fruit at the co-op that can’t be filled within the north and east Quabbin region. Small retail markets like the Country Store and Quabbin Harvest would benefit if there were some way to aggregate products from various farms to simplify the ordering and delivery process.

Making local produce more affordable

Although many products grown in the north and east Quabbin region are consumed locally, many farmers feel that the price point is too low. According to data from the FRCOG and CMRPC farmer surveys, for farmers selling their products outside their own county, the most commonly cited reason was that many people in the area can’t afford to buy local produce. This may also be a factor in the dip in sales many farmers have felt at area farmers markets in the past year.

There are many socio-economic challenges within our region, and access to healthy food is a serious challenge. Organizations like the North Quabbin Community Coalition (NQCC) and area food banks are working to help people access healthy food, while organizations like Seeds of Solidarity are empowering people to grow their

Highlight: Massachusetts Local Food Cooperative and Lettuce Be Local

A new model of regional distribution has recently cropped up in the north and east Quabbin region. Various known as an online farmers market, online CSA, or digital food hub, this model allows customers to select a variety of local products from farms across the state online, then collect their order at a pick-up spot near their home or workplace. In order for produce, meat products, and value-added products to get from the farm to the customer, producers must deliver their products to a central drop-off site, where it is aggregated and sorted in accordance with customer orders and delivered to one of several customer pick-up sites. This requires a complex transportation network and a meticulous inventorying process; in many cases, the model also depends on the ability of producers to leave the farm once a week to deliver their products to the drop-off site, which can be a challenge for some smaller farms with limited staff.



Two distributors using this model in the north and east Quabbin region are the Massachusetts Local Food Cooperative and Lettuce Be Local. Both have their focus in central Massachusetts, including Worcester County and parts of Middlesex County. Mass Local Food bills itself as an online farmers market for individual customers, while Lettuce Be Local delivers farm products to restaurants, schools, and institutional kitchens. Both organizations are relatively new and are working to establish themselves; Mass Local Food does not yet have any paid staff and relies entirely on volunteers. However, it is clear that both Lettuce Be Local and Mass Local Food fill a need to establish a direct link between farmers and consumers.

own food. Even so, many people in our region can not afford to buy healthy, local products for themselves and their families.

Top three reasons farmers don't sell more food locally

1. Many people in the region can't afford to buy local produce
2. Need for product development and marketing assistance
3. Not enough time to market the product

Sources: FRCOG and CMRPC farmer surveys (no data available for Athol)

Need for stronger institutional connections

There is a need to create stronger links between farmers and institutions to promote bulk purchases of local food. Farmers are often too busy to make these connections or adequately advertise their products to these buyers, and institutional buyers may need help navigating the process of buying directly from a farmer. Institutions such as schools and hospitals can be important customers for local farms, but often there are enormous logistical challenges associated with institutional procurement of local food. For example, public schools have to comply with various USDA regulations related to food procurement, and many institutions already have contracts with private food service companies such as Sodexo or Chartwells that may limit the amount of food they can buy from local farms.

Large institutions that serve hundreds or thousands of meals per day also often prefer the convenience of ordering from a large distributor rather than placing many smaller orders from local farms and small distributors. Chapter 5 contains more information about challenges related to farm-to-institution connections in our region.

Recommendations

“Buy Local” branding campaigns can help farmers promote their products to local consumers and get technical assistance with advertising and finding new markets.

Examples of “Buy Local” campaigns in our region include the “Local Hero” program from Community Involved in Sustaining Agriculture (CISA) and the Central Mass Grown program from the Central Mass Regional Planning Commission (CMRPC). These programs promote local food and provide education on the benefits of ‘eating local.’ Farmers who participate in these



The “tasting garden” at Quabbin Harvest is a partnership between the co-op, Mount Grace Land Conservation Trust, Seeds of Solidarity, and local volunteers. The annual garden beds, donated by Seeds of Solidarity, produce fresh vegetables that can be tasted and enjoyed by the community.

Photo credit: Quabbin Harvest



CISA's "Local Hero" program provides branding and marketing assistance to farms in the Pioneer Valley and beyond.

Photo credit: Community Involved in Sustaining Agriculture

campaigns receive branding resources, participate in business development workshops and marketing events, and are promoted in an annual farm catalogue. These organizations often also host events to connect farmers with restaurants, markets, and institutions; for example, Central Mass Grown hosts "Meet Your Farmer" and "Meet Your Cook" events, while CISA hosts "Local Restaurant Days." These organizations could host additional events with a focus on the north and east Quabbin region, such as a farm-to-table fundraiser for local farms or an "artisan cheese tour" to highlight the many cheese producers in our region.

A shared trucking service or physical food hub could simplify distribution challenges for both farmers and small retail markets.

Because of the small scale of many farms in the area and the small orders of retail markets like Quabbin Harvest and the Country Store, a service to aggregate different types of produce into a central location could make distribution of

local food much easier. A shared trucking service could fulfill this role; one example of a trucking service committed to serving local farms is Squash Trucking in Belchertown, shown below. However, a service like this would have to come equipped with an efficient labelling and inventorying system so that farmers could keep track of their products as they travel from the farm to the market or restaurant.

A similar idea would be to establish a physical food hub in a central location. The term "food hub" can have a variety of meanings and exist on a variety of scales, but in essence it would be a physical space where farmers can bring their produce to be sold to multiple customers at once. It could be as small as a refrigerator in someone's garage where local cheese is stored before being sold to area restaurants or as large as a warehouse.

As part of the CMRPC farmer survey, farmers in Hardwick and Barre were asked to rate their



Eric Stocker and Marge Levenson of Squash Trucking provide climate-controlled delivery of products from Pioneer Valley farms to local stores and restaurants.

Photo credit: Squash Inc.

interest in a variety of distribution methods, and the method that rose to the top was a physical food hub in the city of Worcester. Fortunately for those farmers, the Worcester Regional Environmental Council has partnered with the Worcester Chamber of Commerce in the past year to make this idea a reality. Brian Monteverd of the Worcester Regional Environmental Council describes his vision for a Worcester-based food hub as a “mix of networking and information-sharing as well as infrastructure building.” The food hub would not only serve as a central location where local products could be aggregated and distributed to stores, restaurants, and institutions, but would also host culinary training programs, support a culinary kitchen incubator, and facilitate food access projects for vulnerable populations in the city.

Strengthen connections between farmers and institutional buyers, and help schools and institutions navigate complex food procurement guidelines and distribution networks.

As seen in Figure 4.2, only 10 percent of farmers surveyed in our region currently sell their food direct to institutions; only 5 percent sell direct to schools. One strategy to make it easier for institutions to purchase local food would be for farmers to work together to aggregate their products using a shared trucking service or food hub to make ordering easier for large institutional buyers. Farmers could also assemble a “package” of local foods to make a single “local meal” to market their products to schools and institutions on a meal-by-meal basis, or find other ways to collaborate to entice institutional buyers. Training and education are also needed for institutional buyers to navigate procurement guidelines for local food. See Chapter 5 for more information about farm-to-institution links.

Resources:

- Lettuce Be Local: www.lettucebelocal.com
- Massachusetts Local Food Cooperative: www.masslocalfood.org
- Central Mass Grown: <http://centralmassgrown.org/>
- CISA’s Local Hero program: www.buylocalfood.org

Chapter 5: Consumption

Overview

Food preparation and consumption takes place in people’s homes, at restaurants, in schools and institutions, and in the prepared foods section of some retail markets. While farmers markets, farm stores, and certain markets and restaurants are making strides at offering local products, a large percentage of restaurants in the six-town region of Athol, Barre, Hardwick, Orange, Petersham, and Warwick fall into the category of fast food, convenience food, or pizza. In a region where unemployment and poverty are prevalent (as shown in Figure 5.1), these establishments are often the most affordable option for many residents, but may not be the healthiest. However, sourcing local ingredients can be costly and logistically challenging for any restaurant or market, and even more so for establishments focused on affordability and convenience.



Rob Sacco cooks up some soup using local ingredients at Soup on the Fly in Athol.

Photo credit: Soup on the Fly

Figure 5.1: Selected socio-economic indicators for the six-town region compared to state averages

Town	2010 population	Median household income	Percentage of households receiving SNAP benefits	Poverty rate	Unemployment rate
Athol	11,584	\$46,964	17.70%	15.80%	13.70%
Barre	5,398	\$69,016	2.90%	4.70%	9.50%
Hardwick	2,990	\$58,073	9.50%	14.20%	11.00%
Orange	7,839	\$44,825	19.90%	12.70%	17.30%
Petersham	1,234	\$72,917	2.20%	7.90%	9.60%
Warwick	780	\$55,859	6.00%	11.10%	5.80%
Massachusetts	6,547,629	\$66,866	11.70%	11.40%	8.90%

The six-town region of the north and east Quabbin is generally rural, and for most of these towns, median household income is lower and the poverty rate is higher than the state average (the exceptions being Petersham and Barre). Athol and Orange are the most urban towns in this region and also have the highest rates of unemployment at 13.7 percent and 17.3 percent respectively. In Athol, 17.7 percent of residents receive SNAP benefits, formerly known as food stamps; in Orange, it’s nearly 20 percent. Because these two towns are home to most of the population of the six-town region and have high rates of poverty, unemployment, and dependence on SNAP benefits, efforts to improve access to healthy, local food should begin in Athol and Orange.

Sources: US Decennial Census 2010; American Community Survey 5-year estimates 2013.

Buying local may not be a priority when it comes to purchasing food to prepare at home, either. According to a 2014 food access study by the North Quabbin Community Coalition, the most-cited reason for shopping at a particular place was “good selection,” closely followed by “close to home,” indicating a preference or need for convenience and one-stop shopping.

Major findings

1. There is some interest in local food among area residents, but price and convenience pose major barriers. Access to healthy, local food is a challenge for our region’s most vulnerable residents.
2. Some options exist for purchasing local food in our region, but overall non-local options like fast food restaurants and convenience stores dominate our region.
3. There are untapped markets for local food in our region, including schools, institutions, restaurants, and food pantries. Increasing the amount of local food available to consumers through these avenues could help support local farmers and greatly increase the amount of food consumed locally.

Chapter 5: Consumption

Assets

Opportunities to “buy local”

Residents of the north and east Quabbin have many choices when it comes to purchasing local food. Every town except Warwick has an active farmers market, some of which accept SNAP benefits. Many farms in the area also have farm stores, farm stands, or community-supported agriculture (CSA) shares. Small retail markets such as Quabbin Harvest in Orange and the Country Store in Petersham offer fruits, vegetables, meat, dairy products, and value-added products from local farms. Several restaurants in the area also procure food from local farms; for example, Soup on the Fly restaurant in Athol gets grass-fed ground beef from the Moore farm in Orange and pumpkins, leeks, potatoes, and other vegetables from Kiwi Meadows Farm in Orange. The Blind Pig restaurant in Athol also procures some local meat and produce, as well as many local beers, but this is not visibly highlighted on their menu or in their marketing. This seems to be typical of many restaurants in our region; those that do procure local food often don't advertise that fact to their customers.

Interest in fresh, healthy produce

According to a 2014 study by the North Quabbin Community Coalition (NQCC) about food access in the nine towns of the North Quabbin (which excludes Hardwick and Barre), there is significant interest in fresh food, home cooking, and local food procurement among residents of the region. Although 86 percent of survey respondents said they acquire the majority of the food they cook at home from the supermarket, 63

percent reported that at least some of their food came from a farmers market or food co-op, indicating an interest in local food and a willingness to diversify shopping routines. It should also be noted that Hannaford and Market Basket both purchase a significant amount of produce from local farms; Hannaford also highlights those farms with a special display called “Local Farm Stand.”

Most NQCC survey respondents reported eating fruits or vegetables 2 to 4 times per day, and most of the produce they purchased was fresh. The most commonly served fruits and vegetables were apples, bananas, berries, broccoli, lettuce, and tomatoes, almost all of which can be grown in this region. This indicates that there may be potential for increased demand for fresh, local produce in the future. However, it seems clear

Highlight: Petersham Country Store

The Country Store is a small retail market and restaurant that sources local food almost exclusively. Located in a building owned by East Quabbin Land Trust, the Country Store is an important meeting and eating place for residents of the small town and the surrounding area. “Local food tastes better,” says proprietor Ari Pugliese, but sourcing from local farms “is almost a full-time job in itself.” Many other markets and restaurants in the area don't have the resources to buy local, even if they'd like to.



Photo credit: East Quabbin Land Trust

that this demand is currently skewed towards higher-income households; the survey found that households with incomes of over \$60,000 were three times more likely to purchase and prepare vegetables.

North Quabbin residents with a household income over \$60,000 were three times more likely to purchase and prepare vegetables.

Resources for vulnerable populations

Access to healthy food is a challenge for many people in our region, but there are several organizations working to improve food access for our most vulnerable populations. Food pantries and churches in Orange and Athol provide hot meals as well as food to take home for community members in need. The North Quabbin Community Coalition connects residents of the North Quabbin (which excludes Hardwick and Barre) with resources related to

hunger relief, heating assistance, and health care. Seeds of Solidarity Education Center in Orange works on issues of food justice and access through its Grow Food Everywhere program, which builds raised beds and provides gardening and nutrition education for schools, health centers, libraries, daycares, and other local businesses and institutions.



*A CSA share from Quabbin Harvest features produce from local farms.
Photo credit: Quabbin Harvest*

Barriers and Opportunities

Local food markets struggling

Although several outlets exist where residents can buy local food, many of those markets and restaurants are struggling. Farmers markets in Athol and Orange have been struggling to attract customers, and as a result some farmers this year have reported making half or even a quarter of the profits they made at the market in previous years. Quabbin Harvest in Orange has only been open for one year, but so far has struggled to reconcile its dual commitments to give farmers a fair price while also keeping food affordable for low-income residents. In an effort to address these challenges, Quabbin Harvest has recently launched a SNAP CSA program and a program called Basics designed to keep prices low on produce and other “basic” necessities. In spite of a burgeoning interest in fresh, local food among community members, the restaurant market in our region is saturated with pizza and fast food options. These issues can be traced to two major barriers: price and convenience.



*The Salvation Army in Athol provides weekly hot meals and food to take home for community members in need. Eighteen percent of Athol residents and nearly twenty percent of Orange residents receive SNAP benefits, indicating that food access and affordability are important issues in our region.
Photo credit: Google Maps*



*Farmers markets in our region provide an important connection between farmers and their customers, but recently the Athol and Orange farmers markets have struggled to attract customers. This may indicate a growing preference for convenience and one-stop shopping.
Photo credit: Cathy Stanton*

Price of local food

The question of whether local food costs more than non-local food is a thorny one and is highly dependent on regional factors, seasonality, growing practices, scale (of both the farm and the distribution network), and many other factors. The Franklin County Farm and Food System Project performed a produce pricing assessment for Franklin County and found that locally-grown food can be cheaper than non-local produce, with seasonality being a major factor.

Although an organically grown tomato during the height of the season may cost the same at the farmer’s market or the co-op as at a grocery store or convenience store, there may still be perceptual barriers related to price. People may not be willing to change their buying habits because they think local food costs more, whether it does or not. Regardless of whether local food actually costs more than non-local products, buying patterns are closely linked with

income; according to the NQCC Food Access Survey, North Quabbin respondents with a household income level under \$40,000 did most of their shopping at grocery stores and convenience stores, while respondents with a household income above \$40,000 tended to shop at farmers markets and co-ops.

When asked to list barriers to accessing fresh fruits and vegetables, respondents to the NQCC survey listed price as a major factor, followed by poor quality of produce. This may indicate that smaller local markets like Quabbin Harvest and the Country Store in Petersham could draw more people in with high quality, local produce if it were sold at competitive prices and in conjunction with an outreach campaign to bring in a more diverse customer base.

Convenience highly valued

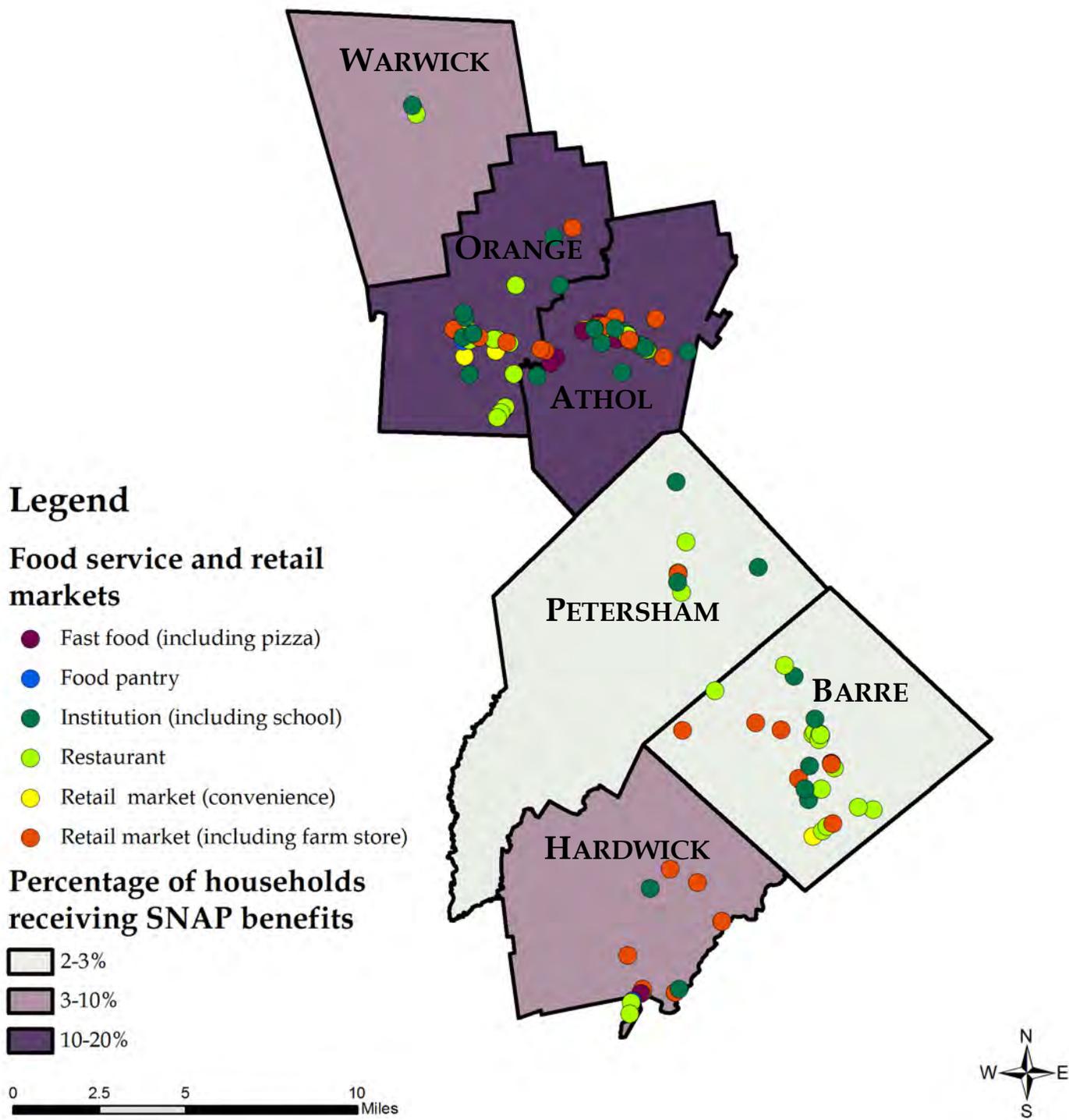
Another important barrier that limits access to fresh, local food in our region is the value placed by many residents on convenience. Many people



*A produce pricing assessment in Franklin County showed that produce can often cost less at co-ops and farmers markets than at grocery stores, but there are still perceptual barriers that may prevent more people from buying local.
Photo credit: Quabbin Harvest*

Where do people in our region eat?

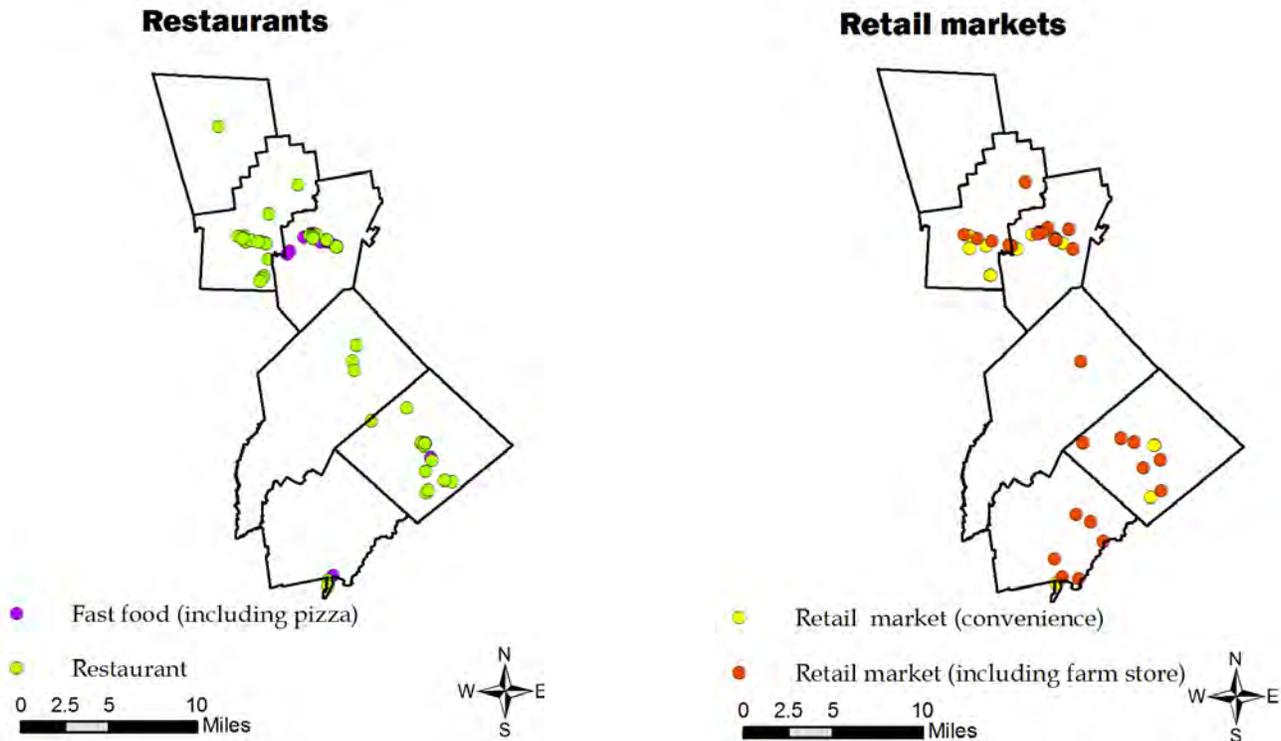
Figure 5.2: The location of food service establishments and retail markets compared to percentage of people receiving SNAP benefits



Sources: Local Board of Health permits; American Community Survey 5-year estimates 2013

Prevalence of fast food

Figure 5.3: Fast food restaurants and convenience stores in the six-town region



Of all the restaurants in the six-town region, 27% are fast food or pizza restaurants.

Over a third (36%) of retail markets selling food in the six town region are convenience stores.

Town	Total restaurants	Number of fast food/pizza restaurants	Percent fast food/pizza	Total retail markets	Number of convenience stores	Percent convenience stores
Athol	22	11	50%	17	6	35%
Barre	17	3	18%	9	3	33%
Hardwick	3	1	33%	8	2	25%
Orange	20	3	15%	10	5	50%
Petersham	3	0	0%	1	0	0%
Warwick	1	0	0%	0	0	-
Six-town region	66	18	27%	45	16	36%

A review of food service establishment permits from the Boards of Health in each of the six towns reveals a high concentration of fast food restaurants and convenience stores in our region. Out of all the restaurants in Athol, for example, half fall into the category of fast food or pizza; in Hardwick it's a third. Similarly, in the category of retail markets, which includes grocery stores, general stores, farm stores, and any other establishment permitted to sell uncooked food, there is a high percentage of convenience stores in four of the six towns. In Orange, half of all retail markets are convenience stores. This trend indicates that there is a demand for affordable, convenient food options in our region that may eclipse the demand for local products.

Sources: Local Board of Health permits



School food service directors attend a training in local food procurement for K-12 schools organized by the Franklin County Food Council in November 2015. Institutional regulations for procuring local food are often difficult to navigate, especially for K-12 schools.

in our region don't have time to cook or don't have experience cooking, so they are less likely to purchase raw produce. Most respondents to the NQCC Food Access Survey ranked "easy to prepare" as the most important criteria for purchasing food. This trend is also evidenced by the prevalence of fast food restaurants and convenience stores in the six-town region, as shown in Figures 5.2 and 5.3.

Quabbin Harvest co-op has tried to respond to this trend by offering a "Grab and Go" case with salads, soups, pastries, and other prepared food. The co-op has also recently launched a cooking class to help community members learn how to prepare healthy meals at home. However, neither the co-op nor the Country Store in Petersham can offer the same kind of one-stop shopping as Wal-Mart or Market Basket. This desire for one-stop shopping may be part of the reason why some area farmers markets are struggling as well. Another challenge is that low-income residents can't use SNAP benefits to buy ready-to-eat foods at the farmers market, so they may be more

inclined to buy easy-to-prepare foods from the grocery store rather than raw produce from the farmers market.

Challenges connecting farms to institutions

A key leverage point for effecting change in people's eating habits is institutional food service. Schools, hospitals, retreat centers, nursing homes, health care centers, and other institutions in our region serve thousands of meals per day. Even a weekly or monthly focus on products from local farms could get people, especially schoolchildren, thinking about where their food comes from and supporting local farmers.

The Massachusetts Farm to School Project runs a program for schools called Harvest of the Month where local produce is featured in school cafeterias on a monthly basis, but no schools in our region currently participate in this program. The only school district in our region that reported sourcing any local food in the USDA Farm-to-School Census was the Athol-Royalston district; Quabbin Regional High School in Barre also sources some food from its school garden, but this accounts for only a tiny fraction of the school's total food procurement.

Making connections with farmers can be challenging for institutions, especially



The Massachusetts Farm to School Project runs a program for schools called Harvest of the Month where local produce is featured in school cafeterias each month.

for public schools, which need to follow stringent USDA guidelines regarding food procurement. More support and guidance is needed for institutions interested in procuring local food, as well as for farmers interested in reaching out to institutional buyers. Chapter 4 contains more information about the complex regulations and distribution networks that schools and other institutions have to navigate when it comes to procuring local food.

Schools in Athol and Orange already have a strong connection to certain local farms, but for a different sector of the food system; food waste from the school cafeterias is picked up by a local pig farmer in each town, who uses it as animal feed. This program has shown to be effective in getting kids thinking about their eating habits in terms of where their food ends up; cafeteria workers rarely have to remind students that “pigs don’t eat plastic straws!” anymore. See Chapter 6 for more information about school waste recovery programs.

Recommendations

Support access to local food and cooking education for all people, especially low-income residents, children, and the elderly.

Access to fresh, local produce is an important element of individual and community health, especially for vulnerable populations. Because Athol and Orange are home to most of the population of the six-town region and have high rates of poverty, unemployment, and dependence on SNAP benefits, efforts to improve access to healthy, local food should begin in those two towns. Many programs already exist to connect low-income people with local food, including SNAP programs at farmers markets

and at Quabbin Harvest co-op. These programs should be supported and widely advertised to draw in people who might see price as a barrier to purchasing local food.

Educational programs in scratch cooking could also empower residents who currently rely on convenience food to start purchasing and using more fresh produce. Finally, increasing the volume of fresh, local food available at food pantries through food donation and gleaning programs, as well as addressing logistical challenges like storage and staff capacity at food pantries, will help improve access to healthy food for our region’s most vulnerable populations. See Chapter 6 for additional recommendations about connecting food pantries with local produce.

Increase marketing and branding of local farms and establishments that sell or utilize local products.

Farmers in the north and east Quabbin region, especially those with small farm operations that may not have any full-time employees, struggle to find time to market their products. As noted in Chapter 4, “Buy Local” programs like the “Local Hero” program or the “Central Mass Grown” program help farmers with marketing and branding and promote member farms in annual catalogs and other publications. These programs should be supported and expanded so that more farmers may enjoy their benefits. In addition, towns can support the branding of their local farms through their own marketing and signage.

Establishments that sell or procure local food should also be celebrated through these programs or other marketing campaigns. An example is CISA’s “Local Hero Restaurant Days,” where restaurants that procure food from “Local

Hero” farms are promoted. A campaign like this one could serve a dual purpose of bolstering struggling farms and restaurants while also lending the north and east Quabbin more of a regional identity and spurring economic development. A low-hanging fruit would be for restaurants that already procure local food to advertise those farms on their menus to increase awareness and celebrate local food.

Improve connections between farmers and retail markets, restaurants, and other outlets and support smaller markets that source local food.

Although many farms in our region sell direct to consumers through CSA shares, farm stands, or farmers markets, one way to expand and diversify the consumer base for local food will be to connect farmers to retail markets. This introduces more logistical challenges for farmers than direct-to-consumer sales, but may help reach a segment of the population that values convenience over “buying local.” Smaller markets that already source local food need continued support in order to expand their selection of local products and reach out to new customers.

Local restaurants and markets should explore options for purchasing local products. Farmers interested in getting their products into local restaurants could collaborate to market their products and host events to strengthen connections with chefs and restaurateurs. Farm-to-table events are a great way to showcase local products and market them to restaurants and retail markets. A physical food hub or shared trucking service could also help farmers reach restaurants and other large buyers; see Chapter 4 for more information about food hubs.

Increase consumption of local food by tapping into institutional markets.

Farmers providing food for institutional food service face a different set of challenges than farmers selling products to retail markets or restaurants. Education and training for institutional food service directors is needed to help them navigate regulatory and logistical challenges related to procuring local food. Schools and institutions can also partner with the Massachusetts Farm to School Project and other organizations to increase local food procurement. Chapter 4 contains more information about what farmers and institutions can do to navigate the logistical challenges associated with the distribution and procurement of local food.

Resources:

- North Quabbin Community Coalition resources page: www.nqcc.org/resource.html
- Quabbin Harvest SNAP CSA: <http://quabbinharvest.coop/>
- North Quabbin Community Coalition Food Access Survey: www.nqcc.org/pdfs/food_access_survey_web.pdf
- Franklin County Farm and Food System Project: <http://frcog.org/franklin-county-farm-and-food-system-project-report-released/>

Chapter 6: Food Waste Recovery

Overview

Recovering food waste for use by people or animals is an important but often overlooked aspect of a sustainable food system. In 2010, the EPA estimated that each person generates about 225 pounds of food waste each year, meaning that over 3,000 tons of food waste are generated in our region alone! According to EPA estimates, nearly 14 percent of the residential waste stream is made up of food that could be rescued for consumption by people or animals, composting, biogas generation, or other purposes. When possible, recovering food waste to feed people and animals should be prioritized over composting or other means of disposal. A new state law took effect in October 2014 banning large commercial and institutional generators of food waste from disposing of organic waste in landfills, prompting increases in commercial and institutional food donation and composting programs and spurring the construction of anaerobic digestion facilities across the state.

In the six-town region of Athol, Barre, Hardwick, Orange, Petersham, and Warwick, household composting of food scraps is widely practiced, and several schools in our region compost food waste on-site or donate it to local pig farmers for animal feed. A major shortfall in our region is institutional and commercial composting; very few small businesses and non-school institutions (such as hospitals and other healthcare facilities) have taken advantage of available resources related to food waste recovery. Barriers to widespread composting include concerns about smell and appearance as well as the long distance some compost haulers would have to travel to make pickups in our region.



Rick Innes operates Clear View Composting in Orange, a small commercial composting operation with a big vision for the future of food waste in the north and east Quabbin region. Photo credit: Bradley Kennedy

Major findings

1. Home composting is widely practiced in the area, but more education and access to compost bins could increase the number of residents composting in our region.
2. There are several exemplary school composting and food waste diversion programs in our region that can serve as a model for other schools in the region and across the state.
3. More work is needed to implement food waste recovery programs in institutions across our region.
4. No regional gleaning program exists to provide food pantries and other hunger relief organizations with unharvested produce from local farms.

Chapter 6: Food Waste Recovery

Assets

Exemplary school food waste recovery programs

A great strength of the regional food system in the six towns of the north and east Quabbin is the variety of school composting and food waste recovery programs. One highly successful program that stands out as a regional model is the Quabbin Composting and Organic Gardening Program at Quabbin Regional High School in Barre. Food scraps from the school cafeteria are composted on-site in bins built by students and community volunteers; the resulting compost is used in the school garden to grow produce, which is returned to the cafeteria to be used in school lunches or is sold at the farmers market during the summer months. High school students play an important role in each step of this process, fulfilling the program's dual mission of education and sustainability.

Several other schools in our region also



Students at Quabbin Regional High School in Barre sell produce from the school garden at a summer farmers market. Photo credit: Hannah Traggis, Quabbin Composting and Organic Gardening Program

participate in food waste recovery programs, as shown on the map on the next page. Cafeteria scraps are composted on-site at Hardwick Elementary School; Warwick Community School and Hardwick Elementary also have small school gardens where the finished compost is used as fertilizer. In Athol and Orange, many schools donate food scraps to a local pig farmer as animal feed.

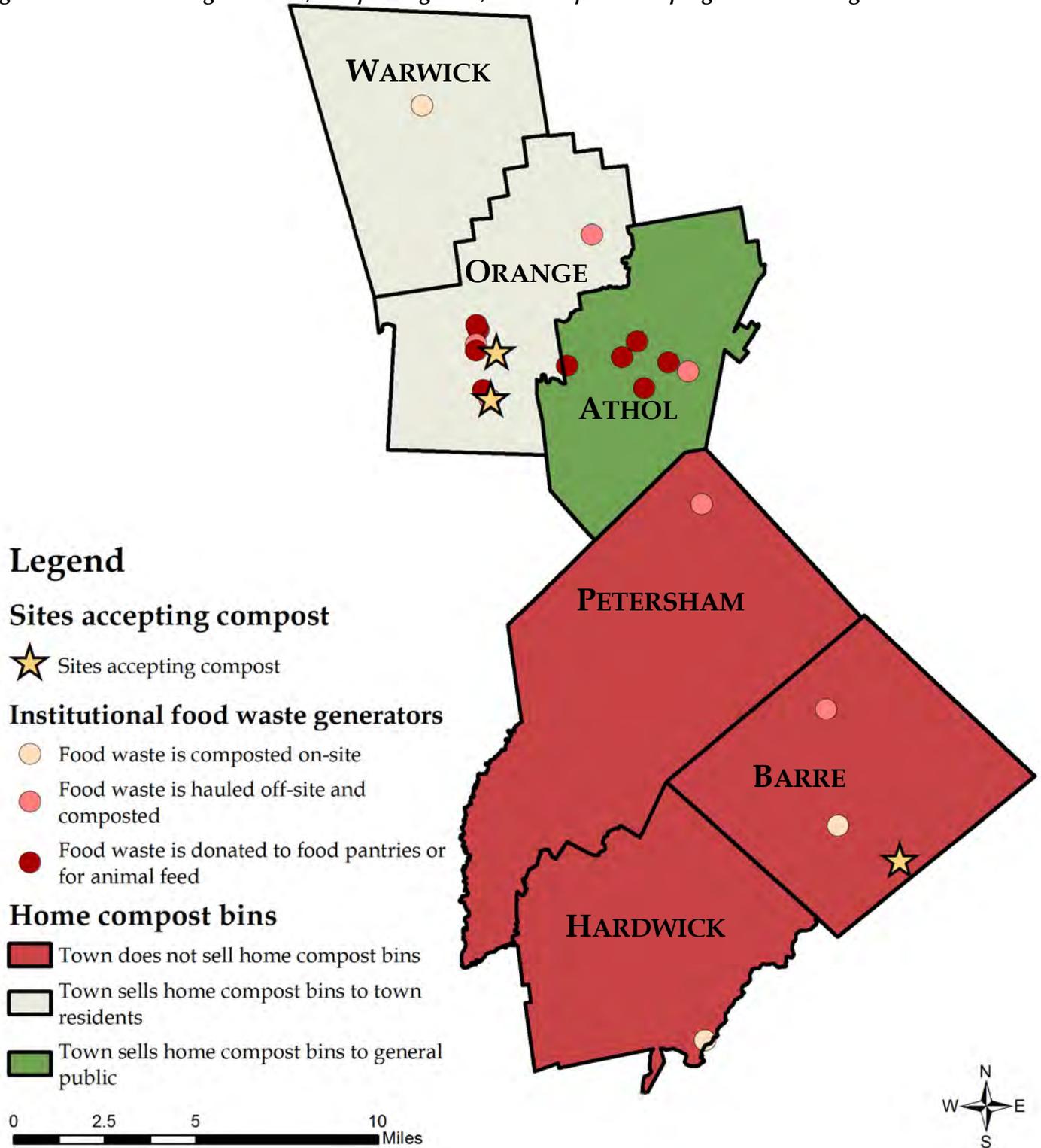
Several schools in our region compost food scraps on-site for use in the school garden or donate uneaten food to a local pig farmer as animal feed.

Widespread composting of household food scraps

Another area where our region shines is household composting; residential food waste is widely composted at transfer stations and in residents' backyards across the region. The Orange municipal transfer station accepts food waste from residents, and the Barre transfer station accepts organic waste such as leaves and yard waste, but not food scraps. As shown in Figure 6.1, residents of Warwick and Orange can also buy home composting bins at a discounted rate of \$45 at the Orange transfer station; Athol has a similar program and does not limit bin sales to town residents. Backyard composting may be more popular in our region than in other areas of the state because of the rural character of these six towns. Municipal pay-as-you-throw programs in all six towns except Hardwick also encourage composting and recycling as a way to save on the cost of bringing garbage to the transfer station.

Food waste in our region

Figure 6.1: Food waste generators, composting sites, and compost bins programs in our region



Sources: Community conversations; MassDEP information on active composting sites and compost bin distribution programs

One often-overlooked sector of food waste recovery is waste generated at events. As any resident of our region knows, Orange is home to one festival that leads the country in terms of diverting waste from the landfill: the North Quabbin Garlic and Arts Festival. The festival requires all vendors to use only compostable tableware and assigns volunteers to monitor every waste station to help attendees sort recycling and compost from trash; as a result, with 10,000 attendees annually, the festival generates only three bags of trash on average.

Wealth of regional resources for food waste recovery

There are a variety of regional and statewide resources available to towns, businesses, institutions, and residents interested in composting and other means of sustainable food waste recovery. The Franklin County Solid Waste Management District works with schools and towns in Franklin County to provide resources and assistance related to food waste as well as recycling and hazardous waste disposal. Mass Toss, also known as the North Central Regional Solid Waste Cooperative, provides similar services for Athol, Petersham, and several other



*The North Quabbin Garlic and Arts Festival attracts over 10,000 attendees annually but generates only three bags of trash; all other waste is composted or recycled.
Photo credit: garlicandarts.org*

towns in Worcester and Middlesex County.

The state Department of Environmental Protection (MassDEP) also helps communities apply for grants and start their own municipal food waste recovery programs. A major program funded by MassDEP in partnership with the Center for EcoTechnology is RecyclingWorks, which provides recycling and composting assistance for businesses and institutions. An important service provided by RecyclingWorks is connecting businesses and institutions with haulers to pick up their recycling and food waste; this is one facet of the food waste recovery sector where the north and east Quabbin region is lacking. The only food waste hauler in the six-town region is Clear View Composting in Orange, which is highlighted on the next page as an important regional asset but which currently has a limited capacity for picking up and composting commercial and institutional food waste.



*Household composting is widely practiced in our region. Residents can purchase bins from the town at a discount in Athol, Orange, and Warwick.
Photo credit: Earth Machine*

Barriers and opportunities

Commercial and institutional food waste recovery programs need work

Although the statewide ban on commercial food waste has been in effect for over a year, more support is needed for businesses and institutions in the region to comply with the ban. The law prohibits businesses and institutions that generate more than one ton of food waste per week from disposing of that food waste in

Highlight: Clear View Composting

Clear View Composting in Orange is the only commercial compost site in the six-town study area and is currently the smallest commercial composter in the state. With many haulers in the Pioneer Valley and Worcester County unwilling to pick up food waste in the relatively distant north and east Quabbin region, Clear View is a local operation that hauls food waste and other compostables from several schools, businesses, and institutions in our region and also accepts drop-offs of yard waste and food waste from residents. Food waste and compostable tableware from the annual North Quabbin Garlic and Arts Festival are also handled by Clear View Composting.

Two major composting methods are currently utilized at Clear View: the aerated bed method and the windrow method. In the aerated bed method, compostable materials including food waste, green yard waste, leaves, woodchips, coffee chaff from Dean's Beans Organic Coffee, and horse manure are piled into twenty wooden bins, which are aerated by a PVC pipe with holes in it installed under the bed. In the windrow method, compostable materials are piled into long rows on the ground, where they are turned by hand every four weeks. After a few months, the finished compost is screened, bagged, and sold to area residents and organizations.

Rick Innes, the sole proprietor of Clear View, has an ambitious vision for his business. He hopes to increase Clear View's capacity at least twelve-fold in the next several years, and notes that with his current permit, he could potentially accept 40 times as much food waste as he currently does. In recent years, Clear View has accepted an average of 25 tons of food waste and produced about 100 cubic yards of compost annually. Rick notes that many of the organizations he works with feel that they save money by partnering with Clear View; paying tipping fees for food and yard waste is often cheaper than paying a hauler to dispose of them as trash. Clear View also composts food waste dropped off by Orange residents at the transfer station. Clear View Composting is an important asset for the community and for the regional food system.



Rick Innes poses with a bucket of coffee chaff from Dean's Beans at Clear View Composting.

Photo credit: Kathleen Doherty

landfills or incinerators; in the six-town study area, only a few businesses and institutions are affected by the ban. As mentioned previously, many public schools in our region are ahead of the curve in terms of their food waste recovery programs. Many restaurants in this area are too small to be affected by the law; this leaves supermarkets and large institutions, such as Athol Memorial Hospital, as the largest generators of food waste in the six-town study area.

The three major supermarkets servicing the north and east Quabbin region are Hannaford in

Orange, Market Basket in Athol, and Wal-Mart in Orange. Both Hannaford and Market Basket send what unsaleable produce they can to local food pantries; anything not fit for consumption is sent by Hannaford to a local pig farmer as animal feed and by Market Basket to a regional composting service. MassDEP has a program called Supermarket Recycling Program Certification (SRPC), which encourages supermarkets to donate, recycle, or compost unsaleable produce, paper, cardboard, and plastic. It is a voluntary program that offers regulatory relief for supermarkets that have a comprehensive reuse and recycling program in place. Hannaford and Market Basket are both

SRPC certified for all stores across the state; Wal-Mart has a few stores that are certified, but the Orange location is not one of them.

Apart from the supermarkets, more information is needed about food waste recovery programs at businesses and non-school institutions. To date, no non-school institutions in the six-town region have partnered with MassDEP's RecyclingWorks program to start food recovery programs. This doesn't mean that programs don't exist, but it might mean that resources that could improve food waste recovery programs are being underutilized.

Dearth of food waste hauling services

A major challenge that may affect the ability of businesses and institutions to implement food waste recovery programs is a dearth of food waste hauling services in the north and east Quabbin region. As Emily Fabel from the Center for EcoTechnology, which operates RecyclingWorks, notes, food waste recovery is encountering the same challenge experienced by the movement to recycle paper and plastic thirty years ago: businesses and institutions are interested in composting, but there has been a lag time with food waste hauling services. Although there are several haulers as close as Greenfield and Worcester, most are unwilling to send a truck to the relatively distant north and east Quabbin region for a single pick-up. It may be

Food waste recovery is encountering the same challenge experienced by the movement to recycle paper and plastic thirty years ago: businesses and institutions are interested in composting, but there has been a lag time with food waste hauling services.

that haulers would be enticed to make the trip if there were a critical mass of participating businesses and institutions requesting food waste pick-up; or it may be that the best solution is to invest in local haulers like Clear View Composting.

Opportunities for gleaning

Gleaning is the act of harvesting excess produce from farm fields during the growing season for the purpose of donating it to hunger relief organizations. There is currently no program like this in our region. More information is needed about the current needs of hunger relief organizations in the area, the capacity of food pantries and food banks to accept and distribute more fresh produce, and whether farmers in our region have enough unharvested produce at the end of the season to sustain a regional gleaning program.



*Volunteers with Boston Area Gleaners show off freshly harvested radishes that will be donated to hunger relief organizations in the Boston area. In 2015 Boston Area Gleaners harvested and donated over 350,000 pounds of produce from 50 farms in eastern Massachusetts.
Photo credit: Boston Area Gleaners*

Recommendations

Programs to encourage household composting of food waste could be expanded.

Currently, Orange is the only town in the six-town study area that accepts food waste at the municipal transfer station. Towns can set up a place at the transfer station where residents can drop off food waste as well as leaves and other compostables. If the volume is small enough, these items can be left to compost on-site; for example, a town like Barre that already accepts leaves and yard waste could add food waste to the leaf pile to compost on-site. For larger volumes, the town could partner with a hauler to bring compostables to Clear View Composting or another site.

Towns can also take advantage of regional and state resources to expand household composting programs. By becoming members of Mass Toss, Hardwick and Barre could participate in a program to offer household compost bins to residents at reduced rates. Petersham is a member of Mass Toss but does not offer compost bins to its residents; this is a low-hanging fruit that could help residents learn more about composting and increase household composting in the town.

Schools can engage students, teachers, and parents in food waste programs through the Green Team program, the Franklin County Solid Waste Management District, or another program to accomplish a dual goal of food waste diversion and environmental education.

Although many schools in our region have

strong food waste recovery programs, there are additional regional and state resources that are available to schools interested in starting or strengthening their own food waste programs. The Green Team is a statewide program sponsored by MassDEP that provides schools with free recycling and composting bins as well as technical assistance for starting a composting program. Schools in Petersham and Hardwick can take advantage of this program to start their own food waste recovery programs. The Franklin County Solid Waste Management District also provides compost bins and technical assistance to schools in its member communities in Franklin County.

Institutional food waste generators could partner with Recycling Works to handle their recyclables and compostables.

Non-school institutions such as the Athol Hospital and Quabbin Valley Health Care could consider reaching out to Recycling Works to find a hauler for their food scraps and compostables.



Compost bins at Quabbin Regional High School in Barre were built by students and community volunteers to accept food waste from the school cafeteria.

Photo credit: Hannah Traggis

If possible, these institutions could work with smaller commercial food waste generators, such as local restaurants or the businesses in the Orange Innovation Center, to employ group buying power to entice haulers that otherwise might be reluctant to do pick-ups in this region. More research needs to be done about the haulers used by Market Basket and Wal-Mart and whether those companies could also serve other businesses and institutions in our region.

Hunger relief organizations could collaborate with farmers and other stakeholders to investigate the feasibility of a regional gleaning program to collect and donate unharvested produce from farm fields.

Gleaning programs such as Rachel's Table in Springfield and Boston Area Gleaners employ volunteers to collect unharvested produce from farm fields and donate it to feed hungry people. A successful gleaning program in the north and east Quabbin region could have a dual effect of reducing food waste and improving health and food security in the region. More research should be done into the amount of produce potentially available, the capacity for local hunger relief organizations to accept and distribute large donations of fresh produce, and potential funding sources to assist in the creation of a position for a regional gleaning coordinator. Local farmers should be part of this conversation to assess their needs and whether they have enough unharvested produce at the end of the season to sustain a successful gleaning program.

Resources:

- Franklin County Solid Waste Management District: www.franklincountywastedistrict.org
- Mass Toss: www.masstoss.com
- RecyclingWorks: www.recyclingworksma.com
- MassDEP Green Team: <http://thegreenteam.org/>

Chapter 7: Recommendations

Overview

This community food system assessment has brought together dozens of community members to identify assets in our community as well as barriers to a stronger regional food system. This section takes the recommendations from each chapter and organizes them into a table by food system sector. Each recommendation is broken down into proposed actions that we all can take to address what's happening in our food system.

In order to help strengthen our food system and our communities, *all* voices need to be heard. Residents, landowners, towns, community organizations, conservation groups, and community members all have a role to play. In this section, each recommendation is associated with one or more “stakeholder groups” that could take action most effectively on the proposed action items.



A diverse group of residents of our region came together for a meeting of the Greater Quabbin Food Alliance in December 2015. The Food Alliance is a network of farmers, consumers, planners, conservationists, health care professionals, and other food system champions in the greater Quabbin region. Photo credit: Jamie Pottern

These recommendations do not exist in a vacuum, but are informed by and relate to the vision laid out in the New England Food Vision as well as the Massachusetts Food System Plan. Relevant action items from the state Food System Plan are identified and linked to recommendations from this food system assessment; the full text of these actions can be found in Appendix D.



Graphic from Food Well Alliance, <http://www.foodwellalliance.org/>

Production

<i>Major findings</i>	<i>Recommendations</i>	<i>Stakeholder groups</i>	<i>Proposed actions</i>	<i>Related actions from MA Food System Plan</i>
There is potential for increased food and fodder production in our region.	Connect farmers with resources for business, financial, and marketing support and foster connections to untapped markets.	Towns; Businesses; Institutions; Community groups; Farmers	Help farmers access resources for business planning, product development, and marketing.	Farming: Recommendation 3.1, Recommendation 3.2
			Foster connections between farmers and institutions, restaurants, and retail markets.	Distribution: Action 7.3.2, Action 7.3.3
	Consider restoring former crop fields and pasture, where appropriate.	Farmers; Towns; Community groups	Work with landowners and towns to identify local priorities and clear trees selectively to increase production.	
Farmland access is a challenge for both beginning farmers and established farmers interested in expanding their production.	Support farmland owners with transition planning and connect the next generation of farmers with “exiting” farmers or non-farming landowners.	Towns; Conservation organizations	Host workshops on transition planning and conservation options for landowners.	Land: Action 3.9.2
		Community organizations; Conservation organizations	Work together to create an online “portal” to centralize existing web-based resources for farmland access.	Land: Action 3.14.1
		Towns; Institutions	Consider leasing underutilized land to beginning farmers.	Land: Action 3.12.1, Action 3.12.2

Production

<i>Major findings</i>	<i>Recommendations</i>	<i>Stakeholder groups</i>	<i>Proposed actions</i>	<i>Related actions from MA Food System Plan</i>
The farmland that exists in our region is threatened by development.	Conserve the most important and threatened farms in our region.	Towns; Conservation organizations; Farmers	Identify priority farms for conservation and take steps to protect the most important farms first.	Land: Recommendation 2.3
		Towns; Community organizations	Support farmers by establishing an agricultural commission and passing a Right-to-Farm bylaw, and increase capacity for conservation by adopting the Community Preservation Act.	Land: Action 2.3.9

Processing

<i>Major findings</i>	<i>Recommendations</i>	<i>Stakeholder groups</i>	<i>Proposed actions</i>	<i>Related actions from MA Food System Plan</i>
There is already a diversity of value-added products in our region, especially dairy and meat.	Small-scale community kitchens could be utilized by farmers for small batches of value-added products.	Farmers; Businesses	Utilize church kitchens, senior centers, and other community kitchens to get started with value-added products.	Processing: Action 3.5.1
Many farms face issues of scale related to processing.			Use Food Processing Center as a resource for larger-scale production of value-added products.	
Opportunities exist for farmers to share equipment and storage.	A farmer cooperative or trade association could facilitate sharing of equipment and storage facilities.	Farmers	Collaborate on initiatives like a shared trucking service, construction of shared storage facilities, collective purchasing of processing equipment, and agreements to share equipment.	Processing: Action 3.4.4
There is currently no need for a new slaughter facility, but secondary meat processing is in demand.	A new small-scale secondary meat processing facility could add to the diversity of meat products in our region.	Businesses; Community organizations	Work with farmers to assess the need for a new post-slaughter processing facility and what services are most needed.	

Distribution

<i>Major findings</i>	<i>Recommendations</i>	<i>Stakeholder groups</i>	<i>Proposed actions</i>	<i>Related actions from MA Food System Plan</i>
Many farms in our region sell direct to consumers through farm stands, farmers markets, or CSAs.	“Buy Local” campaigns can help farmers promote their products to local customers and get technical assistance with advertising and finding new markets.	Farmers; Businesses	Work with CISA, CMRPC, or other organizations to participate in a “Buy Local” branding campaign.	Distribution: Recommendation 2.1
		Community organizations; Farmers; Businesses	Work with “Buy Local” programs to host additional events with a focus on the north and east Quabbin region.	Distribution: Recommendation 2.1
Several outlets exist for farmers interested in selling food to local markets, but there are logistical challenges.	A shared trucking service or physical food hub could simplify distribution challenges for both farmers and small retail markets.	Community organizations; Businesses	Support efforts to launch the Worcester Regional Food Hub.	Distribution: Recommendation 3.2
		Farmers; Community organizations; Businesses	Work with farmers to assess the need for a small-scale food hub or trucking service specific to the north and east Quabbin region.	Distribution: Recommendation 3.2
There is a need for stronger connections between farms and institutions interested in sourcing local food.	Strengthen connections between farmers and institutional buyers and help institutions navigate regulatory and logistical challenges.	Farmers; Institutions; Community organizations	Work together to produce a “package” of local food to market to institutional buyers.	

Consumption

<i>Major findings</i>	<i>Recommendations</i>	<i>Stakeholder groups</i>	<i>Proposed actions</i>	<i>Related actions from MA Food System Plan</i>
<p>There is some interest in local food among area residents, but price and convenience pose major barriers. Access to healthy, local food is a challenge for our region’s most vulnerable residents.</p>	<p>Support access to local food and cooking education for all people, especially low-income residents, children, and the elderly.</p>	<p>Community organizations; Businesses; Farmers</p>	<p>Support and advertise programs to make local food more affordable.</p>	<p>Food Access, Security and Health: Action 3.1.3, Action 3.1.6</p>
			<p>Provide education about scratch cooking to empower people to consume more local produce and improve health.</p>	
			<p>Increase capacity for distributing and storing local, fresh produce in food pantries.</p>	
<p>Some options exist for purchasing local food in our region, but overall non-local options like fast food restaurants and convenience stores dominate our region.</p>	<p>Increase marketing and branding of local farms and establishments that sell or utilize local products.</p>	<p>Farmers</p>	<p>Work with CISA, CMRPC, or other organization to participate in a “Buy Local” branding campaign.</p>	<p>Distribution: Recommendation 2.1</p>
		<p>Community organizations; Towns</p>	<p>Celebrate businesses that sell or utilize local products with special promotions or campaigns.</p>	<p>Marketing: Recommendation 1.2</p>
		<p>Businesses</p>	<p>Explore opportunities to increase local food procurement and advertise local food on restaurant menus and at retail markets.</p>	

Consumption

<i>Major findings</i>	<i>Recommendations</i>	<i>Stakeholder groups</i>	<i>Proposed actions</i>	<i>Related actions from MA Food System Plan</i>
There are untapped markets for local food in our region, including schools, institutions, restaurants, and food pantries.	Improve connections between local farms and small retail markets, restaurants, and other outlets and support smaller markets that source local food.	Farmers; Businesses	Collaborate to market products to restaurants and markets, host events to showcase local products, etc.	
		Farmers; Community organizations; Businesses	Create a physical food hub or shared trucking service to aggregate produce and connect farms to restaurants and markets.	Distribution: Recommendation 3.2
	Increase consumption of local food by tapping into institutional markets.	Institutions; Community organizations	Provide training to institutional food service directors about local food procurement.	Distribution: Action 7.3.2, Action 7.3.3
		Institutions; Farmers	Partner with MA Farm to School Project or other organization for resources and technical assistance.	

Food Waste Recovery

<i>Major findings</i>	<i>Recommendations</i>	<i>Stakeholder groups</i>	<i>Proposed actions</i>	<i>Related actions from MA Food System Plan</i>
Home composting is widely practiced in the area, but more education and access to compost bins could increase the number of residents composting.	Programs to encourage household composting of food waste could be expanded.	Towns	Accept food waste at municipal transfer stations.	Inputs: Action 1.1.2
			Partner with Mass Toss or FCSWMD to provide compost bins and improve education for residents.	Inputs: Action 1.5.9
There are several exemplary school composting and food waste diversion programs in our region that can serve as a model for other schools.	Schools can engage students, teachers, and parents in food waste programs to accomplish a dual goal of food waste diversion and environmental education.	Institutions	Partner with Green Team, Mass Toss, or FCSWMD to get resources and technical assistance for starting or expanding school food waste recovery programs.	
More work is needed to implement food waste recovery in institutions across our region.	Institutional food waste generators could partner with RecyclingWorks to handle their recyclables and compostables.	Institutions; Community organizations	Reach out to RecyclingWorks for resources to start institutional composting programs and explore options for hauling food waste off-site.	Inputs: Action 1.1.1
			Partner with grocery stores, restaurants, and small businesses to attract haulers with a 'critical mass' of food waste.	

Food Waste Recovery

<i>Major findings</i>	<i>Recommendations</i>	<i>Stakeholder groups</i>	<i>Proposed actions</i>	<i>Related actions from MA Food System Plan</i>
No gleaning program exists in our region to provide food pantries and other hunger relief organizations with unharvested produce from local	Investigate the feasibility of starting a regional gleaning program.	Community organizations	Work with farmers and hunger relief organizations to assess their needs and evaluate whether a gleaning program could be viable.	Inputs: Action 1.3.7

Chapter 8: Conclusion

Overview

The north and east Quabbin region has a rich history of food and farming and will have a critical role to play in strengthening the larger regional food system in the future. In terms of the five major sectors of the food system – production, processing, distribution, consumption, and waste – the six towns of Athol, Barre, Hardwick, Orange, Petersham, and Warwick are home to many assets and opportunities for local food but also face some challenges.

Food system opportunities and challenges

Our region has enormous potential to increase production and consumption of local food. Farms in our region provide hay, dairy, eggs, meat products, and fruits and vegetables, but could produce even more than they already do. Eighty-four percent of prime and statewide important farmland soils in our region are not being used for crop production or pasture, indicating that our region could sustain a significant increase in food production if former farm fields were restored to cultivation.

According to the New England Food Vision, in order to produce 50 percent of New England's food locally by the year 2060, the amount of farmland in the state will have to almost quadruple in the next 50 years. Towns and conservation organizations must work together to protect the farmland we already have by identifying conservation priorities and working with landowners to permanently protect the most important farms in our region. Addressing issues of farmland access and transition planning will also be essential in order to ensure the next generation of farmers will have access to land.

In terms of food processing and storage, infrastructure exists for farmers and entrepreneurs interested in processing local food into value-added products. Small commercial kitchens like church kitchens can be a good starting point for small food businesses; the Food Processing Center in Greenfield is also a great resource for slightly larger food businesses just getting started. Although many farmers already produce meat products, a new small-scale secondary meat processing facility in the area could increase the diversity of meat products being produced in our region.

Distribution and consumption of local food present a challenge in our region due to our relatively remote location and barriers related to price and convenience when it comes to buying food. However, opportunities exist to improve access to local food in

our region and across the state. Farmers can work together on a shared trucking service or food hub to get local food into more stores and restaurants across our region, and “Buy Local” campaigns like Central Mass Grown can help farmers improve marketing of local food. Supporting programs like Quabbin Harvest’s SNAP CSA that make local food more affordable and increasing local food procurement in schools and institutions will also be essential to help the region’s most vulnerable population get access to healthy, local food.

Finally, food waste is an important part of our regional food system and can be a resource rather than a challenge. Our region is already home to several shining examples of school food waste recovery programs, especially the Quabbin Composting and Organic Gardening Program in Barre. Household composting is also widely practiced, but towns can encourage more residents to start composting by offering bins at discounted rates. Programs like RecyclingWorks and commercial composters like Clear View Composting can be important resources for institutional food waste recovery programs.

A vision for the future

With a combination of reinvestment in our communities, infrastructure changes, land use planning, support from town and state governments, and collaboration among farmers, community organizations, and other stakeholders, our region can be empowered to increase both production and consumption of local food. Together we can build a resilient food system and realize a vision for the north and east Quabbin region where everyone has access to fresh, local food, where farming is a viable and robust industry, and where land and other natural resources are conserved for future generations of farmers, processors, distributors, cooks, composters, and eaters to enjoy.



Farmer John Moore teaches granddaughter Sienna to operate the tractor.

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Appendices

Appendix A: List of community interviews

List of community members interviewed for this project, as well as community members interviewed for the Mount Grace farmland inventory project

Appendix B: Methodology

Contains more information about FRCOG and CMRPC farmer surveys and Mount Grace farmland inventory

Appendix C: Mount Grace farmland conservation prioritization criteria and rationale

A spreadsheet showing the criteria used by Mount Grace Land Conservation Trust to rank farms in the six-town region in terms of their conservation priority, along with rationale for those criteria.

Appendix D: Related actions from the Massachusetts Food System Plan

A list of relevant actions from the Massachusetts Food System Plan published in 2015. These actions are directly related to recommendations from this plan as listed in Chapter 7.

Appendix A: List of community interviews

Community Interviews

Thank you to the following community members for lending their insight and perspective to this project:

Nancy Allen, Mount Grace Land Conservation Trust
Ellen Anderson, Petersham Grange
Sheri Bean, Montachusett Regional Planning Commission
Gail Beauregard, Copper Angel restaurant
Heather Bialecki-Canning, North Quabbin Community Coalition
Amy Borezo, Quabbin Harvest co-op
Larry Buell, Earthlands
Rich Cavanaugh, Common Grow
Mary Chicoine, Franklin Regional Council of Governments
Lucinda Childs, East Quabbin Land Trust
Theresa Cofske, Town of Hardwick
Irene Congdon, Mass Department of Environmental Protection
Jeff Cooper, Hannaford
Andrea Crete, Town of Orange Board of Health
Amy Donovan, Franklin County Solid Waste Management District
Emily Fabel, Center for Ecotechnology
Ben and Susie Feldman, Mount Grace Land Conservation Trust
Jerry Friedman, Petersham resident
Rachel Gonzalez, Rachel's Everlastings
Deb Habib, Seeds of Solidarity Education Center
Judy Hall, Wendell Community Kitchen
Felicia Harris, Massachusetts Food Protection Program
Mimi Helen-Jones, Mount Grace Land Conservation Trust
Cynthia Henshaw, East Quabbin Land Trust
Mick Huppert, Town of Petersham Open Space Committee
Rick Innes, Clear View Composting
Deborah Karen, Town of Athol Board of Health
Phil Leger, Town of Barre Health Agent
Nico Lustig, Franklin County Community Development Corporation
Nancy Lyman, Town of Warwick Board of Health
Andrea Mastrototero, Town of Barre Board of Health
Derrick Mathieu, Central Massachusetts Regional Planning Commission
Brian Monteverd, Worcester Regional Environmental Council
Dan Moore, Maple Grove Farm
John Moore, Maple Grove Farm
Tyson Neukirch, The Farm School

Lynne Pledger, Valley Zero Waste
Ari Pugliese, The Country Store in Petersham
Rob Sacco, Soup on the Fly restaurant
Rachel Scherer, Little White Goat Dairy
Trish Settles, Central Massachusetts Regional Planning Commission
Ridge Shinn, Ridge's Beef with No Regrets
Dave Small, Town of Athol Planning Board
Tricia Smith, Robinson Farm
Cathy Stanton, Tufts University
Dan Stevens, Carter and Stevens Farm
Kate Stillman, Stillman Quality Meats
Lynn Stromberg, Lettuce Be Local
Nora Weaver, Town of Athol Agricultural Commission
Sarah Wells, Mount Grace Land Conservation Trust
Helen Whipple, Town of Warwick Board of Health
Renee Wingertsman, Town of Petersham Board of Health
Mae Zagami, Massachusetts Local Food Cooperative

Farmland inventory interviews

Interviews conducted by Bradley Kennedy, MassLIFT 2014-2015, for the Mount Grace farmland inventory project:

Lucinda Childs, East Quabbin Land Trust
Ben Feldman, Mount Grace Land Conservation Trust
Mark Fellows, Chase Hill Farm
Ben Holmes, The Farm School
Mick Huppert, Town of Petersham Open Space Committee
David Lockesmith, Landworks Farm
John Moore, Maple Grove Farm
Jeff Perkins, Perkins Farm
David Petrovick, Caledonia Farm
Warren Rice, Creamery Hill Farm
Ginny and Don Rich, East Quabbin Land Trust
Jean Robinson, Town of Athol Assessor's Office
Ridge Shinn, Ridge's Beef with No Regrets
Eric Vollheim, East Quabbin Land Trust
Kurt and Chad Wells, Wellwood Farm
Mary Williamson, Town of Warwick Open Space Committee

Appendix B: Methodology

Research for this report was performed using a mixed-methods strategy involving community conversations, spatial analysis, and analysis of qualitative and quantitative data from various sources. For a full list of interviewees, see Appendix A; for a list of other resources and references, see the References page.

Conversations with community members were an important source of information for all sections of this report. Over 60 community members from all six towns and across the region were interviewed one-on-one over the course of a year, and at least 150 more were engaged at two public presentations in December 2015. One presentation was part of the December 8th meeting of the Greater Quabbin Food Alliance; the other was part of a gallery opening and panel discussion as part of the Farm Values project, a collaboration between humanities scholar Cathy Stanton and Mount Grace Land Conservation Trust. Feedback given by community members at these events, as well as feedback solicited from key stakeholders throughout the research process, has been incorporated into the final report.

A farmland inventory conducted by Mount Grace Land Conservation Trust forms another important piece of the research for this project. Using a combination of GIS (Geographic Information System) mapping and conversations with community members, 2014-2015 MassLIFT-AmeriCorps member Bradley Kennedy produced maps of the six towns containing detailed information about the location and size of farm parcels, trends in farmland ownership and access, patterns of land protection, and different types of production methods. The results of this analysis are presented in part in Chapter 2 of this report.

In addition to community conversations and the Mount Grace farmland inventory, research for this report was done using a variety of methods. Data sources included factsheets and maps from the Massachusetts Department of Agricultural Resources (MDAR), the Department of Environmental Protection (DEP), and other state agencies; publications from Community Involved in Sustaining Agriculture (CISA), Franklin Regional Council of Governments (FRCOG), and other non-profit and quasi-public agencies; data from local Boards of Health as well as the Massachusetts Food Protection Program; spatial data from MassGIS; and many other sources. One particularly important data source was a set of surveys conducted by the Franklin Regional Council of Governments (FRCOG) and the Central Massachusetts Regional Planning Commission (CMRPC) in 2013 and 2014 respectively; more detail on these surveys can be found below.

Farmer Survey spotlight

Certain sections of this report rely heavily on data from two farmer surveys conducted in the past two years. The first was conducted by the Franklin Regional Council of Governments (FRCOG) in

2013. Over 100 farmers in Franklin County were surveyed about what resources and services they need in order to scale up their production; the results were published in 2015 as part of a report called the Franklin County Farm and Food System Project. A second survey was conducted in 2014 by the Central Massachusetts Regional Planning Commission (CMRPC). This survey was conducted as a follow-up to CMRPC’s Rural-11 Prioritization Project and was meant to mirror the Franklin County survey. The CMRPC survey focused on towns in Worcester County. More information about these surveys can be found in the References section of this report.

In this report, data from both surveys were pulled out and analyzed together. 21 farms from 5 of the 6 towns in the north and east Quabbin region are represented (no data were available for Athol). This is a small sample size, considering there are approximately 600 farms in the region total; however, it is the best data currently available at such a fine scale. Below is a breakdown of survey respondents by town.

Survey	Town	Number of farms represented
CMRPC	Barre	4
CMRPC	Hardwick	3
FRCOG	Orange	9
FRCOG	Warwick	4
FRCOG	Petersham	1
Total		21

Appendix C: Mount Grace farmland conservation prioritization criteria and rationale

Criteria for Farm Conservation Priority Ranking							
Criteria	Description	Basis for Rank Number:					Rationale
		1	2	3	4	5	
Acres	Total acreage of parcel	1-10 acres	11-50 acres	51-100 acres	101-200 acres	200+ acres	Larger farms should be prioritized in order to conserve more acres of farmland at once and improve regional food security.
Prime Soil - Total	Percent of total acreage covered by prime ag soil	1-20%	21-40%	41-60%	61-80%	81-100%	The presence of prime soil is an indicator of the land's potential capacity for food production, regardless of current land use.
Prime Soil - Fields	Percent of open fields covered by prime ag soil	1-20%	21-40%	41-60%	61-80%	81-100%	Farms whose prime soil is not covered by buildings or forest should be prioritized for conservation.
Development Threat	Likelihood land will be lost for commercial agricultural use, based on availability for development, ownership status, relationship to excluded parcels, rental/lease security and other specific factors	Threat is very low or non-existent	Threat is low	Threat is somewhat serious	Threat is high	Threat is imminent	Once farm fields are converted to building lots, their potential utility for food production is effectively destroyed forever. Farms that are imminently threatened by development should be prioritized for conservation.
Infrastructure	Presence of farmhouses, barns, and other buildings.	No infra. present	Minimal infra. in poor condition	Some infra. present, but condition is poor	Sufficient infra. for future farm operations	Infra. in good condition and more than sufficient for farm operations	Beginning farmers especially need infrastructure, including a farmhouse, to get their farm business started. Farms with at least one farmhouse and a sufficient number of barns and other farm structures in good condition should be prioritized for conservation.
Proximity to Protected Land	Distance from farm parcel to permanently protected land	>10 miles	>5 miles	>2 miles	>1/4 mile	Abutting	Clustering protected land promotes wildlife movement and landscape connectivity. Farms that abut other protected land should be prioritized for conservation.

Appendix C: Mount Grace farmland conservation prioritization criteria and rationale (continued)

Criteria for Farm Conservation Priority Ranking							
Criteria	Description	Basis for Rank Number:					Rationale
		1	2	3	4	5	
Historical/ Community Significance	A qualitative measure of the value placed on the farm by the community that accounts for the length of the farm's history and community connections to the land	Not at all significant	Not very significant	Somewhat significant	Very significant	Extremely significant	Community buy-in is an important piece of any conservation project. Farms that are significant to the community for historic or other reasons should be prioritized for conservation.
Scenic Value	The farm's aesthetic value as understood by community members	Not scenic or not visible	Not very scenic	Somewhat scenic	Scenic	Iconic	Certain farms are likely to be recognized by community members as iconic landmarks that tie them to the history of their town. These farms should be protected from development in order to preserve community identity.
Economic Significance	How much income the landowner makes from farming, and how much of that income comes from local sales	Minimal	-	Average	-	High	Farming can form an important facet of the regional economy. Farms that contribute significantly to the health of the local and regional economy should be prioritized for conservation.
Product	The types of products produced on the farm	Hay; eggs; forest products (1 point each)	Vegetables; meat; dairy; value-added products; orchard (2 points each)	Any combo. of products adding up to 3 points	Any combo. of products adding up to 4 points	Any combo. of products adding up to 5 points	Farms that produce a diversity of products that directly feed people should be prioritized for conservation.
Other	Other considerations that may affect the importance of a farm or farm cluster for development	-	-	-	-	-	The criteria listed above may not capture the whole picture for every farm; this category allows managers and community members to identify farms that wouldn't traditionally be prioritized for conservation but that have value in other respects.

Appendix D: Related actions from the Massachusetts Food System Plan

Land

Recommendation 2.3: Minimize municipal regulations that hinder farm viability.

Action 2.3.9: Provide technical assistance to town community preservation committees, agricultural commissions, and land trusts about how CPA funds can be used to support farmland protection, as well as affordable housing associated with farmland.

Recommendation 3.2: Encourage use of suitable publicly-owned land for farming.

Action 3.9.2: Expand farm succession planning services for farmers. Consider models such as UMass' *Your Forest, Your Legacy* program, Land for Good and various programs the U.S. Forest Service is doing with forestland owners.

Action 3.10.1: Enact a farmland restoration program similar to Connecticut's Department of Agriculture's Farmland Restoration Program, which cost shares with farmers on land management and conservation practices aimed at bringing former farmland back into food production. Consider including in the program projects that would also benefit pollinators and other rare species that thrive on agricultural land.

Action 3.12.1: Provide technical assistance to agriculture commissions and, where no agricultural commissions exist, municipal land managers and relevant town committees to inventory municipally-owned land and assess its suitability for agriculture.

Action 3.12.2: Educate land trusts, agriculture and conservation commissions, and municipal land managers on farm-friendly lease arrangements, and provide technical assistance to these entities to assist with implementation of farm leases.

Action 3.14.1: Integrate and expand existing NGO farm-linking databases, so farmland owners and seekers in all parts of the State, including urban areas, can more readily find each other. Provide State support for these databases. Educate farmland owners and agricultural commissions about these databases.

Inputs

Action 1.1.1: Promote and leverage the MassDEP technical assistance service, RecyclingWorks, to help food waste generators comply with the waste ban.

Action 1.1.2: Provide technical assistance to municipalities to introduce their own voluntary programs for residential food waste disposal or food waste from institutions disposal below the one ton/week level.

Action 1.3.7: Create a communication network so that farmers can connect with volunteers willing to harvest and distribute a crop in an overly abundant year.

Action 1.5.9: Provide more education and technical assistance to homeowners and landscapers for proper methods of composting and proper disposal of yard waste through local boards of health, energy committees or other municipal groups.

Farming

Recommendation 3.1: Strengthen governmental support systems for agriculture.

Recommendation 3.2: Support the development of private sector financial and business support for farms.

Processing

Action 3.4.4: Develop models for cooperative use of food processing equipment by farmers, fishermen, specialty food producers, and other food processors.

Action 3.5.1: Inventory food processing facilities in Massachusetts, and use the inventory to create a map that identifies facility age, condition, state of use, state of business growth, available capacity, and need for upgrades, and need for new facilities.

Distribution

Recommendation 2.1: Foster relationships between producers, distributors, wholesalers, and retailers that facilitate and prioritize sale and purchase of Massachusetts-grown and -produced products.

Recommendation 3.2: Foster networks and relationships to support innovative food distribution models.

Action 7.3.2: Fund and offer training programs to educate institutional purchasers on local food procurement, from food purchasing to preparation.

Action 7.3.3: Work with institutions on navigating challenges related to changing food procurement practices.

Marketing

Recommendation 1.2: Implement stronger Massachusetts and local branding in the food supply

chain.

Food Access, Security, and Health

Action 3.1.3: Identify method for expanding healthy food purchasing incentives to all SNAP retailers statewide including grocery stores, corner stores, and bodegas.

Action 3.1.6: Provide capacity and technical assistance to farmers markets to accept WIC and senior FMNP.