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*December 4, 2015*
Plan Summary

Food is much more than what we eat. In Massachusetts, our food system employs approximately 426,000 people (about one of every ten workers residing in the State) and accounts for 4.5 percent of all economic activity. This remarkable system raises food from farms and fisheries, delivers it to our tables, and recycles the waste. It involves land stewardship, resource conservation, hunger relief, and public health. Food is also about culture and celebration. It’s part of our identity.

In Massachusetts, our local food system is already strong. Among New England states, we have the greatest number of food consumers. Our soil is among the most fertile the world, and our fisheries are strong. During recent years, the growing interest of Massachusetts consumers in “buying local” reflects their desire to eat more nutritious food, support the local economy, and sustain the environment. Indeed, in 2012 the number of farms and food businesses in our State was 41,341, and we now rank first in the U.S. for the percentage of farms using “community supported agriculture,” or CSA. (In this plan, “local food” is considered to be that which is produced and sold within the State.)

And we have opportunities to do better. Farms and food businesses face many barriers to expansion and viability. Many food system jobs have low wages, long hours, and no benefits. Access to fresh and healthy food is difficult for many people, as urban “food deserts” have up to 40 percent fewer grocery stores per capita than the national average. Food insecurity, a measure of hunger, has doubled since 2000 and now affects one in nine residents. Dedicated social service agencies and organizations provide essential assistance, but underlying issues of poverty and poor nutrition remain.

In this context, the Massachusetts Food Policy Council in 2013 launched a statewide planning process to address the opportunities and challenges of our State’s local food system. The Council established four general goals for the plan:

- Increase production, sales, and consumption of Massachusetts-grown foods.
- Create jobs and economic opportunity in food and farming, and improve the wages and skills of food system workers.
- Protect the land and water needed to produce food, maximize environmental benefits from agriculture and fishing, and ensure food safety.
- Reduce hunger and food insecurity, increase the availability of healthy food to all residents, and reduce food waste.
The Council engaged a planning team that facilitated broad statewide participation to develop the plan throughout 2014 and 2015. More than 1,500 people, many of whom represented food system organizations, businesses, and agencies, participated directly, at public forums around the State, in topic-specific working groups, and in a range of other ways.

Hundreds of specific actions were recommended, and have been organized to create this plan. While this body of actions touches on nearly every aspect of the food system, three general themes have emerged:

- More informational and educational resources are needed to improve the growth potential of farm businesses, consumers, and food system workers.
- The regulatory environment at the State and local levels is in need of reform if our farms, food producers, and retailers are to remain competitive and sustainable.
- Targeted support to improve the financial capacity and technical proficiency of farms and food businesses is needed to catalyze new growth in our food system.

In addition, the need for collaborative action is recognized as the key to success. This will be accomplished by the building of alliances among stakeholders in sectors of the system that are already strong, engaging new partners, identifying shared interests, and working toward them.

Below are the four broad goals established for this plan by the Massachusetts Food Policy Council. Each is followed by a short description of the key needs that planning participants and the facilitation team identified, followed by leading actions from the full plan to address them. For the complete list of actions, as well as detailed information about existing conditions of the Massachusetts food system, please refer to the full plan, available at www.mafoodplan.org.

**Goal 1: Increase production, sales and consumption of Massachusetts-grown foods.**

Massachusetts' strong agricultural, fishing, and processing sectors offers a platform upon which increased production, sales, and consumption of local food can be leveraged.

One opportunity is in direct farm to consumer sales. On average in the U.S., about 80 cents of every dollar spent on food goes to marketing, processing, wholesaling, distribution, and retailing, and other costs not directly related to production. Less than 11 cents actually goes to the farmer.¹ But in Massachusetts, there are now more than 2,200 farms that sell directly to consumers at farm stands, farmers markets, and

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There are more than 11,000 jobs in fishing and related industries, yet this industry remains highly vulnerable to outside forces, including climate change and fluctuations in international markets.

Increasing the production and sales of local food in Massachusetts will require addressing challenges affecting farms, such as the low-margin nature of the business, New England’s short growing season, very expensive land, and a regulatory system that is difficult to navigate. Public investment in State agency services for agriculture, especially UMass Extension, has not kept pace with these and other needs of the agricultural sector.

Our seafood industry faces similar challenges, and fishing communities in Massachusetts have been in decline in recent years. Fishing businesses are subject to fluctuations in international markets. Fisheries also bear the impact of dramatic ecological shifts from climate change and decades of unsustainable fish stock management practices. There is also a general lack of collaboration and unity within the industry. Efforts to make direct to consumer connections have lagged far behind those of land-based farmers, and funding for fisheries research has been cut dramatically.

With products of both farms and fisheries, regulations related to food processing intended to achieve consistency and promote safety often present disproportionately greater challenges to small-scale food producers and processors, as the costs and complexity of compliance relative to their operations can be onerous. Many of Massachusetts’ food distribution systems are inefficient and costly, which marginalizes products from local small food businesses. And both wholesale and retail markets have specific requirements for product preparation and packaging that can be barriers for small food companies.

Key actions to increase production, sales, and consumption of Massachusetts-grown and -produced foods include:

**Market Massachusetts-produced food more effectively.** Develop a strong market development program that coordinates the efforts of statewide brands and marketing campaigns with those of the regional buy local organizations, and support this program with public investment.

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Provide resources for farming. Support farmers with research, technical assistance, and other resources that help them remain viable and competitive.

Distribute food more efficiently. Build networks and support connections among stakeholders in all links of the food chain to develop innovative ways to move food from producers to consumers. Create efficiencies through aggregation, and provide technical assistance and education to practitioners.

Improve food processing infrastructure. Support the development of shared-use kitchens and incubators to nurture small businesses and startups, and expand the capacity for freezing and other preservation methods at these facilities. Support growth of small businesses through flexible financing, and target training opportunities to meet changing demand.

Support the seafood industry. Provide funding and expertise for local seafood product development, including value-added opportunities. Develop direct to consumer markets for seafood.

Develop farm to institution markets. Build direct connections between producers and large buyers, and support regulations that streamline public entities’ procurement processes and mandate purchases from local sources.

Goal 2: Create jobs and economic opportunity in food and farming, and improve the wages and skills of food system workers.

Creating new food system jobs and opportunities will require a strategic blend of workforce training, business development, and regulatory improvements.

The food system workforce spans many types of jobs, including farmers, food processors, truck drivers, retail grocers, restaurant workers, hunger relief workers, nutritionists, and more. All are indispensable. And while the overall number of food system jobs has increased in recent years, many of these positions require training and advanced skills. There are 556 education and training resources in the Commonwealth that offer a variety of food system education, information and training in the areas of production, processing, distribution, food service, food inputs, and health nutrition access. But our workforce development system is not currently equipped to train people for all current and anticipated occupations and businesses in the food system. And, at the same time, farmers, fishermen, and other food producers express concern about having access to an adequate labor supply.

There is also opportunity for further development of food system businesses. In 2012, total food system sales and revenue accounted for $19.3 billion, or about 4.5 percent, of State gross domestic product.
product. Within that number, agricultural sales (excluding tobacco and greenhouse sales) were over $427 million, which generated over $671 million in spin-off economic impact. Fisheries alone generate more than $7.7 billion in sales each year, with another $3.07 billion in value-added seafood processing. Total food processing revenue is nearly $2.5 billion per year, fully ten percent of the Commonwealth’s manufacturing. Food system revenues, however, are offset by higher than U.S. average costs for land and energy, which affect businesses, as well as housing costs that are as much as 26 percent above the national average, which impact workers at all levels.

Finally, regulations also directly affect workforce and business development. Federal labor regulations for on-farm workers, for example, are highly complex and difficult to comply with. For businesses, compliance with regulations and code enforcement that often vary by town for food sales and processing, as well as building and plumbing, are barriers to businesses that wish to expand regionally.

Key actions that are recommended to continue the expansion of employment and economic opportunity in the Massachusetts food system include:

Support food system businesses, workers, and consumers with a strong research, educational, and technical assistance network. Build UMass Extension’s capacity to provide needed education and technical assistance targeted to the needs of the industry, and encourage other service providers to collaborate to avoid duplication and provide services where they are most needed.

Ensure that regulations support the growth of agriculture and other food system businesses, while protecting workers, the environment, and public health. Develop and implement regulations consistently and fairly, through a transparent and engaged process. Pair guidance and assistance with new regulations, to facilitate compliance and improved practices.

Identify regulations that hinder viability. Examine, assess, and revise regulations regarding slaughter, on-farm plumbing, labor, building codes, and other points that add costs to food businesses unnecessarily. Ensure consistency across jurisdictions, and prioritize providing assistance toward compliance rather than punitive action for violations.

Fund infrastructure development. Support investments in modern equipment that facilitates safe, efficient food production and processing. Develop shared-use and multi-purpose incubators to nurture small businesses.

Provide business supports. Expand the range of financial and business planning services for farms and food businesses. Prioritize and foster opportunities for full-time, well paying jobs.

**Goal 3: Protect the land and water needed to produce food, maximize environmental benefits from agriculture and fishing, and ensure food safety.**

Massachusetts farmers steward 523,517 acres of land, but a significant amount of it has been lost in recent years. From 2005 to 2013, an average 13 acres per day was converted to non-agricultural uses (usually residential development), resulting in a loss of 38,000 acres in less than a decade. Since it was launched in 1979, Massachusetts’ Agricultural Preservation Restriction (APR) program has been extremely effective,
Plan Summary

Converting food waste to compost reduces food being discarded into the solid waste stream and provides amendments for improved soil fertility.

This continuing decline in our agricultural land base, especially cropland, threatens the farming sector’s future viability. Competition for land, driven by both developers and farmers, is pushing purchase and lease prices up. The lack of affordable land in our State is routinely mentioned by established and aspiring farmers alike as one of the biggest challenges to starting new farms and expanding existing ones.

There are some resources and service providers to support farmers in meeting various technical needs, such as soil health, nutrient management, water quality and quantity, energy efficiency and renewable energy, and conservation. But there is a significant shortage of technical assistance to inform and educate farmers and landowners about these services or to meet the demand for them. Importantly, the fishing industry lacks sufficient technical assistance resources for management practices to protect the sustainability of fish stocks and the marine environment.

Improved management of food waste is a particularly urgent need for all farm and food businesses since a statewide ban on sending commercial food waste to landfills went into effect in 2014. There are a growing number of opportunities to divert food waste to energy production through the use of anaerobic digestion, as well as to home and community composting. Yet these initiatives have not yet received enough support to appreciably reduce the food waste going into landfills. Food waste decomposition in landfills produces large quantities of methane, a greenhouse gas with 25 times the climate change accelerating impact than carbon dioxide.

Water needs also must be addressed. The Massachusetts food system, including crop irrigation, livestock production, and processing, currently uses 150 million gallons per day.

Complying with food safety regulations is essential for farms and food businesses, but in Massachusetts regulations and their enforcement frequently vary from community to community. This often results in inconsistent or conflicting interpretations of regulations, leading to less efficient and ultimately less sustainable operations, especially for businesses that wish to operate within more than one town. At the same time, there are not enough education programs and resources to adequately inform stakeholders, including consumers, about food safety information and practices.

Actions to better protect our environment and promote food safety include:

**Keep farmland in farming.** Protect land with a range of tools that sustain viable operations designed to keep farmers on their land. Reduce tax burdens, encourage municipal bylaws that help to keep farmers on
their land, and ensure that programs meant to help farmers are keeping up with changes in agriculture. 

**Permanently protect farmland.** Support public efforts such as the Agricultural Preservation Restriction (APR) program, Transfers of Development Rights, and Chapter 61A. Provide farm linking services and succession planning resources.

**Make more land available for farming.** Make more land owned by the public and nonprofits available for farming. Support managed development that does not encroach on existing farmland, and examine wetland regulations for opportunities to farm more land while protecting natural resources. Offer resources that allows for more crop production in urban areas.

**Improve soil health.** Incentivize best practices for farmers around cover crops and other management techniques that maintain soil organic matter. Facilitate better access to conservation programs.

**Provide resources for fisheries.** Support and educate the fishing industry on sustainable management practices that protect stock and habitat.

**Protect water resources.** Provide incentives and technical assistance for increasing water conservation and decreasing water pollution in food process and on farms.

**Increase energy efficiency and sustainable practices in food production.** Streamline processes for participation in public programs that provide financing and technical assistance for energy efficiency upgrades, and invest more public resources in these programs. Support education and technical assistance around fertilizer, pesticide, and nutrient application.

**Ensure food safety.** Improve availability of food safety information for consumers, and outreach, technical assistance, and training for food system workers in all sectors. Ensure that regulations are science-based, effective, and appropriate for Massachusetts businesses size and complexity, and that technical assistance and education to help facilitate compliance is readily available.

**Goal 4: Reduce hunger and food insecurity, increase the availability of healthy food to all residents, and reduce food waste.**

Throughout this plan, strong emphasis is placed on the needs of people who do not have enough food, as well as the public and personal health consequences of hunger and poor nutrition. The plan highlights opportunities to address these problems with cross-cutting strategies that complement and strengthen the local food system, and that ensure that healthy and locally grown food is available and affordable to all.

The reasons people are food-insecure are well-known: lack of income, inability to reach stores with healthy foods, and a lack of understanding of the direct connection between diet and personal health. For seniors and children, the rates of food insecurity and poor health outcomes are even greater than they are for the general population. For children, the lack of early education about nutrition contributes to food insecurity, as they grow up without fundamental skills in food preparation, shopping, and budgeting.
While Massachusetts is blessed with a strong and dedicated network of food pantries and public health agencies and organizations, the facts are that the number of residents who are food insecure has doubled in the last 15 years to 11.9 percent of our total population, and poor nutrition is contributing to epidemic rates of obesity and being overweight among residents. About 36 percent of Massachusetts’ adults are overweight and 23 percent are obese. In the past ten years, the number of adults in Massachusetts with diabetes has increased 28 percent. And these health impacts are hitting people of color disproportionately harder. In 2011, African American adults were about 40 percent more likely to be obese, and Latino adults were 30 percent more likely to be obese than white adults.

Massachusetts emergency food distribution system includes more than 700 food pantries and meal programs around the State. They are supported by four major regional food banks, which are primary providers of food to these agencies. But a relatively small portion of emergency food is locally produced. To help provide more nutritional food to people in need, Massachusetts Department of Agricultural Resources (MDAR) in 2010 began dedicating a portion of the emergency food purchase dollars it manages to fresh, healthy, local foods. In 2014, these local purchases totaled $780,000 for more than 1.7 million pounds of Massachusetts food and produce. While this has significantly increased the amount of healthy food available to low-income residents, many food pantries face another barrier in the shortage of refrigeration and transportation to deliver to their clients before it spoils.

Nutrition assistance programs have become critical sources of help to individuals and families on low incomes. The most heavily relied-upon is the federal Supplemental Nutrition Assistance Program (SNAP), with 863,412 Massachusetts resident participants in FY2014. SNAP distributed $1.27 billion in benefits, or about $123 per recipient per month – revenue that flows directly into retail food outlets. Yet recent challenges that prevented many households from accessing the program when they needed it highlighted the tenuous nature of food security for large numbers of residents, as well as the significant revenue that nutrition assistance delivers to our food system.

The key recommended actions to improve access to healthy food, reduce food insecurity, and improve public health include:

Increase household buying power. Expand the Massachusetts Earned Income Tax Credit and leverage other public support programs to better meet the needs of the people they serve. Support a living wage. Expand workforce education opportunities, so that all workers have the chance to advance in their careers. Support the Massachusetts Department of Transitional Assistance (DTA) Healthy Incentives Program to provide SNAP doubling at farmers markets and CSAs statewide.
Expand nutrition education. Educate consumers about how to add healthy food to their diets – from shopping and budgeting, to storage and preparation. Enlist healthcare providers, institutions, and insurers to help foster access to healthy foods through education and incentives. Bring back home economics in schools to teach food shopping, budgeting, and nutrition skills.

Expand physical access to fresh, healthy, and local food. Increase the availability of locally produced fresh, healthy foods through food pantries and meals programs, through increased purchases by emergency programs and more direct connections between farmers, producers, and hunger relief agencies, and by funding the Massachusetts Food Trust to support retail businesses in underserved communities. Expand the role of major institutions, such as hospitals and health care providers, in bringing healthy food to their clients and communities.

Expand access to healthy food for children. Support farm to school programs, coupled with increased education for children on nutrition awareness.

Improve access to healthy food with better transportation and food infrastructure. Work with transportation planners to improve public transportation service to grocery stores. Develop new access options for people in rural areas. Support mobile farmers markets and grocery stores to serve areas without sources of healthy food.

Support urban agriculture. Develop resources and supportive regulations to grow urban agriculture as a tool for education, community building, job training, and food production.
Introduction

Connections in our food system are essential. For fruits and vegetables, it is the connection between seeds and Massachusetts’ fertile soils. Our fish and shellfish rely on clean seawater and a healthy marine environment. Meat and dairy products depend upon livestock’s access to land. And all of these foods owe their growth to the careful, expert stewardship of our State’s farmers, fishermen, and other food system workers who, in turn, owe their expertise in part to access to resources and education, and to a system that understands their work and supports it. So, too, do successful plans and initiatives require connections between people and ideas, between history and current realities, and between policy and practice.

Such connections form the core of this food system plan. The Massachusetts Food Policy Council (MFPC) and food system stakeholders committed to developing a “vision and plan to increase agricultural production, processing, and distribution that will serve as economic stimulus and address multiple related public health and food security issues.” The initiators of the plan envisioned “a strong, abundant, and resilient food system that is rooted in communities; provides quality jobs; contributes to a vibrant economy; utilizes, enriches, and sustainably manages our State’s natural resources; and supplies healthy, affordable, and accessible food for all residents of the Commonwealth.”

Developing a food system plan is not a new idea for Massachusetts. In 1974 the Governor’s Commission on Food, prompted by national concerns about sudden shortages in key grain crops and subsequent increases in retail food prices, issued *In Search of a Food Policy,* to address the need for “an adequate supply of food both now and in the future” by examining the food system “as an interrelated, interdependent system [that]...must be responsive to the changing needs of all consumers.” Coming out of that process was the Commonwealth’s first-in-the-nation Agricultural Preservation Restriction program, which to this date has protected more than 71,000 acres of farmland, as well as the *Mass Grown and Fresher!* brand, the first statewide marketing campaign for locally-grown foods.

In 1988 a second plan, *The Massachusetts Farm-and-Food System: A Five-Year Policy Framework,* emphasized agriculture’s “positive impact on food quality and availability, open-space preservation, jobs,
and the quality of life we enjoy.” From this plan came efforts to revitalize the Commonwealth’s food processing sector, which today makes up ten percent of Massachusetts’ manufacturing revenue.

As support for local food production and access grew in the late 2000’s, legislation was passed establishing the Massachusetts Food Policy Council. This 17-member body of public sector officials from the State’s executive and legislative branches, along with private and nonprofit stakeholders in the food system, was charged with developing recommendations to advance food system goals for the Commonwealth, and ultimately initiated this planning process with public and private support.

Thanks in part to these previous efforts, the State started this planning process from a position of strength. Massachusetts is home to the largest consumer demand for food in New England, some of the best farmland in the nation, abundant fisheries, and a population with a keen interest in and awareness of the food they eat and how their choices affect their own lives as well as the world around them. These factors have enabled us to create a thriving agricultural economy, with an increasing number of farms in recent years. Local fishing and shellfishing industries are growing as well, helping to reinvigorate Massachusetts’ traditional fishing communities. We have an innovative public health sector, and an established track record of being at the forefront of efforts to protect farmland and natural resources. We are also strengthened by a thoughtful network of organizations committed not only to connecting underserved families with resources to address their immediate food needs, but also to addressing the underlying issues of poverty and hunger. All of these elements form a strong foundation for an integrated, sustainable, resilient, and equitable food system in which an increasing portion of our food is cultivated, caught, processed, and distributed within Massachusetts.

Achieving this goal of increased food production will not happen without further work, however. Our food system needs to be further strengthened in the face of serious new challenges. A retiring generation of farmers combined with high land prices threatens to cause a loss of farms and farmland at a time when younger generations are struggling to find land on which to farm. Complex and often opaque regulations without technical assistance to assist with compliance pose difficulties for small business owners in every sector of the food system. Hunger rates are rising, particularly among children, seniors, and other vulnerable populations.³ 

levels of obesity, diabetes, and other diseases stem from poor nutrition, lack of access to healthy foods, and the root causes of poverty, which in turn increase the shared cost of our public health system. Threats to our natural resources from climate change, pollution, and development are widespread.

This planning process sought to leverage myriad assets and opportunities to address these challenges by connecting people from all parts of the food system to identify barriers to growth, highlight examples of success and innovation, and propose actions for the public and private sector toward the realization of a sustainable food system. The emphasis was on finding ways to strengthen the intersections of different parts of the Massachusetts food system, in an effort to catalyze systemic change.

There are no clear boundaries defining where a food system begins and ends. It influences and is influenced by every sector of the global economy, and by forces as variable as climate and as enduring as topography. Geographic boundaries of food systems are porous as well: the Massachusetts food system is far from autonomous; it is closely tied to regional and global food systems.

For the purpose of this plan, however, we drew geographic and functional boundaries. This is not to suggest that the Massachusetts food system can or should operate in isolation, or that any food system can exist independently from external factors. In fact, even under optimal conditions Massachusetts simply would not have the capacity to have a fully self-reliant food system due to finite land resources, a short growing season, and increasing population. Rather, these boundaries were defined to focus our work on better understanding how we can capitalize on the strengths and address the challenges particular to the Commonwealth’s local food system, so that it can better interact with broader systems and influences.

The MFPC charged the planning team\(^4\) with developing “a general framework for goals and objectives that will improve Massachusetts’ agricultural economy, enhance the resiliency of the Commonwealth’s food system, and improve the nutritional health of the State’s population,” with “a heavy, but not exclusive emphasis, on food production in the Commonwealth and the economic viability of the agricultural sector.” To that end, this project seeks to advance four goals:

- Increase production, sales, and consumption of Massachusetts-grown foods;
- Create jobs and economic opportunity in food and farming, and improve the wages and skills of food system workers;
- Protect the land and water needed to produce food, maximize environmental benefits from agriculture and fishing, and ensure food safety; and
- Reduce hunger and food insecurity, increase the availability of healthy food to all residents, and reduce food waste.

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\(^4\) The planning team for the food system planning process was comprised of the Metropolitan Area Planning Council as the lead, and the Franklin Regional Council of Governments, the Pioneer Valley Planning Commission, and the Massachusetts Workforce Alliance as partners.
The planning process involved an unprecedented statewide public outreach effort, engaging more than 1,500 participants. Most significant were the reports of eight working groups, led by project advisors and involving nearly 300 people, which provided tremendously informed, rich, and relevant input. This work was combined with comments received in regional public forums, interviews with experts and key stakeholders, academic research conducted specifically for the project, and a detailed review of literature and quantitative data to produce the plan. Public input details are contained in the Appendices.

There is no one right way to look at the food system, no single point where it begins or ends, and there are many ways to sort all of its complex elements. To organize its goals and recommendations, the plan focuses on eight broad aspects of the food system and the key points of leverage within each of them that can move the Commonwealth’s food system toward these goals.

- **Land**, examining the accessibility of resources available for crop production, grazing, and other agricultural uses.
- **Inputs**, considering energy, water, waste, and other necessary elements of the process of growing and processing food.
- **Farming**, specifically land-based food production, including the particular issues and concerns around community-based and commercial agriculture in cities.
- **Fishing**, with an eye toward Massachusetts’ rich seafood resources and how to best connect those resources with local consumers.
- **Processing**, with a particular focus on how to turn Massachusetts-grown, -raised, and -caught foods into value-added products.
- **Distribution** of fresh and processed foods through direct to consumer, wholesale, retail, and institutional markets.
- **Marketing** those foods through developing brand identities and highlighting desirable characteristics of local products.
- **Food access, security, and health**, considering the availability and accessibility of healthy food, particularly for residents and communities where options are limited.

Within each of these topics, there are a range of recommendations, from broad, long-term goals, to specific, discrete steps addressing immediate concerns, to suggestions for further investigation on particular topics. In many cases themes emerged in multiple areas, highlighting the need for different...
sectors of the food system to support each other and collaborate in order to truly affect coordinated, efficient systemic change. Six of these cross-cutting themes in particular affect multiple stakeholders and sectors of the food system.

**Education, Training, and Research**

The need for more education throughout all sectors of the food system figures prominently in the plan. Strengthened educational services and training, coupled with applied research and targeted technical assistance, should be key tools to advance the state of practice in all sectors of the Commonwealth’s food system. Farmers, fishermen, and processors need access to training on the latest management and production technologies, support in understanding and complying with regulations, and research and training that helps them to produce food economically, in an environmentally supportive manner, and safely. UMass Extension, nonprofit organizations, government agencies, and other entities all have roles to play in meeting these needs.

Greater education was also identified as essential for consumers and the workforce. From increasing ways for consumers to make informed decisions about the food they purchase; to bringing agricultural education, school gardens, and home economics skills back to school curricula; to understanding how public policy and regulations effect farming and the larger food system; to educating consumers about the variety of fish species caught in Massachusetts waters; to targeting job training programs focused both on entry-level and incumbent skills-building toward sectors where a ready and available workforce is most needed, the plan emphasizes the need for knowledge sharing and communication throughout the food system.

**Regulation**

Regulations are a necessary part of the food system. They create clear expectations for producers, processors, and retailers while protecting workers, the public, and the environment. Every step of producing food – from how the land is taxed and soil nutrients are maintained, to how workers harvesting the crop are paid and how products are labeled – is closely regulated. So, too, are the processing and distribution systems. Compliance protects consumers, the environment, and ultimately the viability of the food industry. However, each regulation can also add costs for the producer, and compliance requires technical knowledge, education, and assistance.

There are concerns that the costs of some regulations outweigh their benefits, the ability of producers to comply, or even the ability of regulators to enforce them, and that some regulations
lack a basis in facts and science-based research. In addition, the inconsistent regulatory structure and insufficient funding at the State and local levels create barriers to regulators’ ability to predict and respond to changes in production, distribution, and retail practices, resulting in obsolete regulations that do not adequately address emerging issues in the food system.

To address these issues, a number of recommendations cite the need for substantial reform in how regulations are developed and enforced, promotion of more uniformity across municipal boundaries, engagement with a broad group of stakeholders earlier in the regulatory process, and an emphasis on enabling compliance, rather than having punitive action against violations as the only remedy. At the local level, the recommendations cite the need to support the capacity of regulators to appropriately address existing and emerging issues related to food. Regulations and their enforcement should, above all, foster the production of better and more food while managing risk responsibly, not impose new management practices that producers and processors are unable to implement if they are to remain viable.

Economic Development

The theme of economic viability runs through all of the plan’s recommendations. The food system is made up of businesses that create jobs, pay for services and supplies, and contribute to the Commonwealth’s economy and tax base. A vibrant food system depends upon the ability of these businesses to thrive in a very competitive marketplace. Strengthening the commitment of all stakeholders – including consumers, producers, distributors, regulators, and policy makers – to fostering efficiencies in the State’s food system, will, in turn, strengthen the Commonwealth’s economy.

A key part of that success lies in marketing and education. That means developing new markets and creating a brand and identity for Massachusetts foods which appeal to local consumers while also building wholesale, domestic retail, and export markets. Consumers, too, must be engaged and play an active role in strengthening the Commonwealth’s food system. For this to happen, there must be easy ways for people to get the information they need to make informed food choices. The plan calls for a system that clearly informs consumers about the implications of their food purchases, and reinforces the connections between those purchases and the growth of the State’s economy, viability of our farms, fisheries, and other food businesses, and preservation of the open working landscapes that so many Massachusetts residents value.

Equity

Safe and secure communities begin with healthy residents. For a vibrant food system that works for everyone in Massachusetts, it is critical to increase consumption of healthy and locally produced foods by lowering structural barriers to food access. How and where food is grown, processed, marketed, sold, and regulated has a profound effect on who has access to it, and there are opportunities in every part of the food chain to broaden that access. The plan emphasizes the need to leverage income supports and invest resources to create healthy, food-secure communities, where people and neighborhoods disproportionately impacted by a lack of access have the ability
to acquire foods from an array of healthy food access points, while still paying a fair price that helps to sustain local food producers.

At the same time, information, land, and support for residents to grow, preserve, and prepare their own food in community gardens or on their own land is a valuable tool for promoting health, nutrition, and a deeper understanding of the food system.

Equity considerations extend beyond those affecting individuals, and encompass the need for financial, technical, and regulatory supports for a broad range of farms and other food businesses. Supporting small and startup businesses is critical, but so is ensuring that mature enterprises can survive. While innovation should be fostered, it should not come at the expense of supports for conventional food production upon which the food system is reliant.

**Environment**

The plan places high priority on ensuring that food producers are supported in their efforts to comply with environmental regulations, as well as to preserve and protect natural resources. It also seeks to identify areas of conflict and recommend solutions. Every step in the food chain requires the use of some resources. The plan looks at where and how those resources are used, and considers how their use can be optimized to help improve the viability of the Massachusetts businesses that grow, process, and distribute food.

As stewards of land and sea, food producers of all types need support in employing sustainable management practices and adopting energy efficiency and renewable energy generation techniques while remaining economically sustainable. Fuller integration of food processing and distribution methods into the broader food system can lead to efficiencies that will cut energy costs and reduce environmental impact. Innovation at all levels of the food chain – from producers to consumers – can help reduce the waste generated from excess food and packaging.

**Networking and communication**

Implementing any change in the food system requires informed, connected, and motivated participants. There is a strong need for ongoing networking within and among the sectors of the food system to share resources and ideas, and to collaborate on advocacy agendas that are mutually supportive. This will require public and private support for ongoing, facilitated networks, advocacy, and education.

We all eat, and therefore we are all important participants in the food system. The choices we make about the food we buy and where we buy it drive production, influence markets, support economies close to
home and farther away, and affect our health and our environment. This plan seeks to shape the local food system so that Massachusetts residents, through their eating choices, can contribute to a more sustainable, equitable, and resilient food system, and a strong and equitable local economy.

The goals and action items in this plan focus on how to support the people, government agencies, organizations, businesses, institutions, and activities that make up Massachusetts’ food system, with an eye toward making that system more resilient, more responsive to the needs of all residents of the Commonwealth, and better able to engage with the broader systems that shape what we eat every day. They represent ideas generated by a robust engagement process, involving more than 1,500 eaters, food producers, advocates, policymakers, regulators, and practitioners from all parts of the food system. Each recommendation is designed to support economically viable businesses producing, processing, distributing, and marketing more food in Massachusetts, and making it available to everyone.

This plan represents a snapshot of the local food system at this particular point in time, offering a framework of values and principles to guide future programs, funding, and conversations within the food system. The forces that shape our food system are constantly changing and our readiness to adapt and adjust our solutions and approaches toward these goals is critical. This plan is a foundation on which to begin, a map showing the lines between all of the elements of our local food system. Those connections are essential.
Goals and Recommendations

Farmland is the foundational infrastructure for the State’s agricultural industry. It is a natural resource critical to the State’s air and water quality, and vital to our community character and heritage. For most farm families, it is the source of their income and their primary retirement asset.

Massachusetts is home to some of the best farmland in the world. In addition to fertile bottomland soils like the unparalleled farmland along the Connecticut River, agricultural lands range from hilly and rocky fields, ideal for grazing, to land that supports orchards, cranberries, and sugar maple. Since the 1940’s, however, farmland has been steadily converted to other uses, lost to development, the return of New England forests, invasive species colonization, and other factors. The most productive farmland is often the most sought-after by developers as it is typically flat and well-drained. Growing the Commonwealth’s food production capacity will require reversing the trend of farmland loss and bringing more land – much of it former farmland – into production. It will also require innovation, resources, and zoning changes to reclaim urban spaces to meet growing interest in urban commercial and community agriculture.

The goals, recommendations, and actions for the Land section aim to protect more farmland, increase the number of acres in active agriculture, and address the affordability of farmland for established and entering farmers alike. In addition, the recommendations seek to help farmers responsibly steward the lands they farm and to ensure that land use regulations are reasonable and effective and do not unduly erode the equity that is represented in the thousands of acres of Commonwealth farmland.
Land Goals

Goal 1: Farmers will be able to sustain economically viable operations on their land.

Goal 2: More farmland and prime farmland soils will be permanently protected.

Goal 3: More land will be available for agriculture in rural communities, suburbs and cities, and farmers will have more secure and affordable access to that land.

Goal 4: Farmers will be supported in contributing to a healthy environment.
Land Goal 1

Farmers will be able to sustain economically viable operations on their land.

Land is agriculture’s foundational infrastructure, and most farmers’ primary asset. Accordingly, property taxes and land use regulations and programs play a large role in farm profitability and business viability. The State’s Chapter 61A program is an important tool, offering reduced property taxes on land in active agricultural use in recognition of the benefits it provides and the fewer municipal services it requires. And, as stated previously, the State’s Agricultural Preservation Restriction (APR) program is also a vitally important tool and accounts for approximately 71,000 acres of the 74,122 total acres of permanently protected farmland statewide, keeping the land in production and more affordable for current and future farmers.¹ Three other State programs – the Farm Viability Enhancement Program (FVEP), the APR Improvement Program (AIP), and the Matching Enterprise for Agriculture (MEGA) Program – provide business planning, technical assistance, and grants to help improve the productivity and profitability of Massachusetts farms. The FVEP offers assistance and grants in exchange for a short-term covenant to keep the land in farming. The AIP invests in infrastructure improvements to support new and expanding farm enterprises on land that has been permanently protected. And the MEGA program provides assistance and matching grants to new and expanding farmers who aspire to develop their farms into commercially viable operations.

These programs are valuable and necessary to keep land in farming and farmers on the land, but policy challenges and gaps remain. In the case of Chapter 61A, municipalities are allowed to set their own land valuations rather than those set by the State. Some municipalities that have chosen to do so have used rates based on farmland sales rather than farmland use, resulting in significant property tax increases for some farmers.² Farms which have retail operations or process their farm products on-farm rely on buildings as much as land for their operations to be financially viable. Yet unlike land, tax laws do not recognize this and farmers often face debilitating tax bills on buildings. Relatedly, where State law allows towns to vote to exempt farm equipment and animals on non-incorporated farms from excise tax, this provision does not extend to incorporated farms. Yet many family farms incorporate to protect their homes and personal assets from liability. Additionally, some communities charge farmers stormwater and flood water utility fees, which can range from relatively small for farmland to significant for farm buildings, and can include land eligible for Chapter 61A.

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¹ See Agricultural Preservation Restriction Program summary report dated June 22, 2015, prepared by the MA Department of Agricultural Resources and presented to the Agricultural Lands Preservation Committee.
Finding the optimal balance between resource protection and economic viability also continues to be a challenge. Changes to the APR program in 2014 were intended to strike a more appropriate balance between protecting the State’s investment in agricultural resources and allowing non-agricultural activities and infrastructure on protected land to support the economic viability of farm enterprises.

Engaging the agriculture community at the beginning stages of any environmental or land use rulemaking process is important to ensure that concerns about economic impact are identified and addressed.

Farmers around the Commonwealth are also challenged by a variety of man-made and natural threats to their land, including vandalism, wildlife, and, increasingly, severe weather. Damage to crops and land from these various threats can be extensive and expensive, pointing to a need for ways to mitigate this damage and insure against the risk.

**Recommendation 1.1:** Reduce the municipal tax burden on farms.

**Action 1.1.1:** Enact legislation that provides a tax credit for agricultural buildings, exempting new or reconstructed agricultural buildings essential to a farm operation from local property taxes for a period of ten years, provided the building remains in agricultural use.

**Action 1.1.2:** Expand current law that allows towns to vote to waive excise tax on farm animals and equipment to include incorporated farming operations.

**Action 1.1.3:** Enact legislation to exempt farmland eligible for Chapter 61A from municipal storm or floodwater fees.

**Action 1.1.4:** To address concerns over potential loss of revenue to rural communities, explore ways to provide financial incentives to communities that enact farm-friendly zoning and tax policies, including through the Baker Administration’s Commonwealth Compact initiative.

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**Grain operation upgrades through APR Improvement Program**

Mike Kosinski is a third-generation farmer and the owner/operator of North Country Harvest, a 390-acre grain operation in Westfield. Through his participation in the APR Improvement Program (AIP), Michael received technical and business planning assistance as well as a $75,000 AIP grant for infrastructure improvements. Mike used the funds to purchase a new grain dryer, grain cleaner, and grain bin.

The farm improvements have significantly improved the efficiency and profitability of his farm operation. “I am not sure if I could have continued with the corn-only operation based on prices and the marketplace,” says Mike. “Between the financial planning assistance and the grant funds I received, AIP truly made this operation viable.”

**Related Goals and Recommendations:** Land 1.4 and 1.5, Farming 3.1.2
**Recommendation 1.2:** Ensure that Chapter 61A valuations are based on use value.

**Action 1.2.1:** Modify Chapter 61A to direct the Farmland Valuation Advisory Commission (FVAC) to guide and limit municipalities setting their own farmland values, to ensure that values are based on use value, not sales value. The University of Massachusetts’ Department of Resource Economics should provide increased resources and expertise to the FVAC in evaluating and updating farmland values across the Commonwealth.

**Action 1.2.2:** Develop 61A valuation for forestland where trees are tapped for maple products.

**Action 1.2.3:** Task the Massachusetts Department of Revenue (DOR) with creating a guidance document on Chapter 61A for local assessors and appraisers.

**Recommendation 1.3:** Encourage communities to enact zoning bylaws that permit ancillary commercial enterprises in areas zoned for agriculture.

**Action 1.3.1:** Expand “best practices” in Baker Administration’s Community Compact initiative to include zoning that allows ancillary commercial activities on farm properties, including accessory apartments.

**Recommendation 1.4:** Provide sufficient funding through the FVEP to enable farmers to access business planning assistance and capital for business improvements in exchange for farmland protection covenants.

**Action 1.4.1:** Fully expend all existing bond authorizations for farm viability by 2018, and increase funding for the FVEP in subsequent authorizations.

**Recommendation 1.5:** Ensure that farmers who are farming permanently protected land are able to access capital for infrastructure improvements.

**Action 1.5.1:** Fund the APR AIP at a level that meets program demand, and expand AIP eligibility to farmland protected with Conservation Restrictions (CRs).

**Action 1.5.2:** Educate commercial lenders about current values of permanently protected land, to encourage lending for farm infrastructure on protected land.

**Recommendation 1.6:** Ensure that the Agricultural Preservation Restriction (APR) Program adequately considers farm viability and the infrastructure needs of current and future farmers.

**Action 1.6.1:** Task the Agricultural Lands Preservation Committee with a review of APR regulations to consider whether regulatory or policy changes are needed to promote farm viability and allow for needed farm infrastructure.

**Action 1.6.2:** Convene a working group to develop recommendations around housing on APRs.

**Recommendation 1.7:** Help farmers to more effectively mitigate damage to their farmland caused by man-made or natural events and disasters.

**Action 1.7.1:** Train agriculture and conservation commissions on actions farmers may take under current law to manage on and off-farm beaver activity to avoid property damage. If needed,
consider changes to State law to allow farmers recourse in the event of off-farm beaver activity that is damaging a farm’s crops or farmland.

**Action 1.7.2:** Advocate for federal crop insurance products that would cover the loss of fruit trees and other perennial crops in the event of vandalism, flooding, wildlife, or other damage not covered by existing crop insurance policies.

**Action 1.7.3:** Increase technical assistance to farmers around crop and livestock-specific climate change adaptation strategies. Include climate change adaptation strategies as eligible practices under the United States Department of Agriculture (USDA) Environmental Quality Incentives Program (EQIP).
Land Goal 2

More farmland and prime farmland soils will be permanently protected.

The APR Program is one of the oldest farmland protection programs in the country, and is complemented by two other land protection tools – the State’s conservation tax credit and its Community Preservation Act (CPA). Even with these tools, just a little over 14 percent of the State’s land in farms is permanently protected.³

Transfer of Development Rights (TDR) is a zoning tool used successfully in other parts of the country that would be a valuable addition to the Massachusetts toolbox. Although there are some municipalities that allow for TDRs, few are using it to its full potential.

Two aspects of the APR program limit its ability to protect land important for food production – the per-acre price cap, and the five-acre acreage minimum. The per-acre price cap has made APR projects especially challenging in the eastern half of the Commonwealth, especially in communities without the CPA to augment APR funding. The five-acre threshold is a barrier to preserving the type of small parcels valuable to startup farm enterprises or serving urban markets.

State funding for the APR program has declined in recent years; increased State support for the program will become increasingly important to make up for declining dollars through the federal Agricultural Conservation Easement Program (ACEP), whose rules also make protection of certain types of farmland problematic. Increasing State resources for land protection through the CPA and the conservation tax credit will also help to leverage municipal and private resources for farmland protection. Additionally, other State and federal programs should be explored for permanent protection of open space for community farms and gardens.

Lack of reliable statewide data around farmland trends prevents the development and tracking of meaningful targets around farmland retention, protection, and access. A formal State farmland action plan is being recommended to improve State data collection around farmland and establish formal farmland protection goals and benchmarks, providing a better roadmap for State investments in farmland protection in the future.

³ According to the 2012 Census of Agriculture, Massachusetts had 523,517 acres of land in farms in 2012, and as of June 22, 2015, the Commonwealth had protected 74,122 acres of farmland (71,796 acres with APR), or a little over 14% of all farmland.
Recommendation 2.1: Develop a formal State farmland action plan to: (1) determine the resources needed to improve State data collection around farmland trends; (2) establish a statewide baseline of land in active agricultural production, or the process for doing so with improved data collection, and a system for tracking acres of farmland in production over time; (3) set measurable goals and benchmarks related to farmland protection, retention, and access; and (4) recommend State program spending levels to meet those goals and benchmarks. The plan should consider the regional land use plans that have been undertaken by various regional planning agencies, and any available assessments, modelling or scenario planning that predicts future land use patterns, needs or threats. The plan should review rates of farmland loss and conversion determine the percentage of eligible acres currently enrolled in Chapter 61A, and identify threats to the Commonwealth’s farmland base, including conversion of farmland to solar development and threats to agricultural productivity as a result of climate change. The plan should identify areas of agricultural importance and areas with potential suitability for future food production, including those in urban areas, and include an inventory of farmland owned by the State, counties, and municipalities (such as correctional facilities, former State hospital lands, and other underutilized State-owned lands), and public utilities, identifying parcels that are currently in agricultural use or suitable for agricultural use based on an assessment of soils and other land characteristics. The plan should set measurable goals related to farmland resources in the Commonwealth and recommend a means for measuring progress against those goals. The plan should be formally adopted by the Commonwealth, and used to guide State policies and investments related to public infrastructure, agricultural infrastructure, climate change mitigation and adaptation, farmland protection, and farmland mitigation.

Related Goals and Recommendations: Land 2.3 and 3.11
Action 2.1.1: Establish a legislatively-appointed task force to develop a State farmland action plan, and provide necessary funding for its development. Members of the task force should include representatives of State agencies, farm and conservation organizations, University of Massachusetts, and other academic institutions with expertise in agricultural land data analysis, modeling, and mapping, regional planning agencies, and USDA’s Natural Resources Conservation Service (NRCS).

Recommendation 2.2: Increase the use of TDRs as a farmland protection tool.

Action 2.2.1: Create a statewide TDR credit bank and seek startup funding to get it established.

Action 2.2.2: Clarify through statute that municipalities may develop regional TDR programs, as has been suggested in versions of State zoning reform legislation.

Action 2.2.3: Update the TDR model in the Executive Office of Energy and Environmental Affairs (EOEEA) toolkit and provide interested communities with technical assistance on how to implement TDR in their town or municipality.

Recommendation 2.3: Increase the pace of farmland protection through the APR Program, including small, productive farmland parcels, especially in eastern Massachusetts and those on the edges of population centers.

Action 2.3.1: Fully expend existing bond authorizations provided for the APR Program in the 2008 and 2014 Environmental Bond by 2018, and establish an annual bond cap that allows maximum leveraging of federal farmland protection funds. Increase funding for the APR Program in the next Environmental Bond consistent with goals set in the proposed farmland action plan. See Recommendation 2.1.

Action 2.3.2: Create dedicated APR funding specifically for projects not eligible for NRCS’ Agricultural Land Easement (ALE) program.

Action 2.3.3: Increase the APR program’s current per-acre cap.

Action 2.3.4: Task the Agricultural Lands Preservation Committee (ALPC) with reviewing current APR program policies related to housing, farm infrastructure, the 5 percent impervious surface limit, and limits on renewable energy production if sited away from productive agricultural lands, and recommending changes as appropriate.

Action 2.3.5: Work with USDA-NRCS to include in the proposed State farmland action plan any elements needed to enable the Plan to be used as an alternative pathway for ALE program eligibility. See Recommendation 2.1.

Action 2.3.6: Allow pre-acquisitions of farmland through the ALE and APR program.

Action 2.3.7: Eliminate the requirement that land be in active agricultural use for 2 years to be eligible for the APR program.

Action 2.3.8: Support revisions to the CPA that will provide additional funding to the Trust. Encourage communities to adopt the CPA, which provides funding streams for open space...
protection (including agricultural land) and affordable housing, as well as recreation and historic preservation.

**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.

**Action 2.3.10:** Increase the State conservation tax credit, currently at $2 million annually, to $5 million annually, and improve its use with the APR Program.

**Recommendation 2.4:** Evaluate and consider the elimination of State capital gains tax on the sale of APRs.

**Recommendation 2.5:** Improve dialogue and information sharing among and between farm and conservation organizations, the ALPC, and State and federal agencies about farmland protection issues and challenges.

**Action 2.5.1:** Task MDAR and the ALPC with convening an annual forum to evaluate progress through the APR Program and to invite stakeholder input on APR program policies.

**Action 2.5.2:** Establish a coalition of agriculture, conservation, forestry, and smart growth organizations to work together and with the ALPC and State and federal agencies to identify and take action on common issues and priorities around farmland protection.
Land Goal 3

More land will be available for agriculture in rural communities, suburbs, and cities, and farmers will have more secure and affordable access to that land.

Between 1997 and 2002, Massachusetts saw a 10.2 percent decline of land in farms, from 577,637 acres in 1997 to 518,570 acres in 2002. While that trend has reversed, with the 2012 Census showing a small uptick in land in farms, to 523,517 acres or a nearly 1 percent increase, the number of acres in cropland—land that tends to be the most productive—has continued to decline, from 207,734 acres in 2002, to 187,406 acres in 2007, to 160,789 acres in 2012. The USDA Census of Agriculture does not indicate whether this land has been irretrievably lost to development, and USDA’s Natural Resources Inventory (NRI) conversion data is not available at the State level for recent years. An important first step related to this recommendation is better analysis and monitoring of farmland use and conversion patterns in the Commonwealth.

The decline in the Commonwealth’s agricultural land base, especially its cropland, threatens the industry’s viability. Indeed, competition among farmers for available farmland has increased, driving farmland prices up. Lack of access to affordable land is routinely cited by established and aspiring farmers alike as a primary challenge to entry and expansion.

Improving farm profitability is essential to slowing farmland conversion. So, too, is support for the State’s aging population of farmers and farmland owners, who could benefit from services around succession planning and, for those without a farm successor, assistance in finding a farmer able to purchase or lease the farm. For many retiring farmers the APR Program is an important option to tap into the equity in their land without selling it for development.

While Massachusetts has taken important steps to promote infill and compact development, the State’s antiquated zoning law is a stark exception. Zoning reform is needed, but must not result in a diminution of farmers’ equity or property value without compensation. State solar policies should distinguish between solar installations that result in the permanent loss of farmland and those with minimal long-term impacts on farmland, and distinguish between commercial solar development and development intended to meet a farm’s energy needs.

Better data, mapping, and analysis of the State’s farmland resources could better inform decisions around land use policies and investments. Some work has been done to identify lands suitable for agricultural production, but the findings are incomplete. Publicly owned general lands (State, county, and municipal) are underutilized for agriculture and have not been fully inventoried. Private landowners own a great deal of farmland that is underutilized or no longer in production. A better understanding of the amount of former farmland now classified as wetlands, and the potential environmental and economic impact of

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Goals and Recommendations

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restoring some of that land to agriculture, could help inform any discussion around changes to the State Wetlands Protection Act (WPA).

Access to land in urban and suburban areas can be particularly challenging and expensive. There are often a myriad of local regulations and permitting issues a farmer has to navigate, including zoning bylaws or other regulations that specifically prohibit various farming practices. Municipal officials can lack the familiarity or know-how to deal with urban farming, or believe that the challenges of siting farms on urban land outweigh the benefits. Rooftop food production can be especially challenging; while gaining in prevalence, rooftop farming and gardening is still an emerging sector that requires more investment, research, and education.

Current State farmland programs are not designed for the typically smaller parcel size of urban farms. For instance, both the APR Program and Chapter 61A require a minimum parcel size of 5 acres. Consequently, urban farmers cannot access the tax relief provided by 61A or use the APR program to permanently protect urban farmland. Urban-specific tax incentives or abatements would be useful to encourage the use of vacant land for community gardens.

Community land trusts could be a means for providing access to land for farming in urban settings. Community land trusts are nonprofit, community-based corporations with a place-based membership and commitment to the use and stewardship of land on behalf of the local population. Community land trusts usually retain ownership of land and lease it to individuals or organizations who own the improvements they make upon the land.

As defined under M.G.L. c. 23A section 3A, Gateway Cities are midsize urban centers that anchor regional economies and for which industry was a primary driver of their economic and workforce resilience. These cities have many assets with unrealized potential, such as vacant land with existing infrastructure and strong connections to transportation networks. As such, these cities may be prime locations for focusing redevelopment of vacant land for urban farms or community gardens.

**Recommendation 3.1:** Develop a formal State farmland action plan to: (1) determine the resources needed to improve State data collection around farmland trends; (2) establish a statewide baseline of land in active agricultural production, or the process for doing so with improved data collection, and a system for tracking acres of farmland in production over time; (3) set measurable goals and benchmarks related to farmland protection, retention, and access; and (4) recommend State program spending levels to meet those goals and benchmarks. *See Recommendation 2.1 and Action 2.1.1.*

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

**Action 3.2.1:** Through the proposed State farmland action plan, task EEA with identifying land owned by the State and counties that is either in current agricultural production or suitable for agricultural production, with input from other State agencies and departments. Ensure that EOEEA, and other State agencies as needed, have adequate resources to undertake this assessment and to assist in Action 3.2. *See Recommendation 2.1.*
Action 3.2.2: For land identified through the inventory as suitable for agricultural production and as appropriate per controlling agency mission, establish a process for negotiating potential agricultural use on parcels with the appropriate State agencies.

Action 3.2.3: Create standard policies around farming State-owned land, allowing normal agricultural practices so long as they are not inconsistent with mission of the controlling agency and there is recognition of any restrictions on the parcel in question.

Action 3.2.4: Open State-owned woodlands to maple syrup production.

Action 3.2.5: Change State law or policy to enable State agencies to use leases longer than the current 5-year maximum licenses on State-owned land.

Action 3.2.6: Change State law to allow State agencies to retain and reinvest the revenues they receive from leasing farmland to farmers. Develop guidelines around lease fees.

Action 3.2.7: Change State law to give town agricultural commissions, at a town’s discretion, authority to manage and lease suitable town-owned land for agricultural use. Train agricultural commissions on how to work with town land managers to make suitable town-owned land available for leasing, and on where to find examples of model farm leases.

Action 3.2.8: Provide technical assistance to municipalities to identify suitable municipally-owned land, including parks, schools, and open land, for food production. Encourage municipalities to partner with community garden and other nonprofit urban growing groups to grow on underutilized public lands.

Action 3.2.9: Where needed, develop model contracts and leases that municipalities can use to lease city-owned land for farming. Train municipal land use managers and planners on these tools.

Action 3.3.1: Ensure that statewide zoning reform reflects the concerns of the agricultural community over potential loss of value and equity.

Action 3.3.2: Educate municipal planning boards and agricultural commissions about the use of Conservation Subdivision/Natural Resources Protection Zoning and accessory apartment bylaws as tools to promote compact development, and provide technical support to communities seeking to adopt and use these zoning tools.

Action 3.3.3: Consider State legislation to enable communities to further reduce property taxes on farmland in exchange for term easements.

Action 3.3.4: Encourage and support agricultural commissions and, in communities where there are no agricultural commissions, other municipal boards, land trusts, and farm organizations, in: educating landowners about Chapter 61/61A/61B, farmland protection and conservation programs, and land listing, linking, and matching services; inventorying current and potential farmland in town; and identifying opportunities for restoring active farming on land that has been abandoned.
Urban food production serves as hub for community revitalization

Ten years ago The Food Project, a non-profit organization that engages youth in positive change, started growing food in Lynn with young people from the city and surrounding communities. At the time, there was little to no gardening space or local food available to low-income residents in this Gateway city.

With teens leading the way, the city is now a hotspot for local, culturally appropriate foods grown in and around the city. The weekly farmers market attracts new immigrants and long-standing residents who are able to use SNAP benefits to purchase foods from their heritage. Local farmers have responded to local needs by offering specialty crops including corn fronds that had not previously been brought to market.

The Youth leaders are working with other teen groups to bring more fresh and healthy food into the city and coordinating closely with the Lynn Board of Health, community groups, and public agencies.

Related Goals and Recommendations:
Land 3.2.8, Distribution 1.3

Recommendation 3.4: Build on existing models to create preferential zoning and ordinances to support urban agriculture, with guidance from key sector experts such as beekeepers, poultry farmers, and others familiar with the particular challenges of urban farming.

Action 3.4.1: Provide technical assistance and model zoning bylaws and ordinances to encourage municipalities to support the use of land, rooftops, and unused infrastructure for urban agriculture.

Action 3.4.2: Encourage more cities to adopt Right to Farm bylaws and ordinances.

Action 3.4.3: Provide more public education on urban food production techniques in community gardens and home gardens, such as growing vegetables, composting, keeping bees, chickens, and other animals.

Action 3.4.4: Provide more public education on best management practices for urban gardening in locations with known or suspected soil contamination. Provide funding for soil testing.

Recommendation 3.5: Strengthen State farmland loss mitigation and land disposition policies.

Action 3.5.1: Enact pending legislation to ensure no net loss of land protected under Article 97 of the State constitution.

Action 3.5.2: Expand and strengthen Executive Order 193 and the Massachusetts Environmental Policy Act (MEPA). Convene a working group to develop recommendations for doing so, including how to address renewable alternative energy (e.g. solar) development on agricultural land.
**Recommendation 3.6:** Review State policies and incentives around renewable alternative energy (e.g. solar) development, to better harmonize State goals around renewable energy development and natural resource protection, including farmland.

**Action 3.6.1:** Analyze impact of EOEEA’s 2013 policy changes related to solar incentives, and develop recommendations (in conjunction with recommendations developed under Action 3.4.2) to further incentivize commercial solar development on existing infrastructure or on lands with marginal natural resource value.

**Action 3.6.2:** Develop guidance for farmers and municipal officials around solar development and the types of arrays and installation techniques that minimize the long-term impact on agricultural resources.

**Recommendation 3.7:** Keep conserved farmland in active agricultural use.

**Action 3.7.1:** Provide adequate funding for APR Program stewardship. Consider a dedicated fund for this purpose, as was proposed in the 2014 Environmental Bond. Include outreach to landowners around farm transfer and succession strategies as part of APR Program stewardship.

**Action 3.7.2:** Encourage State agencies that manage State-owned land that is currently or was formerly farmed to work with MDAR to develop management plans that allow continued farming of the land, consistent with the purpose for which the land was protected.

**Action 3.7.3:** Explore the need, cost, and interest among APR landowners in selling Options to Purchase at Agricultural Value (OPAVs) on existing APRs that do not have them.

**Recommendation 3.8:** Improve understanding among the agriculture and conservation communities of State and federal wetlands laws and regulations and their impact on farmland.

**Action 3.8.1:** Re-establish the State WPA oversight/advisory committee. Task the Committee with analyzing how farmland across the Commonwealth has been impacted by State and federal wetlands laws and regulations, and the potential impacts of restoring prior farmland to active agricultural use. Task the Committee with developing recommendations related to restoration of prior farmlands to active agricultural use and the need and advisability of statutory or regulatory changes related to the WPA’s agricultural provisions, including the 5-year production window to qualify for the agricultural exemption.

**Action 3.8.2:** Update the State *Farming in Wetlands* guide (last updated in 1996), and include new examples of situations involving the WPA agricultural exemption. Provide training to farmers and agriculture commissions on the guide and the agricultural exemption. Require conservation commission members to take a training course on the agriculture exemption.

**Action 3.8.3:** Pursue a program that would allow towns to obtain better insurance rates if conservation commission members attend trainings, similar to local planning board training discounts.
**Action 3.8.4:** Encourage greater communication and joint training, workshop presentations, and fact sheet development between Massachusetts Association of Agricultural Commissions (MAAC) and Massachusetts Association of Conservation Commissions (MACC).

**Recommendation 3.9:** Help and incentivize farmers and farmland owners to keep their land in farming as it transfers out of their ownership.

**Action 3.9.1:** Enact legislation to modify State estate tax to allow farmland to be valued according to its current use.

**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 3.9.3:** Increase funding and technical assistance for farmland succession planning and matching services through State, federal, and non-governmental organization (NGO) programs.

**Action 3.9.4:** Consider eliminating State capital gains tax on farmland that is sold to a farmer. The sale should be subject to a look-back provision, to ensure the land stays in active agriculture for a period of years.

**Recommendation 3.10:** Help farmers and farmland owners restore productive farmland without negative environmental impacts.

**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.

**Recommendation 3.11:** Reduce Chapter 61A minimum requirement to encourage farming on smaller parcels in all communities – urban, suburban, and rural.

**Action 3.11.1:** Enact legislation to expand Chapter 61A eligibility to parcels smaller than 5 acres. Consider requiring an increase in the value of production threshold on smaller parcels to ensure that those parcels are being actively used for commercial agriculture.

**Recommendation 3.12:** Encourage more land trusts and municipalities to lease land that they own to farmers.

**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.
Recommendation 3.13: Determine how to support the ability of farmers to live within reasonable proximity to their farm, helping to make their farm tenure more secure.

   Action 3.13.1: Establish a task force with MDAR, ALPC, and stakeholder representation to recommend revisions to APR policy around housing on future APRs, including ways to keep existing farmhouses with protected parcels.

   Action 3.13.2: Educate land trusts, agriculture commissions, and others involved in farmland protection about the role and value of ground leases in linking housing and farmland protection.

Recommendation 3.14: Provide improved and streamlined farm linking systems and matching services, so that farmland owners who want to sell or lease land to a farmer are easily able to do so, and farm seekers have a way to easily identify potential land for sale or lease.

   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.

   Action 3.14.2: Integrate succession planning and farmland matching into MDAR’s APR stewardship.

   Action 3.14.3: Provide State support for succession planning and land matching services. Incorporate these services more fully into the State FVEP; consider expanding eligibility for FVEP to non-farming farmland owners seeking farm transfer and succession support.

Recommendation 3.15: Ensure that commercial agriculture is viable on land protected with State-approved CRs, and allow more landowners to donate APRs.

   Action 3.15.1: Develop a more flexible CR that allows for commercial agriculture in situations where land being protected is suitable for agriculture. Educate land use attorneys and land trust staff on these terms and conditions.

   Action 3.15.2: Change MDAR policy to accept donated APRs on farmland that does not meet eligibility requirements for restrictions purchased through the program.

Recommendation 3.16: Focus the development of urban agriculture on vacant and underutilized land in Gateway Cities and other cities.

   Action 3.16.1: Focus analysis on Gateway Cities to assess the potential for those cities to support both short- and long-term urban agriculture on vacant and underutilized land. Work with city planners to inventory these municipalities’ surplus land and prioritize based upon criteria developed in the action plan as called for in Recommendation 2.1. Consider using Health Impact Assessments (HIAs) to evaluate soil remediation on urban land.

   Action 3.16.2: Advocate for dedicated funding conduct soil testing, and import or remediate soil on prioritized land in Gateway Cities and other cities. Consider using the MEPA process to secure clean soil from development projects that could replace contaminated soils in urban locations.
**Action 3.16.3:** Provide technical assistance to Gateway City municipal officials on creating mutually beneficial lease agreements with urban farmers, both commercial and not-for-profit.

**Recommendation 3.17:** Develop community land trusts in Gateway Cities and other municipalities as a means to provide greater access to and long-term community control of land and to provide farmers the opportunity to gain equity in their farms. See the Greater Boston Community Land Trust Network or Dudley Street Neighborhood Initiative for examples.

**Action 3.17.1:** Host information sessions and provide other technical assistance for communities interested in forming community land trusts, involving existing land trusts as well.

**Recommendation 3.18:** Provide more education and incentives for developers and municipalities to incorporate food production opportunities into new and redeveloped urban properties.

**Action 3.18.1:** Support State and municipal tax incentives to encourage short- and long-term use of urban land and buildings for food production, such as for the installation of green roofs that include food production and the transformation of vacant lots into community gardens.

**Action 3.18.2:** Research production methods for rooftop crops, including minimizing environmental contamination.

**Action 3.18.3:** Provide education and technical assistance to builders, developers, and municipal building authorities on green roof installation and maintenance, edible landscaping, and other alternative methods for growing food in an urban environment, including living walls, vertical greenhouses, hydroponics, and aquaponics.

**Recommendation 3.19:** Encourage the creation and maintenance of local community gardens within walking distance of low-income neighborhoods.

**Action 3.19.1:** Educate municipal officials and citizen advocates about the availability of State funds for this purpose, including Local Acquisitions for Natural Diversity (LAND), Parkland Acquisitions and Renovations Program (PARC), Community Forest Stewardship Implementation, and Urban Agriculture.
Land Goal 4

Farmers will be supported in contributing to a healthy environment.

Massachusetts farmers steward about 523,517 acres of cropland, pasture, wetlands, and woodlands that filter water, reduce flooding, recharge aquifers, and provide year-round habitat for many species of fish and wildlife and stopovers for migrating birds. Woodlands, pasture, hay fields, and cropland not tilled annually also act as a carbon “sink,” sequestering carbon dioxide and helping to curtail global warming. Farmers are important caretakers of our natural resources, and should be supported in and recognized for this stewardship role.

While State and federal conservation programs provide cost-share assistance for practices around soil health, nutrient management, water quality and quantity, energy efficiency and renewable energy, and other conservation objectives, there is not enough technical assistance available through USDA-NRCS or conservation districts to educate farmers and landowners about these programs, and to do the planning to implement contracted practices. Many smaller-scale farmers, as well as urban and beginning farmers, are not aware of the types of assistance available. Funding for these programs fluctuates yearly, and changes in the last Farm Bill to the federal “regional equity” may result in fewer federal conservation dollars to Massachusetts.

Carbon markets may offer potential “green” income to farmers. Both public and private markets continue to develop, but on-farm carbon sequestration has been difficult to quantify. Further research is needed to understand how Massachusetts farms might develop quantifiable offset projects. See Inputs Goals for more on healthy environment-related recommendations and actions.

Recommendation 4.1: Enable farmers and farmland owners to make full use of State and federal conservation programs.

Action 4.1.1: Educate farmers, including beginning and urban farmers about State and federal conservation programs.

Action 4.1.2: Expand and improve technical assistance to farmers and farmland owners to assist with conservation planning and accessing State and federal conservation programs. Advocate for increased State and federal funding for this purpose.

Action 4.1.3: Expend all existing bond authorization for MDAR’s Agricultural Environmental Enhancement Program (AEEP) by 2018, and increase funding for AEEP in future bond bills.

Action 4.1.4: Develop recommendations on how the federal Conservation Stewardship Program could be improved to better incentivize conservation practices on farmland in Massachusetts.

Action 4.1.5: Ensure that the federal “regional equity” provision of the Farm Bill is being fully implemented, and track its implementation.
Urban growers seeking land to farm face high costs

Not all farms in Massachusetts are found in idyllic rural settings. Thousands of people, many of them immigrants and low-income, tend less-than-one-acre farms and gardens in Springfield, Holyoke, Lawrence, Lowell, Boston, and other cities.

There is an increased demand for local food in cities but many roadblocks prevent communities from gaining access to the land and materials to grow. In Boston, a vacant lot that gathered trash for 30 years was transferred to a non-profit farming organization after new zoning rules were passed. It then took 18 months, and $300,000 in start-up costs to get the farm running.

A non-profit in Springfield is running into similar challenges with a parcel purchased from the city in 2014. Luckily, pro bono legal help is enabling the non-profit to avoid some substantial expenses, like a water hook-up fee, and their total outlay will be closer to $80,000.

Related Goals and Recommendations:
Land 3.15.

Recommendation 4.2: Expand private and public markets for carbon credits and water quality credits to provide additional revenue sources for farmers while protecting the environment.

Action 4.2.1: Add carbon sequestration by agriculture to the Massachusetts Annual and Three-Year Greenhouse Gas Emissions Inventories.

Action 4.2.3: Research opportunities for Massachusetts farmers and farmland owners to access public and private carbon markets and establish a regional carbon market for farmers.

Recommendation 4.3: Research the relative greenhouse gas emissions from agriculture and from commercial or residential development, to make the case that protecting farmland is a viable strategy for reducing g
Inputs

Goals and Recommendations

Food system inputs include all the components necessary to produce food, among them soil, fertilizers, energy, water, seeds, pesticides, pollinators, and land. Because farmland has so many unique issues, it is treated in a separate section. Inputs can represent the beginning and end of the food system, with food waste, washwater, and other organic waste being both end products and then being redirected into the food system as compost, or animal feed, or converted to energy through anaerobic digestion. The costs of inputs are critically important to farm viability. By reducing the costs of inputs, food system businesses have more dollars to reinvest in their operations, remain viable, and keep the prices of their products competitive.

Food system inputs also have a direct effect on our environment – energy sources, water usage, and farming practices all have an ecological impact. The Commonwealth’s constitution provides the people of Massachusetts with the right to clean air and water, and declares natural resource protection, including agricultural lands, to be a public purpose. This focus will be even more important to ensure continued success and viability in light of climate change.

The goals, recommendations, and actions in this section provide a roadmap for how farmers and other food system businesses can reduce the costs of inputs, while ensuring that externalities such as pollution and waste are minimized. A common theme through the recommendations is that incentives, technical assistance, and grant programs need to be better aligned and funded in order to meet the needs of the food system. Recommendations include reducing surplus food, maximizing food donation, and supporting the development of anaerobic digestion facilities and encouraging sites for composting. Recommendations also include actions to improve the health of farmland soils, practices that conserve water and reduce runoff, and supports for reductions in energy use and developing new sources of renewable power.
Input Goals

Goal 1: Less food will be wasted.

Goal 2: Soil health will be improved.

Goal 3: Sufficient supplies of clean water will be available for food system needs, and water pollution will be reduced.

Goal 4: Exposure to toxic chemicals and other hazardous materials will be reduced to protect human health, pollinators, and the environment.

Goal 5: Energy efficiency and the use of renewable energy will be increased, while energy costs will be reduced.
Inputs Goal 1

Less food will be wasted.

According to the Massachusetts Department of Environmental Protection (MassDEP), food waste and other organic material make up approximately 25 percent of all waste disposed of every year\(^1\). This translates into over one million tons of compostable waste landfilled annually, of which 900,000 tons is food. In 2014, Massachusetts implemented the Commercial Food Waste Disposal Ban for facilities that dispose of one ton or more food waste per week. That waste is now banned from landfills and municipal waste combustors, and work is underway to divert the organic waste to a variety of uses. A key challenge in doing so is to ensure that this food surplus is directed to where it is most needed, ideally addressing food insecurity. Food waste that remains could be used as animal feedstock, turned into compost, or turned into energy through anaerobic digestion. The U.S. Environmental Protection Agency’s (EPA) Food Recovery Hierarchy is a useful guide on how best to divert surplus foods.

From a social equity and environmental standpoint, policies and incentives should be better aligned to maximize the use of food surplus at the highest level of the Food Recovery Hierarchy before moving to the next, lower level. As the hierarchy delineates, reducing surpluses and food waste at the outset must be the top priority, followed closely by ensuring that all surplus food suitable for human consumption goes toward hunger relief. Directing the remaining food waste to animal feed, and finally to composting and anaerobic digesting for energy production comprise the next two priorities. The landfilling of food waste should always be the last resort.

**Recommendation 1.1:** Effectively support the Massachusetts Commercial Food Waste Disposal Ban.

- **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 1.1.3:** Explore expanding the statewide Commercial Food Waste Disposal Ban to phase in smaller food waste generators and residential food waste over time.

**Recommendation 1.2:** Prioritize reducing food waste and ensure that all stakeholders have the resources and technical assistance needed to affordably reduce food waste.

- **Action 1.2.1:** Initiate a statewide food waste reduction campaign similar to the United Kingdom’s “Love Food Hate Waste” campaign or California’s “Food is Too Good to Waste” campaign to provide consumer education and highlight the environmental benefits of reducing food waste.
- **Action 1.2.2:** Align State initiatives with the EPA’s and USDA’s national goal to reduce food waste by 50 percent by 2030.

Creative cooking turns food donations into meals for homeless people

Friends of the Homeless (FOH) in Springfield provides critical services, including serving over 150,000 meals every year. FOH serves three meals a day, seven days a week. Their licensed kitchen operates 365 days a year. On a typical day, 180 dinners are served. FOH operates with the support of dedicated partners and hundreds of volunteers. Food is donated by Project Bread and the Food Bank of Western Massachusetts, with frequent truck deliveries from Rachel’s Table and Performance Food Group.

The kitchen director is highly creative and adaptable, incorporating unexpected food deliveries into nutritious, culturally-appropriate, and delicious meals. The commercial kitchen also doubles as a training center, teaching skills and providing jobs to clients. Over the long term, Executive Director Bill Miller would like to forge new partnerships with local food producers, increasing the offerings of local fresh food and supporting local businesses at the same time.

Related Goals and Recommendations: Inputs 1.3, FASH 6.1, and 6.2, and Workforce 6.2

Action 1.2.3: Launch an educational campaign to teach consumers about when a product is still safe to eat, even past the expiration or sell by date.

Action 1.2.4: Clarify expiration or sell by dates, and reduce the number of foods that require a date label, using information from Harvard Law School’s Food Law and Policy Clinic.2

Action 1.2.5: Support increased utilization of food waste tracking/auditing systems at large generators of food waste such as institutions and grocery stores, to improve management practices and better understand the amount of food waste generated and diverted.

Action 1.2.6: Encourage and support the development of innovative technology to efficiently separate food from packaging so more food can be composted or turned into energy.

Recommendation 1.3: Increase food donations and support stakeholders addressing food insecurity.

Action 1.3.1: Increase outreach and education on food donation opportunities, including the Bill Emerson Good Samaritan Food Donation Act, which provides liability protections for donators.

Action 1.3.2: Implement a State tax credit for farmers and others who donate surplus food. Currently, there is no State tax credit for food donation and only C-corporations are eligible for the federal enhanced tax credits and most Massachusetts farmers do not meet these criteria.3

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Action 1.3.3: Explore and implement financial incentives and service fees to support food donation distributors, many of which rely exclusively on charitable donations to fund their work.

Action 1.3.4: Increase refrigerated storage capacity at food pantries through public funding or connections with under-used, existing, nearby facilities to allow food pantries to accept more donations of fresh, perishable foods.

Action 1.3.5: Increase participation in existing education and training around the handling of fresh food for those donating, distributing, and serving the food. Best management practices are being developed through a collaborative effort of the EPA, Massachusetts Department of Public Health (DPH), and MassDEP, with support from Harvard Law School’s Food Law and Policy Clinic and the Center for Ecological Technology (CET).

Action 1.3.6: Increase education and consistent implementation of public health regulations regarding food donation.

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.

Recommendation 1.4: Maximize anaerobic digestion and industrial uses for food waste after higher steps in the EPA’s Food Recovery Hierarchy are exhausted.

Action 1.4.1: Facilitate reuse of non-hazardous food processing wastewater

Action 1.4.2: Maximize opportunities for anaerobic digestion at municipal wastewater treatment facilities that are designed to handle food waste materials.

Action 1.4.3: Develop a market for solids and liquids produced during the anaerobic digestion process.

Action 1.4.4: Support infrastructure development for handling and preparing food waste for anaerobic digestion.

Rutland farm converts manure to power
Brothers Randy and Brian Jordan are 5th generation farmers in Rutland, Massachusetts. Jordan Dairy Farms is home to 800 head of Holsteins and one Big Bertha, and became the first farm in Massachusetts to produce energy using anaerobic digestion, turning the organic matter in their cow manure into power. Each day, they produce enough clean energy to offset 5,500 pounds of CO2 emissions. There are now five farms that use anaerobic digestion to produce energy in the state.

Related Goals and Recommendations:
Inputs 1.4
digestion, including packaged foods and industrial waste water.

**Action 1.4.5:** Create a network of food scrap transfer stations to provide more efficient delivery of food waste to anaerobic digestion facilities.

**Action 1.4.6:** Advance and incentivize smaller-scale anaerobic digestion technology installations for farms, schools, supermarkets, and at other sites such as State prisons and colleges and universities.

**Recommendation 1.5:** Maximize the composting of food waste after the steps in the EPA’s Food Recovery Hierarchy are exhausted.

**Action 1.5.1:** Expand the variety of composting site locations, capabilities (including technologies to separate packaging as well as livestock carcasses), and scales able to handle the range of compost materials.

**Action 1.5.2:** Provide technical assistance to increase the prevalence of community scale composting operations, creating high-quality and affordable compost, particularly near farms.

**Action 1.5.3:** Support the development of equipment and processes to separate packaging from food waste.

**Action 1.5.4:** Train food scrap generators to avoid contamination of food waste.

**Action 1.5.5:** Develop compost sites that reduce nuisance conditions, while still producing a viable soil amendment product from the process.

**Action 1.5.6:** Create a State procurement preference for Massachusetts-produced compost. State contracts and other large purchasers should specify the type and quality of compost for varying uses (e.g., athletic fields, holding slopes).

**Action 1.5.7:** Include Massachusetts-produced compost in marketing efforts for locally produced agricultural products.

**Action 1.5.8:** Provide technical assistance to small-scale composters to help prepare and package compost so it is ready for distribution and retail sale.

**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.

**Action 1.5.10:** Assist farmers in the conversion of on-farm and local food wastes to be converted into animal feed where appropriate.
Inputs Goal 2

Soil health will be improved.

Soil fertility is critical to good crop yields. The Commonwealth is endowed with high-quality, prime farmland throughout the State. Healthy soils provide many benefits in addition to greater yields – they require less fertilizer and less irrigation, and they help to minimize runoff. Maintaining healthy soils is also an important climate mitigation and adaptation strategy, as healthy soils sequester carbon and are more tolerant of both drought and severe precipitation events. So called “carbon farming” recognizes and rewards farmers for management actions that have environmental benefits, such as reduced water use and runoff.

Soil erosion can lead to a loss in soil fertility, as well as to contamination of adjacent water bodies with nutrients and solids carried in runoff. Over-application of nutrients, in addition to being an unnecessary expense, can also result in polluted water, exacerbating the aquatic invasive species problem. In urban settings, soil contamination can limit opportunities to expand production and requires assessment, remediation, and, in some cases, soil replacement.

USDA-NRCS, UMass Extension, UMass Amherst’s Department of Resource Economics, MACC, and other technical assistance providers assist farmers in nutrient management planning and will be integral in providing support for implementing this plan’s recommendations. Recently, MDAR regulations on plant nutrient use have been released and will apply to agricultural lands in December 2015. These regulations will require farms ten acres or larger to develop and follow nutrient management plans, which will result in a new demand for new nutrient management planning. A comprehensive and coordinated technical assistance effort will be needed to help farmers meet this new regulatory requirement.

Recommendation 2.1: Monitor and manage soil for optimal health, and ensure the optimal application and management of nutrients.

- **Action 2.1.1:** Expand nutrient management planning and implementation technical assistance, especially in light of the new regulatory requirements. The USDA-NRCS, UMass Extension, MACC, and other technical assistance providers should provide increased resources and expertise.

- **Action 2.1.2:** Increase soil testing on land used for urban farming where food is grown in soils of unknown quality. Cities could use Boston’s soil safety protocol as a model.

- **Action 2.1.3:** Explore with MassDEP streamlining the assessment and remediation of contaminated soil on land used for urban farming.

- **Action 2.1.4:** Develop a resource guide for urban farming soil remediation that includes best practices, applicable regulations, and funding sources. City, State, federal agency programs should be included in the guide.

- **Action 2.1.5:** Municipal and regional planning staff should collaborate with urban farms to secure EPA Brownfields Assessment Grants, EPA Brownfields Cleanup Grants, and PARC monies.
Goals and Recommendations

Action 2.1.6: Continue to collect data on carbon levels in soil to identify areas that need interventions and to track progress. Carbon data is currently being collected by the nonprofit organization Soil Carbon Coalition.4

Recommendation 2.2: Provide tax benefits or other financial incentives to increase voluntary farmer utilization of certain best practices to support soil fertility.

Action 2.2.1: Provide additional financial support beyond what NRCS now provides and expand markets for cover crops. UMass Extension is researching cover crops and can help identify new markets such as using grain for the craft beer industry.

Action 2.2.2: Research the feasibility of offering incentives, such as property tax reductions, to farmers and landscapers for maintaining soil organic matter.

Action 2.2.3: Explore carbon credits as an additional tool for implementation of the Massachusetts Global Warming Solutions Act,5 a framework for reducing heat-trapping emissions to mitigate the impacts of climate change.

Recommendation 2.3: Ensure optimal application of fertilizers and soil amendments to soil.

Action 2.3.1: Encourage the appropriate use of fertilizers and expand nutrient management technical assistance to provide guidance to farmers on the exact types and amounts of nutrients needed.

Action 2.3.2: Provide education and guidelines for alternatives to typical soil amendments, such as wood ash and paper fibers. There needs to be greater availability of information about these amendments and guidance from MDAR on their proper utilization.

Action 2.3.3: Expand public/private markets for Massachusetts-produced compost.

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Inputs Goal 3

Sufficient supplies of clean water will be available for food system needs, and water pollution will be reduced.

Unlike California and its historic drought, Massachusetts currently receives sufficient precipitation to meet most needs. As a result, Massachusetts has so far not had to deal with severe droughts and the political disputes and legal challenges over water allocations and water rights that can accompany such situations. Although the Massachusetts receives sufficient precipitation for our current needs, irrigation is playing an increased role in Massachusetts agriculture, with the number of farms using irrigation doubling between 1974 and 2012. The cranberry bogs in Plymouth County, in particular, account for the majority of lands irrigated. With nursery and greenhouse crops increasing, UMass Extension expects to see increasing amounts of irrigation. In addition, water is essential for several parts of food processing, and a significant quantity of water is used for washing, cleaning, running equipment, and sanitizing food processing facilities.

Despite the State’s positive situation relative to water availability, there are warning signs and concerns about scarcity and hard-to-manage excess in future years. Massachusetts has three basins or sub-basins – the Ipswich, Tenmile, and Weymouth & Weir – where water withdrawals are approaching the safe yield limit, which basins must not exceed in order to maintain sustainable water levels for human and ecological needs. And the expected impacts from climate change and more frequent and severe storm events could result in a cycle of too much precipitation at times, followed by periods of drought. Coupled with higher overall temperatures and increased evaporation rates, additional irrigation may be needed to maintain current production and current crops.

Human activities directly and indirectly impact the natural environment. Farming and land management practices are no exception. Because farmland covers a significant amount of the Commonwealth’s land, what happens on a farm affects neighboring water bodies, habitats, and ecological systems. Nutrients such as nitrogen and phosphorus from fertilizers, compost, and manure can find their way into surface and groundwater and can cause water pollution.

Of course, the food system is just one source of water impacts. Others include municipalities, industrial processes, the transportation network, septic systems, lawn care products, and pet waste, which are all sources of pollution that affect human and environmental health. While great strides have been made to reduce point source pollution (that can be traced to a pipe), non-point sources (like fertilizer runoff) are diffuse and, historically, less regulated.

Any new regulatory approaches to addressing non-point source pollution must be equitable in how they are applied in order to ensure that farmers do not disproportionately bear the burden for improving

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water quality. Technical assistance must be provided to help regulated entities prepare for and comply with new and existing regulations. Recognizing the environmental benefits that farms provide is important, as is providing incentives, support, and guidance on how even greater benefits can be realized through land stewardship and effective management practices. See Land: Goal 4 for more information and related recommendations.

Recommendation 3.1: Research existing and anticipated water needs for maintaining and growing the food system.

   Action 3.1.1: Develop a baseline for how much water is currently being used by the agricultural sector, research likely future needs given projections related to climate change, and target policies based on research findings.

Recommendation 3.2: Provide increased incentives and technical assistance to farmers and other food system businesses for adopting water conservation practices.

   Action 3.2.1: Develop and disseminate guidelines on voluntary on-farm water conservation best practices.

   Action 3.2.2: Provide the resources and technical assistance needed to help farmers adapt to increased impacts from flooding, drought, and other expected impacts of climate change.

   Action 3.2.3: Increase utilization of USDA-NRCS’ EQIP funds by allowing regionally-appropriate practices and providing assistance with the application process.

   Action 3.2.4: Increase municipal solutions for more water conservation, including targeted property owner and homeowner education, in urban, suburban, and rural areas.

   Action 3.2.5: Provide technical assistance to food processors on water conservation practices and technologies.

   Action 3.2.6: Ensure water conservation practices are called for in lease agreements for State- and town-owned land used for agriculture.

   Action 3.2.7: Create demonstration areas or pilot projects where cisterns or other water catchment systems are incorporated into the farm landscape and farming system, particularly in urban environments. Provide technical assistance to size the water harvesting devices and incentives or grants for incorporating water harvesting techniques.

Recommendation 3.3: Reduce water pollution from the food system, especially through incentives and increased technical assistance.

   Action 3.3.1: Expand research to identify and fill gaps in the literature about the level of non-point source water pollution that agricultural activities can generate.

   Action 3.3.2: Provide more resources and introduce regionally-appropriate program reforms to improve water quality. The NRCS, UMass Extension, and nonprofits should provide additional technical assistance and resources.
**Action 3.3.3:** Provide technical and financial support to farmers for irrigation and waste water testing, to assist in compliance with the U.S. Food and Drug Administration’s Food Safety Modernization Act (FSMA) regulations and USDA’s Good Agricultural Practice (GAP) certification.

**Action 3.3.4:** Provide more technical support to urban farmers on water quality impacts from urban farming.

**Action 3.3.5:** Include a representative from the urban farming sector on the USDA-NRCS’ State Technical Committee to represent the particular needs of the Massachusetts urban farming sector.

**Action 3.3.6:** Research the impact that urban agriculture has on stormwater runoff reduction and treatment.

**Action 3.3.7:** Develop a model ordinance to exempt urban farms from sewerage fees.

**Action 3.3.8:** Streamline water connection requirements for urban farms, eliminating unnecessary requirements and reducing connection costs.

**Action 3.3.9:** Change municipal ordinances to allow and encourage water catchment systems and other green infrastructure on urban farms.

**Action 3.3.10:** Consider changes to MassDEP’s Groundwater Discharge Permitting regulations that would exempt farms from needing a groundwater discharge permit for farm waste provided they adhere to MDAR and USDA-NRCS best practices.

**Action 3.3.11:** MassDEP and MDAR should continue to implement the “Regulatory Certainty” effort.
Inputs Goal 4

Exposure to toxic chemicals and other hazardous materials will be reduced to protect human health, pollinators, and the environment.

Chemicals play an important role in many facets of the food system – from cleaning equipment to targeting pests. Pesticides, solvents, plastics, and tires are just a few of the products that are widely used in the food system, but are potentially dangerous. Some of these materials are inherently toxic, while others can become toxic by improper disposal, such as through burning. The proper application, storage, and disposal of these materials is essential to protect human and environmental health, and the health of the food system. In some cases, less- and non-toxic alternatives exist. In other cases, more education about the proper use of chemicals, better compliance with existing regulations, and additional research is called for to understand and minimize unintended impacts from the use of these products.

The food system depends on natural and managed pollination for many of its crops, but pollinators are under stress from a variety of causes including pests, habitat loss, and pesticides. At the extreme, Colony Collapse Disorder\textsuperscript{10} poses a direct threat to a thriving pollinator population. While more research is needed to understand the various factors that are stressing pollinators, increasing and protecting pollinator habitats, and reducing pollinator exposure to pesticides is prudent. The Massachusetts Farm Bureau has brought together pollinator stakeholders to confront the threats facing both native and managed pollinators. The Pollinator Stewardship group is developing recommendations for an integrated approach to protect pollinators.

Recommendation 4.1: Ensure optimal application of pesticides to reduce harm to humans and the environment.

Action 4.1.1: Provide more education and technical assistance to homeowners and landscapers for proper use of pesticides through local boards of health.

Action 4.1.2: Anticipate increased pest issues in light of climate change impacts. UMass Extension should monitor pest issues experienced in warmer climates that may migrate to Massachusetts under warmer and changed climate conditions.

Action 4.1.3: Increase UMass Extension resources for providing integrated pest management (IPM) technical assistance and education to farmers, homeowners, and other pesticide users.

Recommendation 4.2: Make recycling and disposal of plastics, tires, and other potentially hazardous chemicals easy and affordable for farms.

Action 4.2.1: Educate farmers to make sure they are aware that burning chemicals and plastics is illegal, and impacts human and environmental health.

Action 4.2.2: Make it easier to dispose of hazardous chemicals through municipal and regional collection programs.

Action 4.2.3: Promote tire stewardship legislation and education to safely dispose of tires.

Action 4.2.4: Work with towns, cities, and solid waste districts to create an agricultural plastic recycling system.

Recommendation 4.3: Protect the habitat and health of pollinators critical to the food system.

Action 4.3.1: Increase education and technical assistance to ensure the health of pollinators, including education for beekeepers, pesticide applicators, farmers, landowners, municipalities, and regulators.

Action 4.3.2: USDA-NRCS should strongly encourage plantings and management practices that create and/or preserve pollinator habitat, including on property edges, and through cover crops.

Action 4.3.3: Re-examine EOEEA’s Prohibited Plant List for benefits that they may provide to pollinators and, in light of expected climate change impacts, and make adjustments to the list as appropriate.

Action 4.3.4: Revise planting guidelines in local bylaws, subdivision regulations, and elsewhere to support pollinator habitats.

Action 4.3.5: Conduct research and education to establish guidelines on the optimal volume of managed pollinators on a site that can be balanced with native populations.

Action 4.3.6: Expand land conservation programs to protect pollinator habitat, including on smaller, urban parcels.

Action 4.3.7: Monitor research findings on the quantity, use, and impacts of pesticides, including neonicotinoids, a systemic pesticide, in order to shape effective public policy interventions.

Action 4.3.8: EPA must improve pesticide labels to include information about potential risk to bees.

Action 4.3.9: Implement the recommendations from the Pollinator Stewardship group.

Upgrade in maple sugaring equipment provides substantial energy savings

Ed Caron runs Caron Farm, producing maple syrup and operating a small sawmill, in the Town of Leyden. He’s been making syrup for “forever” – just about all of his 75 years. “I’ve been doing this since I was a boy and my folks did it before.” In 2014, Ed worked with MDAR’s Farm Energy Program and with the Center for EcoTechnology, successfully applying for funding from MDAR and NRCS to upgrade his maple sugaring equipment. He replaced his two old evaporators with a single, wood-fired, high efficiency gasification system – saving an astonishing 40 cord of wood, 500 gallons of oil, and 126 gallons of propane a year (estimated). Besides saving money on fuel and reducing his environmental footprint, he’s saving time. What used to take him and another person 10 – 12 hours for boiling now takes closer to six or seven hours for a single person. And he’s not done with upgrades; he’s now looking into solar photovoltaic options to use clean renewable energy from the sun to help power his operation.

Related Goals and Recommendations: Inputs 5.1.1, 5.2

Energy efficiency and the use of renewable energy will be increased, while energy costs will be reduced.

Energy is a critical and expensive input for all sectors of the food system. From powering tractors to heating greenhouses and firing ovens, energy is indispensable. Electricity, heating oil, natural gas, diesel and motor fuel are the primary energy sources in the food system. Each has its own markets, generators, suppliers, distributors, and regulatory systems. Each also has its own pricing structure and emissions profile. Every dollar spent on energy costs by food producers is one less dollar going to profits or to other investments.

Energy usage can contribute greenhouse gas emissions to our atmosphere, fueling climate change. The Commonwealth has set ambitious targets under the Global Warming Solutions Act to reduce our State’s greenhouse gas emissions, and thus every sector must be scrutinized for emissions reduction opportunities. We are now leading the country in energy efficiency programs and policies, and are installing significant new solar, wind, and other clean energy facilities.

While food production and processing consumes significant amounts of energy, there are also increasing amounts of renewable energy through solar thermal and solar photovoltaic, wind, and anaerobic digestion facilities being incorporated into our food system. Much of this distributed generation powers on-farm and on-site operations, while also supplying clean energy to the electrical grid. In this way, farmers and others are generating energy, reducing pollution, supplementing their income and reducing energy demand and emissions.

Despite the growth of energy efficiency and renewable energy investments in the agricultural sectors, barriers to wider-spread adoption remain. Barriers include uncertainty over financial incentives, State and local regulations, and the uncoordinated and complicated landscape of the energy sector.

Recommendation 5.1: Reduce the complexity of navigating energy options for all areas of the food sector.

  Action 5.1.1: Increase funding to the MDAR’s Farm Energy Program to meet unmet demand. MDAR has been allocating $150,000 per year in State funds; increasing the State allocation to $350,000, as authorized in the environmental bond, would better help meet demand.

  Action 5.1.2: Modify EOEEA’s Farm Energy Discount Program to require all brokers and suppliers to provide a ten percent discount to farmers on electricity and natural gas bills

  Action 5.1.3: Maximize partnership opportunities with federal programs such as those at USDA-NRCS, USDA’s Farm Service Agency, and U.S. Department of Agriculture Rural Development that can and have provided funding and technical assistance associated with energy conservation and renewable energy investments.

Recommendation 5.2: Increase energy efficiency throughout the food system and make it easier for the end users/adopters to participate and finance energy efficiency upgrades.
**Action 5.2.1:** Encourage greater consistency and communication across utility companies’ energy efficiency programs (including municipal utility companies).

**Action 5.2.2:** Allow agricultural and food businesses to use any applicable incentive payments toward the up front costs of financing energy efficiency projects to reduce the out-of-pocket expenses at the front-end of projects.

**Action 5.2.3:** Expand monthly installment payment programs (on-bill financing) through utilities to increase efficiency upgrades for natural gas and other fuels.

**Action 5.2.4:** Support the expansion of “upstream programs” where utilities offer energy efficiency rebates and incentives to distributors and manufacturers, rather than to customers. These programs reduce the cost premiums of more efficient technologies, making them competitive with less efficient technologies. By taking this approach, economies of scale can be realized, leading to more widespread adoption of efficient technologies compared to programs that target the end-user.

**Action 5.2.5:** Create a funding mechanism for energy efficiency incentives, such as a revolving loan fund.

**Action 5.2.6:** Target energy efficiency and renewable energy technologies support and technical assistance for food processors and controlled environment farming operations that use significant amounts of energy.

**Action 5.2.7:** Integrate energy efficiency early in farm or other food system infrastructure building design processes through performance contracting, which allows energy savings to pay for the cost of retrofits and energy upgrades, and retro-commissioning, which tests a building’s energy system and identifies where improvements can be made.

**Recommendation 5.3:** Increase the ease of installation and amount of renewable generation in all sectors of the food system to provide economic and environmental benefits.

**Action 5.3.1:** Raise the net metering cap for investor-owned utilities to increase the potential for cleaner, local energy generation.

**Action 5.3.2:** Develop a revolving loan fund for farm and food business renewable energy projects to provide funds up front to design and build renewable energy projects, removing a significant barrier to expansion.

**Action 5.3.3:** Support the dual use of land for agriculture and renewable energy systems where compatible for lands with an agricultural preservation restriction or enrolled in Chapter 61A. For example, solar panels located high off the ground and spread apart can be compatible with farming operations, including animal grazing.

**Action 5.3.4:** Explore an exemption for community energy projects that provide energy to multiple users. Lands under APRs, Chapter 61A, and those that qualify for the agricultural zoning exemption under MGL chapter 40A3 could support additional, larger renewable energy projects so long as the project is sited off of prime farm soils and doesn’t negatively impact future farm productivity.
Action 5.3.5: Ensure a consistent and predictable approach to siting energy facilities on farmland by State agencies. State and quasi-State agencies that regulate and support the energy and farm sectors (DOER, MDAR, MassDEP, and Massachusetts Clean Energy Center (MassCEC) should hold technical sessions that include a wide array of stakeholders, including farmers, municipalities, and developers to reconcile conflicting approaches.

Action 5.3.6: Support implementation of a smart grid to improve the efficient allocation of electricity and to provide more resilience to blackouts and other disruptions to electricity service.

Action 5.3.7: Provide agriculture-specific recommendations to DOER and MassCEC on including renewable thermal technology, including biofuels, in EOEEA’s Alternative Energy Portfolio Standard Programs

Action 5.3.8: Use solar thermal as a low-cost greenhouse heating option or as supplemental heat source. MassCEC provides incentives for this and they will soon be included in the Alternative Energy Portfolio Standard Programs being developed by EOEEA.

Action 5.3.9: DOER should consider offering year-round funding for rural electrification projects, rather than through bid solicitations.

Action 5.3.10: Explore the feasibility of allowing farmers to pool resources to fund energy projects to share interconnection and upgrade costs.

Action 5.3.11: Explore options for expanding three-phase power to rural communities to spur energy development.

Action 5.3.12: Improve the efficiency of food transportation routes by mapping existing local food distribution and recommending optimized distribution routes. Regional planning agencies and metropolitan planning organizations could provide this research and guidance.

Real Pickles runs an energy-efficient, cooperative processing business

Greenfield’s Real Pickles is a real success story and a model for increasing energy efficiency and the use of renewable energy. Founder Dan Rosenberg and his wife Addie Rose Holland have run their business with social and ecological responsibility always in the forefront. Founded in 2001, their delicious, northeast-grown and -distributed fermented vegetable business outgrew its space at the Western Massachusetts Food Processing Center (WMFPC) in 2009 and moved just across the street, with the owners converting a century-old building into a 100% solar-powered, energy-efficient space.

Key elements of their energy-efficient production space include super-efficient lighting, an on-demand, tankless, gas-powered water heater, and a high-efficiency walk-in refrigerator which uses outside air in the colder months. In 2012, more converting was underway, as Dan and Addie grappled with how to continue to grow their popular business without selling it to a large food corporation, as often happens with successful natural food businesses. In late 2012, Dan and Addie formed a worker-owned cooperative along with staff members, and financed the cooperative’s purchase of the business with a very successful community investment campaign that raised a half-million dollars.

Related Goals and Recommendations: Inputs 5.2
FARMING

Goals and Recommendations

Massachusetts has a vibrant and growing agricultural sector. More than 7,000 farms produce vegetables, fruits, grains, meat, and dairy products that contribute to the State’s economy, provide healthy food to residents, and conserve open space and natural resources. But in our State, a relatively short growing season, very expensive land, and a challenging regulatory system place significant constraints on the growth of farms and agricultural businesses.

This section addresses these challenges through goals, recommendations, and proposed actions that improve support for educational, regulatory, and financial approaches and strategies. Education, research and outreach are needed to improve management practices that will help farmers extend the growing season, produce crops more efficiently, and protect natural resources. On the topic of regulations, changes to the regulatory structure are proposed to safeguard public health and the environment without over-burdening farms to the point where they can no longer compete economically. And in finance, increased public and private investments are proposed so that farms can meet the growing demands for their products while still remaining competitive.
Farming Goals

**Goal 1:** Farmers will be supported by a strong network of research, educational, and technical assistance.

**Goal 2:** Farming regulations will support the growth of agriculture.

**Goal 3:** Farms will have financial and business planning support.
Farming Goal 1

Farmers will be supported by a strong network of research, educational, and technical assistance.

There is a need for more informational and educational services for farmers. For farms to be financially sustainable, farm business operators need the latest information about farming techniques – for vegetable and fruit crops, livestock, and seafood – as well as the topics of post-harvest processing, whole farm management, waste management, energy, land use, nutrition, food safety, soil and water resources, community development and preservation, and municipal, State, and federal regulations. Improved educational assistance is also needed to strengthen the important connections between production agriculture and other food-producing activities, including home gardening, community agriculture, and urban agriculture.

UMass Extension has a long history of outreach to bring research-based, unbiased information derived from research at UMass and other land-grant universities to a broad range of audiences in Massachusetts. Further, the Massachusetts Agricultural Experiment Station at UMass Amherst coordinates funding to advance science in disciplines related to agriculture, food and natural resources. At one time, the UMass Extension program was the primary source of information for farmers in Massachusetts, with agents in every county who visited farms and provided direct assistance. Given its background, UMass Extension is a natural candidate to be the primary provider of the education and technical assistance that is needed by Massachusetts farms to be competitive today.

At the same time, Massachusetts has an extensive set of additional agricultural education and technical assistance providers, which include nonprofits, public and private educational institutions, trade associations, and others, that have developed excellent curricula and tools for specific sectors. Yet there are some duplications and gaps among the resources offered by these providers. Therefore, a facilitated network of education and service provider organizations could help strengthen their collective resources.

Going forward, as the needs of the agricultural community change, Massachusetts’ educational and technical assistance capacity must change and develop along with them. Accomplishing this will require the active engagement of farmers and others who are seeking the services.

Recommendation 1.1: Rebuild UMass Extension’s capacity to provide needed agricultural education and technical assistance.

Action 1.1.1: Develop UMass Extension advisory committees of stakeholder representatives to address topical issues, such as livestock, crops, nutrition, energy, pollinators, farm business planning, farm economics, and waste management. These committees would provide guidance on programming and budgets to help ensure that UMass Extension is responsive to the needs of the community it serves.

Action 1.1.2: Identify, examine, and pursue a wide spectrum of potential and current revenue sources for UMass Extension that match the current and future needs of the food system in Massachusetts.
Massachusetts. Ensure that funds raised by UMass Extension from these sources does not result in a reduction in overall support from the University of Massachusetts.

**Action 1.1.3:** Fully fund the 2014 bond authorization that would support the UMass Center for Urban Sustainability in Waltham. Support the Center’s development as an Extension research and education resource for farmers of all types, as well as for homestead gardening and animal husbandry.

**Action 1.1.4:** Develop a plan to fully staff a revitalized UMass Extension service with community-based educational specialists, campus-based faculty, training specialists in specific topics, economic development practitioners, and research and laboratory services.

**Recommendation 1.2:** Focus UMass Extension’s agricultural resources on meeting the most immediate informational and technical assistance needs of farmers and the public.

**Action 1.2.1:** Provide on-farm technical assistance from UMass Extension agents.

**Action 1.2.2:** Develop UMass Extension’s capacity to help farmers understand and respond to demands of new or revised regulations in a timely manner.

**Action 1.2.3:** Provide education on topics that are relevant to Massachusetts farmers, with a focus on learning to use new technologies and management practices, and meeting food safety requirements.

**Action 1.2.4:** Develop educational materials about science that is relevant to a range of topical farm management and operations practices, such as organic certification, genetically modified organisms (GMOs), alternative fuels, and others. These materials should address impacts on the environment, public health, and the economy. Assist farmers, retailers, and retail food chain workers in using these materials to educate consumers about these topics.

**Action 1.2.5:** Encourage UMass Extension collaborations with complementary programs in New England, Massachusetts, and subregions of the State.

**Action 1.2.6:** Solicit public and stakeholder input to assist Extension in developing plans for management of crops and animals that may be necessary to adapt to the effects of climate change.

**Action 1.2.7:** Offer Extension trainings and technical assistance to urban farmers on relevant topics.

**Action 1.2.8:** Support Extension research and development for crops including grapes, hops, grain, fruits (cider apples, for example), and other ingredients for distilled beverage products and other high growth food categories.

**Action 1.2.9:** Develop Extension resources and assistance for home gardening, food seasonality, selection, preparation, and preserving.

**Action 1.2.10:** Encourage and coordinate collaboration among other State Extension services and UMass Extension to reduce overlap, fill gaps in demand for technical assistance and training for farmers, and improve interstate cooperation.
**Recommendation 1.3:** Develop and coordinate other educational, research, and technical assistance supports.

- **Action 1.3.1:** Create a network of education and technical service providers that includes government agencies, nonprofits, the UMass system and Extension, the MACC, technical high schools, other private and public educational institutions, regulators, and others, to ensure that the work of these groups is relevant to the needs of the farming sector, and to reduce redundancies and improve communication across sectors.

- **Action 1.3.2:** Facilitate coordination among nonprofit service providers so that education and technical assistance offered is relevant to the contemporary challenges farmers face, and presented in ways that are accessible to a broad range of farmers, including next generation farmers and New American farmers.

- **Action 1.3.3:** Improve programs offered by MDAR and UMass Extension to aid farmers in understanding and addressing the demands of the federal FSMA, other food safety regulations, and third party audit systems, particularly as they relate to farmers’ ability to sell at farmers markets and access other retail and wholesale outlets.

- **Action 1.3.4:** Promote and leverage USDA-NRCS, and other federal grant and technical assistance programs to meet goals relating to increasing market share and production, and provide technical assistance for grant applications and compliance with program requirements.

- **Action 1.3.5:** Increase funding and support for vocational and agricultural high school farmer training programs, as well as community college hands-on agricultural programs.

- **Action 1.3.6:** Establish and support regional and local crop breeding programs and seed libraries to facilitate geographically strategic genetic preservation and to address impacts of climate change.

**Nonprofit organization provides technical assistance to farmer**

Bessie Tsimba came to the U.S. from Zimbabwe in 1988, and now has a successful vegetable farm in Harvard, thanks to access to resources, equipment, and the Farm Business Planning Course, all offered by New Entry Sustainable Farming Project. She grows crops for New Entry’s CSA, as well as crops native to Africa to sell to friends in her community. New Entry’s Farmland Matching Service helped her find her one-acre plot in Harvard, where she is in her third year of growing.

Education and technical assistance such as those provided by New Entry and a host of other organizations in Massachusetts can make all the difference for aspiring farmers like Tsimba.

**Related Goals and Recommendations:**

Farming 1, Distribution 1.3
Farming Goal 2

Farming regulations will support the growth of agriculture.

As they are in most sectors of our economy, regulations are a necessary part of farming. Well-crafted and reasonable farm regulations protect the environment, workers, public health, and other community interests. They help create a level economic playing field. The agriculture regulatory system includes provisions and requirements that pertain to many aspects of farming, including – but not limited to – food safety, air quality, water quality, public safety, siting, taxes, land use, and labor.

Yet in Massachusetts, the regulatory system for agriculture at the State and local levels is not as effective or efficient as it should be. Funding for development, research, public engagement, and enforcement of regulations has been reduced. Also, our State’s tradition of “Home Rule” local government by its 351 individual cities and towns – and the lack of virtually any county government – has led to wide variation in the education, expertise, and capacity of local regulators. For example, there are currently no educational or training requirements for local public health workers, nor are there accreditation requirements for local boards of health and health departments. Regionalization of public health services and regulations, which holds promise to increase capacity and expertise, is voluntary and has been successfully pursued in a few areas; opportunities for training and working across sectors are growing, but are still limited.

As a result, there is a considerable subset of regulations pertaining to agriculture that are in need of review and revision. Some are outdated and have not been revised to reflect modern agricultural practices or current science. In some cases, there are simply more regulations than warranted, often the result of blanket solutions that stemmed from overreaction to isolated incidents. Robust and timely stakeholder engagement to produce effective regulations does not happen often enough. And in some cases, ineffective or irrelevant regulations that are not based in agricultural science wind up getting implemented. These can outstrip the capacity of farmers to comply, resulting in financial losses. Farmers often can’t absorb all the costs of complying with new regulations without additional education and technical assistance.

At the municipal level, local officials in Massachusetts are responsible for implementing and enforcing a complex array of State and local regulations that pertain to land, the environment, and public health. In small towns in particular, the volunteer boards and part-time professional staff who are responsible for overseeing compliance are often not well-prepared to address agricultural issues that come before them without additional technical assistance and education. And farms that do business in more than one town often find themselves trying to comply with different regulations in each community.

In addition to the structural issues cited above, there are two specific regulatory concerns that merit immediate attention. First, many State and federal farm labor regulations that protect farmworkers’ safety and rights are complex and challenging to navigate, and thus unduly interfere with the ability of farmers to hire and manage an effective workforce, even though many farmers support the intent and often exceed the requirements of such regulations. And secondly, regulations related to meat processing have been a deterrent to growth for livestock farmers Massachusetts, even as demand for local meat is rising.
**Recommendation 2.1:** Create a regulatory system that does not outpace the capacity of the agricultural community to comply.

**Action 2.1.1:** As new regulations or revisions to existing ones are considered, regulators should work directly with stakeholders, including providers of technical, educational, and financial assistance, to produce a consensus draft of new regulations prior to their release for review by the general public. Regulators and stakeholders should work together to craft regulations that are based on farming practices that are currently achievable; identify how these practices can be improved over time; and develop processes for making such improvements, such as allowing for extended phase-in periods, and providing education and technical assistance.

**Action 2.1.2:** Ensure that regulatory processes are transparent; that they operate in a timely and predictable fashion; and that they are appropriate to the size of the farm being regulated.

**Action 2.1.3:** Train and manage regulators to enforce regulations consistently, and to offer technical assistance to farmers so that compliance concerns can be remedied quickly. Ensure that regulators who conduct on-site farm inspections are well-versed in farming issues and are able to understand and address specific concerns found on one farm in a broader context.

**Action 2.1.4:** Establish a circuit rider program at MDAR with staff who can visit farms in a non-enforcement capacity to explain regulations and programs available through the department that may aid with compliance.

**Action 2.1.5:** Review regulations at least every ten years to ensure that the standards they set match the reality of current agricultural practices and needs and other concerns.

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**Lack of uniform regulations hinder small food business growth**

Jane Janovsky makes and markets artisanal jams, made primarily from fruit she harvests from local farms in the Pioneer Valley. She's certified by the state as a safe food handler, pays her town a fee each year in order to be permitted to cook her jams in her commercially certified home kitchen, and then has to pay fees and fill out forms for each town where she wants to participate in an event or market. With no uniform certification process from town-to-town, and no reciprocity or blanket approval available for small scale processors, the paperwork and fees are very burdensome for businesspeople like Jane.

**Related Goals and Recommendations:**
- Farming 2
- Processing 3.2
- Distribution 6.2
**Action 2.1.6:** Facilitate improved communication among agencies and stakeholders with a focus on balancing regulations and farm viability.

**Recommendation 2.2:** Review and revise State regulations hindering farms’ viability.

**Action 2.2.1:** Review all State programs, regulations, and laws relevant to farming that include a definition of farming or agriculture and, where possible, establish common definitions as the basis for a consistent and understandable set of rules for farmers to follow.

**Action 2.2.2:** Engage farmers and other relevant stakeholders in a review of nutrient management regulations; update as needed.

**Action 2.2.3:** Establish a State livestock care and standards board to ensure that livestock is treated humanely, and that State requirements are based on the standards of practice and the values of Massachusetts farmers, consumers, and residents.

**Action 2.2.4:** Bring together farmers, plumbers, and regulators to develop a suitable agricultural plumbing code.

**Action 2.2.5:** Adapt building codes and regulations to promote utilization of vacant industrial buildings for hydroponic growing and other food production.

**Action 2.2.6:** Develop regulations to facilitate dairy farms’ capacity to sell raw milk and related value-added products direct to consumers while ensuring adequate oversight to protect safety and consumer confidence.

**Action 2.2.7:** Establish a committee to review State apiary laws and propose recommendations to support the growth of native pollinators.

**Action 2.2.8:** Work with the congressional delegations of Massachusetts and other New England states to advocate for changes in the federal dairy pricing structure so that it is more sensitive to the particular needs of Massachusetts dairy farms.

**Recommendation 2.3:** Minimize municipal regulations that hinder farm viability.

**Action 2.3.1:** Develop a system of checks and balances to support appropriate engagement of municipal boards of health and conservations commissions in agricultural issues and reduce unwarranted or unjustified regulations.

**Action 2.3.2:** Develop the capacity of agricultural commissions through an organization such as the MAAC, with support from MDAR, to play a formal role in local decisions and issues related to agriculture.

**Action 2.3.3:** Encourage farmers to serve on local select boards, boards of health, conservation commissions, planning boards, water and sewer commissions, and similar local bodies to ensure that the perspectives of agriculture are represented in local government.

**Action 2.3.4:** Develop incentives to encourage towns and cities without agricultural commissions to create them, particularly in Gateway Cities, and support technical assistance, education, and networking opportunities for all commission members.
**Action 2.3.5:** Work to achieve greater overall consistency in municipal health regulations pertaining to agricultural production and marketing so that farmers can more efficiently manage agricultural operations and market opportunities across town lines. State agencies, regional planning agencies, and support organizations should encourage and assist with this action.

**Action 2.3.6:** Require and publicly fund training of local and State regulators in agriculture and food issues.

**Action 2.3.7:** Explore and implement options for credentialing of the local public health workforce, accreditation of local health departments, and regionalization of local public health services and regulations.

**Action 2.3.7:** Create a professionally-facilitated working group that includes representatives from the fields of public health and food systems, as well as regulatory agencies, to develop a proposal to improve regulatory oversight of the local food system with respect to public health. This proposal should address:

- Actions to achieve consistent, science-based State and local regulations that are developed by practitioners and public health professionals concerning animal slaughter, on-farm processing, product aggregation, farmers markets, and other relevant issues that may be identified.
- Requirements for training local regulators in food system practices and current science, and a plan for developing resources for doing so.
- Requirements for training local regulators to enforce regulations consistently and, wherever possible, to offer resources to remedy concerns before taking punitive action.
- A requirement for public review of new regulations that is timely and transparent, involves affected stakeholders early on, and includes at least one public hearing.
- A system of checks and balances on local regulations and actions, including appeal processes.
- Consideration of other related issues as raised in this Plan.

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Marlene and Chris Stasinos farm 139 acres of land and operate a popular farm stand in Haverhill. They offer educational tours to local groups and are committed to sustainable farming practices.

In 2011, looking for ways to keep their farm in business and meet customers’ growing demand for local meats, they added eight pigs to their 200-year-old farm, which had been home to various kinds of livestock throughout its history. When one neighbor complained, the town’s board of health wrote regulations requiring anyone with more than one pig to apply for a permit, setting out strict protocols that effectively denied the Stasinos’ from keeping pigs on their farm.

*Related Goals and Recommendations: Farming 2.3*
The working group should present its proposal to the Massachusetts Food Policy Council, appropriate agencies within the State administration, and the legislature within nine months of the first working group meeting. The proposal should note whether or not State legislative or regulatory changes are needed to implement the proposal’s recommendations, and it should include a draft budget for implementation.

**Recommendation 2.4:** Address outdated and confusing regulations concerning agricultural labor to better meet the needs of Massachusetts farm businesses while protecting the well-being and security of agricultural workers.

**Action 2.4.1:** Develop an online, centralized job matching hub for domestic agricultural workers.

**Action 2.4.2:** Facilitate partnerships between farmers who require labor during different seasons.

**Action 2.4.3:** Establish a time-limited youth and training minimum wage for farm workers.

**Action 2.4.4:** Allow retail farm workers to qualify for the agricultural minimum wage.

**Action 2.4.5:** Educate farmers about federal and State labor laws, with an emphasis on assistance with compliance, rather than punitive measures for violations.

**Action 2.4.6:** Ensure that when changes to State labor laws are considered that may affect sick leave, scheduling, overtime, and other related topics that consideration is given to relevance and applicability for on-farm workers.

**Action 2.4.7:** Change the definition of agriculture as it is applied to the federal Fair Labor Standards Action (FLSA) so that it allows for retail agriculture (work other than field work) and a limited amount of aggregation of goods from area farms.

**Action 2.4.8:** Work with the congressional delegations of New England states to move administration of the federal H2A Temporary Agricultural Workers Program from the Department of Homeland Security to the USDA.

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**Related Goals and Recommendations: Farming 2.5**

Farmers seek more animal processing closer to home

Eden Pond Farm in Bernardston raises meat chickens, but because of the lack of facilities in Massachusetts, drives their birds to Rhode Island for processing, requiring either a full day away from the farm, or two round trips of 200 miles. North Plain Farm in Great Barrington raises pork and beef, and drives several hours to a slaughterhouse in New York State twice a month. The added costs of having to take animals so far away for processing makes it harder for farms to sell local meat at competitive prices. And regulatory requirements makes it challenging for new facilities to be brought on line. Take the situation in Westport, where the nonprofit Southeast Massachusetts Livestock Association is looking to build a processing facility, but needs to raise $4.5 million to pay for the infrastructure required by regulators.

Creative solutions have demonstrated the potential for growth in meat and poultry production in Massachusetts. To help farmers raise more chickens on Martha’s Vineyard, Island Grown Initiative developed and licensed a mobile poultry processing unit. In just a few years, production on the island went from 500 birds to more than 10,000, and several jobs were created in operating the facility. 

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Action 2.4.9: Allow brokers to aggregate farm work on multiple farms so that a number of farms can share the costs of transportation and housing of H2A temporary agricultural workers.

Action 2.4.10: Allow H2A temporary agricultural workers to remain in the U.S. for a full year.

Action 2.4.11: Support federal legislation to forgive student loans to college graduates after ten years of working in farming.

Action 2.4.12: Offer graduates of local vet schools forgiveness on student loans if they work with large animals in Massachusetts for a set period of time.

Recommendation 2.5: Revise regulatory requirements for livestock processing to facilitate development of increased infrastructure.

Action 2.5.1: Form a committee to review all State laws and regulations relative to livestock processing, as well as the Commonwealth’s current livestock slaughter and processing capacity, and make recommendations for improvements. The committee should include State health and agricultural officials, livestock producers, UMass Extension professionals, and representatives of existing livestock processing facilities.

Action 2.5.2: Move livestock processing oversight from Massachusetts DPH to MDAR to foster a more agriculturally informed environment for regulation of livestock processing.

Action 2.5.3: Assess the suitability of a State-level meat inspection program and implement, if deemed appropriate.

Action 2.5.4: Conduct a study to determine how on-farm poultry processing regulations compare with those of other states and revise Massachusetts’ regulations to facilitate growth in local poultry production.

Action 2.5.5: Create a sliding fee for livestock processing permits based on the number of animals processed.

Action 2.5.6: Develop a clear, practical manual for on-farm poultry processing, including regulatory information.
Farming Goal 3

Farms will have financial and business planning support.

Farming in Massachusetts is a low-margin business, and financial stability for farms depends upon weather, global markets, and other factors over which farmers have no control. Further, initial infrastructure investments are costly, and changing technologies and regulations require ongoing expenses. In many cases it is challenging, or even impossible, for Massachusetts farmers to benefit from the economies of scale that come with large-scale farming, in large part because of the prohibitive cost of land or the lack of its availability. The costs of inputs for agriculture are typically higher in New England than elsewhere in the country, putting Massachusetts farmers at a competitive disadvantage. And the relatively short growing season limits farmers’ ability to compete, as well.

As the number of farms and level of agricultural production in the State have increased, public investment in support services for farms has not kept pace. Since 2009, MDAR has generated more revenue through fees and permits than its budgetary allocation for administrative costs to support the agricultural sector. In FY2014, MDAR’s revenue of $6.2 million exceeded its year-end operating budget of $5.4 million. But even as MDAR’s FY2014 revenue was 5.3 percent higher than the prior fiscal year, setting an all-time high, the Department has seen a decline in staff size in recent years.

Despite the number of nonprofit and private entities providing financial and business services to farms and other food businesses, few of the available services are provided consistently across Massachusetts or are accessible to all businesses that are interested. For example, there are resources available to help beginning farmers write business plans and obtain startup loans, but far fewer services are focused on business development, business management skills, and access to capital. When financing is available, it sometimes saddles farmers with unsustainable debt.

Massachusetts farmers constantly face pressure to keep product prices low to compete with food imported from other regions or countries. At the same time, farmers must ensure that the food they sell is as accessible to a wide range of consumers. Therefore, providing technical assistance for the business and financial aspects of running a farm is critical to help keeping our agricultural sector viable.

Recommendation 3.1: Strengthen governmental support systems for agriculture.

**Action 3.1.1:** Assure that MDAR’s annual budget is at least as much as the agency receives in fees each year.

**Action 3.1.2:** Increase funding for FVEP and similar State programs focused on farm business development by fully expending over the next four years the bond authorizations for farm viability provided in the 2008 and 2014 environmental bonds, and increase this item by at least 25 percent in subsequent authorizations. Use the USDA Rural Development definition of “urban” to determine allocations based on the legislative language.

**Action 3.1.3:** Continue funding for integrated pest management education and research, with a focus on new invasive species and the need for production of new crop species that better tolerate the effects of climate change.
**Action 3.1.4:** Restore funding for the Agricultural Innovations Center to foster new and innovative ideas to adding value to the Commonwealth’s agricultural economy, and sharing those ideas throughout the industry.

**Action 3.1.5:** Fund the AEEP to provide financial assistance to farmers for fencing and other structures to protect rivers from agricultural activity.

**Action 3.1.6:** Implement a tax credit for farmers who donate their surplus crops.

**Action 3.1.7:** Maintain the Massachusetts Dairy Farmer Tax Credit.

**Action 3.1.8:** Make available public loans and grants for on-farm and shared physical infrastructure investments.

**Action 3.1.9:** Increase funding for the Agricultural Food Safety Improvement program to help farmers comply with food safety regulations, as well as gaining and maintaining access to markets.

**Action 3.1.10:** Offer State-underwritten loan guarantees for infrastructure development, such as slaughterhouse facilities and mobile slaughterhouse services for small producers.

**Action 3.1.11:** Encourage farmer participation in USDA’s Census of Agriculture and other surveys so that the agricultural sector of the economy is better understood, and so that accurate data is available for formula-based federal grants and programs.

**Action 3.1.12:** Develop guidelines to ensure that nonprofit farms do not receive unfair competitive or financial advantages over for-profit commercial farm businesses.

**Action 3.1.13:** Forgive student debt for graduates of UMass agricultural education programs and other public agriculture programs who choose to work on a Massachusetts farm for at least ten years after graduation, consistent similar with federal programs for other professions with a public benefit.

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

**Action 3.2.1:** Establish peer networks of business technical assistance service providers and financiers to share information, enhance referrals, provide opportunities for skill development, and work to address gaps and duplication within the agricultural sector.

**Action 3.2.2:** Develop a range of credit options and business support services, including financial products that are flexible enough to support seasonal cash flow and meet fast turn-around approval and disbursement demands of some agricultural projects, to help farmers of all types at all stages of growth and development. Immediate, pre-qualified access to short-term loans is particularly critical.

**Action 3.2.3:** Ensure that financial products for farm businesses are coupled with services and technical assistance that help farmers understand all options, commitments, and risks.

**Action 3.2.4:** Develop resources to incubate and increase the number of farms and other agricultural businesses in urban areas, especially in low income communities and those with limited
Beginning farmer thrives thanks to funding and technical support

Bug Hill Farm in Ashfield grows uncommon small fruit, hosts educational workshops and farm to table luncheons, and actively manages fields and woodlands to enhance wildlife habitat including native pollinators.

When Kate Kerivan wanted to expand the certified-organic operation in 2010, she turned to the Carrot Project – a nonprofit organization that facilitates access to financing and business support – and received a loan that she says was a catalyst in her farm’s growth. The loan not only helped with development of her farm, but established her business in a way that helped Kate leverage resources from USDA and NRCS to help ensure that the farm would remain sustainable. Business planning assistance from MDAR also helped her plan for the farm’s future.

Related Goals and Recommendations:
Farming 3.2

Services access to fresh and healthy foods. Support these businesses with technical assistance for legal matters, marketing, finance and strategic services, and public funding.

Action 3.2.5: Develop a Venture-Oriented Investment Fund for farms, with tiers for a range of ventures such as: business planning and technical assistance, including small grants; lending programs targeted to agricultural businesses; philanthropic funding for start-ups; and more return-oriented traditional investment for growing ventures.

Action 3.2.6: Align and leverage existing small business development centers, community development financial institutions, community development corporations, and development finance agencies to develop innovative and unique small and micro business development services for farms.

Action 3.2.7: Support the development of a network of urban agriculture practitioners to share resources and ideas that are specific to urban farming practices and considerations.

Action 3.2.8: Encourage the Massachusetts Congressional delegation to request USDA development of crop insurance products that meet the needs of small crop-diversified farms.
Massachusetts is a national leader in seafood production and distribution. Clean waters, sustainable harvesting practices, and conservation efforts support a diversity of fish and shellfish species in thriving. Sea scallop, lobster, clams, flounders, cod, haddock, goosefish, oyster, herring, and mackerel are some of the diverse species landed. There are considerable prospects for increasing seafood distribution within the State and other markets are growing as well, evident in particular in the aquaculture industry, which has doubled in recent years. Along with the strengths and prospects of the State’s seafood industry, there are also significant challenges. International trade challenges the viability of local fishing operations, especially smaller operations. Climate change and unsustainable fishing operations compromise the health and diversity of marine ecosystems and fish stocks.

The goals, recommendations, and actions for fishing aim to ensure that fishing communities can remain strong, that industry jobs throughout the supply chain support families, and that new markets can enable distribution of more local and diverse seafood throughout the State and New England. The goals recognize the importance of marine biodiversity and ecosystem health as central to sustained prosperity of the industry, and offer recommendations for sustainable practices and operations. All of the recommendations seek to ensure that nutritious, healthy, locally landed seafood is eaten by more residents, regardless of income. Goals represent opportunities for marine fisheries and shellfisheries, but they do not explicitly address land-based aquaculture. While several goals may be relevant to land-based aquaculture, further discussions are needed to identify the issues and opportunities of this part of the fishing industry.
Fishing Goals

Goal 1: The marine ecosystem will be resilient and will sustain the seafood industry.

Goal 2: The local seafood system will have strong markets, support livelihoods, and increase customer purchases.

Goal 3: Local seafood will be available and affordable.

Goal 4: The local seafood system will be collaborative and networked.

Goal 5: Research will help the fishing and aquaculture industries grow sustainably.
Fishing Goal 1

The marine ecosystem will be resilient and will sustain the seafood industry.

Globally, marine biodiversity and fish stocks face multiple threats. Unsustainable fishing practices pressure some fish stocks. Increased temperature and acidification of ocean waters caused by climate change impede development or compel habitat migration of fish and shellfish. Land use policies that do little to prevent shoreline real estate development compromise sensitive marine ecosystems. Eutrophication and pollution caused by runoff impacts plant and animal species diversity, water quality, and vitality of the aquatic ecology.

Agencies including EOEEA’s Division of Marine Fisheries (DMF) and Division of Ecological Restoration (DER), and MassDEP are responsible for marine fishing regulations and conservation efforts that balance economic activity in the seafood industry with aquatic species and habitat management, preservation, and restoration. Significant conservation efforts by these agencies and others have helped maintain the remarkable biodiversity of the State.\(^1\) Sustainable fishing operation practices also contribute to improved biodiversity. The small scale of these operations naturally limits the impacts on species stocks, and expanding markets for underutilized species means that more by-catch is landed. Increasingly, the benefits of shellfish habitat restoration are being recognized as important to habitat restoration and a growing industry. Restoration projects improve water quality, remove excess nutrients from coastal ecosystems, and provide spawning habitat for commercial fishing species. In the face of the complex pressures to species stocks and habitat in Massachusetts waters, ongoing efforts must be supported to anticipate impacts and work proactively to protect marine ecosystems.

Recommendation 1.1: Encourage sustainable fishing practices that protect fish and shellfish stock and habitat.

**Action 1.1.1:** Fund existing and new programs that support marine ecosystem protection and restoration, such as the National Oceanic and Atmospheric Administration (NOAA) focus on wetland protection and carbon sequestration, efforts by Massachusetts towns and their partners on eelgrass and oyster reef restoration projects, and Atlantic Coastal Fish Habitat Partnership’s restoration projects.

**Action 1.1.2:** Improve data collection methods, systems, and technology for ‘fishery dependent’ and ‘fishery independent’ fish stocks. NOAA’s Northeast Federal Fishery Dependent Data Visioning project and the Atlantic Coastal Cooperative Statistics Program are leads in fishery dependent data collection.

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\(^1\) Manomet and Division of Fisheries and Wildlife (2010). *Climate Change and Massachusetts Fish and Wildlife, Volume 1, Introduction and Background.* Accessed September 2015 from https://goo.gl/qzcW2n.
Sea scallops buoy a coastal town but climate change is likely to alter ocean waters

The Port of New Bedford employs over 4,000 people and is the highest ranking seaport in the country in terms of the dollar value of the seafood landed. Eighty percent of its revenue comes from sea scallops, a high-value species. In a city that faces economic hardships otherwise, the fishing industry is important to supporting the livelihoods of many residents, and is an important part of the cultural identity of the region.

Despite New Bedford’s excellent position in the seafood industry, there are likely to be significant challenges going forward, as ocean waters warm and acidify and shellfish decline as a result of climate change. Southeastern Massachusetts is one of the most vulnerable regions in the country to the impacts of ocean acidification. Evidence available points to the need to address these issues now – in New Bedford and other vulnerable communities - and begin taking steps to ensuring marine ecosystem resiliency, and solutions that enable shellfish-dependent economies to develop adaptive solutions.

Related Goals and Recommendations: Fishing 1.1 and 1.2
Fishing Goal 2

The local seafood system will have strong markets, support livelihoods, and increase consumer demand.

The State’s seafood industry has shifted from serving local and domestic markets, to serving primarily the export-driven commodity market. Fishermen face significant challenges, from price and market constraints to catch limitations. Market shifts in the seafood industry have made it increasingly difficult for small fishing, shellfish, and aquaculture operations to sustain themselves. As more of the fishing workforce nears retirement, there is also an anticipated labor shortage that compromises the industry’s future.

Embedded in these challenges are significant opportunities. With Massachusetts ranking third nationally in total seafood sales ($8.4 billion), and its residents spending an estimated $314 million annually on seafood, there is a significant opportunity to make sure that more of the seafood bought by Massachusetts residents is from Massachusetts waters. While markets for local farm products have matured over the past decades, the Massachusetts seafood industry is newly exploring opportunities to expand local and domestic distribution of the State’s catch. Efforts by local groceries, community supported fisheries and institutional procurement by hospitals and schools are enabling fishermen to reorient their businesses to local markets, and earn more for their catch than is possible in international trade. These models are also enabling more Massachusetts residents to access and consume locally-caught and landed seafood. As Massachusetts continues to expand local markets for seafood, innovative market models, strategies to train an incoming workforce, and improved efforts to educate residents on the value of local seafood are important in supporting the growth of the industry.

**Recommendation 2.1:** Improve livelihood viability and prospects for the seafood industry workforce, including fishermen, lobstersmen, shellfish harvesters, aquaculturalists, seafood processors, and researchers.

**Action 2.1.1:** Ensure that fishermen’s access to commercial fisheries is maintained and improved.

**Action 2.1.2:** Support new and established retail and wholesale infrastructure through low interest business loans or grants and other programs.

**Action 2.1.3:** Implement a fisheries training curriculum that educates the fisheries labor force in the local seafood supply chain, and develops skills of small operators and processors, including in value chain education, sustainable high-tech gear, and alternative and low-energy boat design.

**Action 2.1.4:** Provide fish and shellfish industry workforce with living wages and full-time work, through such measures as diversifying and expanding markets or developing processing cooperatives. Markets for finfish and shellfish are different. As permitted for the different species, direct to consumer markets and wholesale markets should be expanded.

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Oyster reef restoration grows oyster populations and improves water quality

Six million oysters might sound like a lot, but this amount which is currently being landed in Wellfleet is 90% less than what Wellfleet once landed. This decrease is linked to overfishing and habitat degradation. In an effort to increase oyster populations and related benefits, Wellfleet’s Comprehensive Wastewater Committee Shellfish Department and Department of Public Works teamed up with UMass Boston’s Green Harbors Project from 2010 to 2015 on oyster restoration. The project team distributed 300 tons of ‘culch’ – a combination of surf clam and oyster shell – in a 2-acre pilot project area, and over 3,000 tons of the material along the harbor. Oyster populations have grown from a few thousand to several million in the pilot area and water quality has improved from ‘severely degraded’ to ‘excellent’ by EPA standards. In broader Wellfleet Harbor, approximately 35 acres of oyster habitat has been restored, increasing the oyster population to an estimated 200 million.

Related Goals and Recommendations:
Fishing 1.1 and 1.2

Action 2.1.5: Ensure safe work environments and training and advancement opportunities for seafood processing workforce.

Action 2.1.6: Support continuing leasing of shellfish aquaculture under municipal control for small, local harvesters and aquaculturists.

Action 2.1.7: Support groundfish fishing fleets that range in size and gear type.

Recommendation 2.2: Increase consumer education on local seafood.

Action 2.2.1: Fund, develop, and implement educational curriculum and events to increase consumer awareness of the benefits of eating fresh, local seafood, as well as precautions to take to ensure that fish eaten comes from unpolluted waters, and that exposure to heavy metals in fish is minimized. Revisit past New England Seafood Series programming by UMass Extension Nutrition Education Program, and consider rededicating funding.

Action 2.2.2: Develop a toolkit for seafood marketers to easily educate consumers.

Recommendation 2.3: Expand local seafood markets, product development, and seafood supply chain innovations.

Action 2.3.1: Perform a review of regulations related to the seafood supply chain, and recommend reformation of those that are overly-restrictive or outdated.

Action 2.3.2: Fund and ensure longevity of the DMF Seafood Marketing Program, steering committee, and coordinator position.
**Action 2.3.3:** Where permitted for different species, open and expand markets for local seafood including: grocery stores; community supported fisheries programs; farmers markets; public markets; institutional distribution including to universities, colleges, hospitals, prisons, public schools; and wholesale distribution.

**Action 2.3.4:** Create markets for diverse fish and shellfish species to encourage the harvesting of a range of fish and shellfish species to ensure stable livelihoods and ecological resiliency.

**Action 2.3.5:** Expand the markets for a variety of locally-abundant fish species (i.e. Mackerel and Whiting), and lesser known species (i.e. Arcadian redfish, dogfish, and scup) and invasive species (i.e. green crab which is threatening shellfish habitat).

**Action 2.3.6:** Support value-added seafood product development. Examples include edible seafood products like smoked fish, or non-food products like fish emulsion fertilizer.

**Action 2.3.7:** Determine feasibility and develop seafood innovation districts that include elements such as test kitchens, laboratories for developing value-added products and innovative technologies to recover and utilize waste, and start-up accelerators to develop new businesses. Include support systems such as active collaboration with food policy councils, grant writing, marketing studies, business planning, and early-stage financing.

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**Health care facilities shift to local seafood**

Many healthcare institutions are realizing that it's time to buy seafood in line with their values. The Northwest Atlantic Marine Alliance, in collaboration with Health Care Without Harm’s Healthy Food in Healthcare Program, are assisting health care facilities in sourcing and serving local, ecologically-responsible seafood whenever possible. Changing buying policies to include local seafood can result in better economic return for fishermen, healthier regional food systems, and more resilient coastal communities.

Some healthcare organizations are promoting a number of initiatives to support eating more local seafood. These include sourcing seafood from purveyors working with small- and medium-scale fishermen, providing their culinary staff with training, providing consumer education on seafood, and highlighting under-appreciated seafood species in their menus.

**Related Goals and Recommendations:**

Fishing 2.1, 2.2, 2.3, 2.4, and 4.1.5
Action 2.3.8: Support seafood product development and innovation in culinary schools, and universities, colleges, and primary schools that operate culinary programs.

Action 2.3.9: Support shellfish operations in diversifying the shellfish species farmed and harvested. These species could include quahogs, clams, mussels, oysters, and other shellfish.

Action 2.3.10: Support growth of local businesses that aid in developing the local seafood supply chain. These could be businesses providing equipment, services, or other innovations that advance local seafood distribution.

Recommendation 2.4: Improve local seafood infrastructure and supply chain systems.

Action 2.4.1: Expand and fund mechanisms for source-tracking for locally landed fish and shellfish, so that all fisheries in Massachusetts are tracking and recording details about their catches, and fisheries data is improved. Source tracking technology developed by the seafood distributor Red’s Best could be considered as a model.

Action 2.4.2: Incentivize municipalities to encourage shellfish restoration and harvesting and sustainable aquaculture enterprise.

Action 2.4.3: Upgrade and expand current aggregation methods, processing, facilities, and equipment, based on research and in the context of expanding the local seafood industry and building equity and sustainability into the value chain.

Related Goals and Recommendations: Fishing 2.1, 2.2, 2.3, 2.4, and 4.1.5)
**Fishing Goal 3**

**Local seafood will be available and affordable.**

As a coastal state with an abundant and diverse variety of fish species, all Massachusetts residents, regardless of income, should be able to find and afford local seafood in nearby stores and other venues. To date, seafood marketing efforts have been concerned with the viability of small fishing operations in the State, and increasing workforce earnings. To tackle the challenges of increasing affordability of seafood while also justly compensating fishing businesses, it will be necessary to develop a suite of strategies that include new market opportunities and subsidy and incentive programs.

While efforts to increase the affordability of local seafood lag behind efforts to increase affordability of fresh fruits and vegetables, advocates for affordable seafood can learn from successful models already in place for produce. Incentive programs that double customer purchasing capacity, direct to consumer marketing, distribution to schools and hospitals, and other models can be tailored to affordable seafood distribution.

**Recommendation 3.1:** Make locally caught seafood accessible and affordable.

- **Action 3.1.1:** Promote locally caught fish species through established seafood outlets and distribution channels such as conventional grocery, retail, and fish markets.
- **Action 3.1.2:** Support direct to consumer models for seafood sales, such as community supported fishery (CSF) programs. Support organizations that spur CSF development through education and technical assistance.
- **Action 3.1.3:** Make local seafood eligible for purchase with consumer incentives programs, like Boston Bounty Bucks.
- **Action 3.1.4:** Develop local seafood products for public schools, hospitals, prisons, and universities and increase distribution.
- **Action 3.1.5:** Distribute sustainably-caught, local seafood to hunger relief organizations.
- **Action 3.1.6:** Distribute local seafood at retail locations that accept Supplemental Nutrition Assistance Program (SNAP) purchases.
- **Action 3.1.7:** Distribute fresh, whole fish to markets, with a focus on customers’ cultural preferences. This is a marketing strategy that reduces processing costs and delivers cost-savings to customers.
- **Action 3.1.8:** Encourage the sale and consumption of lower-cost, underutilized species, like whiting, Arcadian redfish, dogfish, and scup in all markets.
- **Action 3.1.9:** Promote safe recreational angling – including clamming, lobustering, and spear fishing – that enables individuals to fish for their own seafood. Facilitate this by developing urban access to fishing piers, and removing language barriers for permits.
Fishing Goal 4

The local seafood system will be collaborative and networked.

In recent decades fishing communities have been in decline. Massachusetts’ seafood industry needs greater collaboration to define solutions for its future. The sectors are disjointed and have little insight into the realities and opportunities across areas from fishing to processing to retail. Businesses within the same sectors see each other as competitors and rarely as potential collaborators. Other stakeholders in the seafood system, including fishery businesses, scientists, and government could benefit from increased communication and information-sharing.

While the industry is largely disjointed, some entities are paving the way for increased collaboration toward strengthening the local fishing economy. Some wholesale dealers, like Red’s Best, are working to enhance the sale of locally caught fish to institutions through collaborative efforts with The Northwest Atlantic Marine Alliance and Health Care Without Harm. These two organizations are also working together to shape effective consumer education and messaging for local seafood served in hospitals. Going forward, conversations need to engage more stakeholders, and traditionally competitive businesses and disparate groups will need to strategize together on building markets, streamlining distribution, and leveraging other opportunities for Massachusetts’ seafood.

**Recommendation 4.1:** Build collaborative networks and ensure fishing industry representation in government and policy arenas.

- **Action 4.1.1:** Create a seat for the MFPC Advisory Committee for a representative of the fishing industry.
- **Action 4.1.3:** Support and collaborate with the DMF’s shellfish advisory panel to establish an interagency committee to review and update shellfish regulations and policies. The committee should also be informed by the Interstate Shellfish Sanitation Conference.
- **Action 4.1.4:** Build collaborative networks comprised of a range of State agencies including the DMF, MDAR, MassDEP, DPH, and the Massachusetts Office of Business Development to develop and implement strategies that grow the local seafood system.
- **Action 4.1.5:** Build collaborative networks comprised of a range of businesses, organizations, and institutions with interest and stake in development of the local seafood system.
- **Action 4.1.7:** Create and maintain a database to enable coordination and collaboration between the multitude of organizations and institutions with ties to local commercial fishing.
- **Action 4.1.8:** Conduct an assessment of the local seafood system to identify opportunities and gaps in the industry. Share data and findings with local seafood industry stakeholders.
Fishing Goal 5

Research will help the fishing and aquaculture industries grow sustainably.

Since the mid-1990s funding for seafood industry research has been cut significantly, and important research and product development facilities have closed altogether. Saltonstall-Kennedy federal research grants have been reduced by more than 85 percent since the 1980s. Similar funding for cooperative fisheries research is not available from the State. Two research laboratories closed in the mid-1990s. One remaining research center in Gloucester has limited its research scope to species with already strong markets, and has reduced its focus on seafood product research and development. As the Massachusetts fishing community has faced significant challenges from foreign seafood trade’s domination of the industry, the limitations to seafood research and funding have further complicated the industry’s ability to respond.

A comprehensive research strategy is essential to identifying priorities to sustain local fishing operations. Broadly, this research should include a thorough assessment of the seafood supply chain, which examines the complex challenges of the industry. Specifically, local seafood advocates have already identified some opportunities in market and product development for underutilized finfish species, like Arcadian redfish, dogfish, and scup. Such ongoing and new areas of research should be supported as an integral part of sustaining small fishing operations and growing local seafood supply.

Recommendation 5.1: Conduct research to advance the fishing and aquaculture industries.

- **Action 5.1.1:** Assess ongoing research in the fishing and aquaculture industries, and develop a research agenda that complements and builds on ongoing studies.
- **Action 5.1.2:** Conduct a comprehensive seafood system plan, similar to the Massachusetts Food System Plan, that looks at all aspects of the seafood supply chain in detail, and develops goals and recommendations for the local seafood industry.
- **Action 5.1.3:** Review the 1995 ‘Aquaculture White Paper and Strategic Plan’ and subsequent revisions, and conduct new research to identify current challenges and opportunities in the industry.
- **Action 5.1.4:** Research land-based aquaculture to identify opportunities and strategies for innovation and enterprise development.
- **Action 5.1.5:** Study climate conditions including sea level rise, severe storms, and ocean acidification, and assess the impact of these on the marine ecosystems, estuaries, and fisheries.
- **Action 5.1.6:** Increase funding for cooperative research that improves the fishing industry’s ability to adapt to changes in fish populations and ensure stock resiliency.

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Research and innovation needed for fishing business viability

Gurry is what’s left over after a fish has been filleted. This mixture of fish heads, skeletons, scales, and fins was once loaded on boats and disposed of in the sea, a practice that polluted the ocean environment and was costly to fish processors. Recognizing the value of this byproduct, Ocean Crest Seafood in Gloucester worked with the University of Massachusetts Amherst Marine Station to turn this nutrient-rich waste into a marketable product in the 1980s. The result was Neptune’s Harvest organic agricultural fertilizer. In 2001 the company expanded its storage capacity by 30%, and is looking to expand even further.

Some of the greatest opportunities in the seafood sector lie in the kind of innovative research and product development that made manufacturing Neptune’s Harvest organic fertilizer possible. Unfortunately, since the 1990s, funding and resources for such research has been cut, with some research facilities shutting down completely. As fishermen increasingly face challenges of competing and remaining viable in an international market, fishing advocates are promoting strategies that would strengthen fishing businesses.

Related Goals and Recommendations: Fishing 5.1

Action 5.1.7: Commit State funding and grants to expanded research for local seafood product development and sustainable fish and shellfish operation innovation, with an eye toward expanding markets for underutilized species.

Action 5.1.8: Revive and expand seafood science research and development laboratories.
PROCESSING

Goals and Recommendations

The local food processing industry in Massachusetts includes a range of businesses, from farm-based craft dairy and cheese operations, to artisanal food and beverage companies, to contract based co-packing facilities and food hubs, to livestock and fish processing businesses. These Massachusetts businesses that contribute to a robust State food processing industry by making products that in whole or in part use local ingredients, or by providing employment opportunities to Massachusetts residents. As interest in local foods has increased in recent decades, interest and business activity has also grown in local food processing operations that incorporate local ingredients into products developed by Massachusetts entrepreneurs. Support programs, such as shared kitchens and food business incubators offer kitchen space, facilitate culinary business development, and provide farmers and fishermen opportunities to process their products.

Despite these successes, several challenges remain. Seasonality in this sector presents significant challenges to ensure stable, full-time employment. In some cases, hazardous work conditions, especially in the meat slaughter and fish processing sectors, present safety concerns. And smaller-scale operations face challenges with regulatory requirements that are often tailored to larger companies, and the enforcement of these regulations is variable. As a greater understanding of and collaboration in the local food processing industry is sought, it has become apparent that food processing industry data is scattered, and that the industry is fragmented and lacks industry associations to convene and support food processors.

The goals, recommendations, and actions in this section aim to ensure that the processing sector will have the resources, infrastructure, and connections throughout the supply chain to enable diverse business development that dually supports State farm and seafood production. Recommendations also address the challenges in the regulatory environment, and offer areas for reform and consistent and fair enforcement. ‘Processing’ and ‘Food processing’ are terms used synonymously with ‘food manufacturing’ in the goals and throughout this report.
Processing Goals

**Goal 1:** Food processing regulations will support business.

**Goal 2:** Food processing businesses will be supported in producing safe food.

**Goal 3:** Business and workforce development will meet the needs of a growing local food processing industry.

**Goal 4:** Food processing infrastructure will meet the needs of the growing local food system.

**Goal 5:** Funding will be available for food business incubators.
**Processing Goal 1**

**Food processing regulations will support businesses.**

As with any industry, regulations are a necessary part of food processing. If regulations are well-crafted, they can protect public health, workers, the environment, and other community interests, and they can create a level playing field. The regulatory system around food processing includes regulations covering many topic areas including but not limited to food safety, worker safety, water quality, taxes, land use, and others.

While food processing-related regulations are intended to ensure consistency and safety in the industry, these regulations can present small-scale food producers and processors with challenges. The complex nature of the regulatory environment poses challenges in navigating and understanding regulatory obligations. For small businesses, the costs associated with regulatory compliance can be onerous. Improvements to the regulatory environment will remove obstacles and introduce efficiencies for food system businesses.

**Recommendation 1.1:** Reform food processing regulations.

- **Action 1.1.1:** Clarify guiding regulatory codes and identify where modifications might be made. These should include federal, State, and local regulations that address a range of areas, from public health to building codes, with respect to business types and scales.

- **Action 1.1.2:** Develop a publicly-available inventory of food processing-related regulations that identifies relevant regulations and codes by business types. This could be in the form of a searchable digital interface.

- **Action 1.1.3:** Make building codes appropriately scaled for businesses of different sizes. In particular, review and reform the State Plumbing Code.

- **Action 1.1.4:** Develop streamlined regulatory processes for multi-use facilities, such as shared kitchens and food trucks.

- **Action 1.1.5:** Encourage the use of existing small production kitchens such as in Grange halls, churches and schools, where foods could be manufactured or developed in compliance with the State food code.

- **Action 1.1.6:** Review and revise regulations relative to meat and poultry processing.

- **Action 1.1.7:** Apply for the federal program enabling sale of State-inspected meat across state lines.

- **Action 1.1.8:** Review state and local food processing regulations in other states to inform regulation reform in Massachusetts and in New England.

**Recommendation 1.2:** Establish consistency in the enforcement of regulations.
Wendell residents rehab the Town Hall kitchen with funding from USDA

In fall 2012, a food security meeting in the small Town of Wendell helped generate an idea to renovate the Wendell Town Hall kitchen, sitting idle and unusable next to Wendell’s Good Neighbors food pantry. Finished in summer 2015, the Wendell Community Kitchen models best practices for establishing a shared-used commercial kitchen. The fully-accessible facility was funded in part by a grant from USDA’s Community Facilities Direct Loan and Grant Program, as well as by Town funds and fundraising, and was constructed with the help of the Franklin County Technical School.

The kitchen has had wide support from the community and is envisioned as a space where community members can process their own food or try out ideas for developing food products. The Wendell Community Kitchen is part of a larger culture of food security in Town, where the Wendell Local Food Security Project endeavors to increase the community’s food security by bolstering local production.

Related Goals and Recommendations: Processing Goal 1.1.4

Action 1.2.1: Increase ongoing training of local and state regulators in 21st century agricultural and food issues. Increase training of farmers, agriculture commissions, and others in public health and food safety.

Action 1.2.2: Explore and implement options for credentialing of the local public health workforce, accreditation of local health departments, and regionalization of local public health services and regulations, in order to increase capacity and expertise of local regulators.

Action 1.2.3: Increase the number of inspectors and their capacity to work with the private sector together to build toward compliance.

Action 1.2.4: Move regulation of slaughter oversight to MDAR, and create a state inspection program.

Recommendation 1.3: Make navigation of the regulatory environment easier across agencies and levels of government, and improve dissemination of regulatory information.

Action 1.3.1: Review and clarify the language of Good Manufacturing Practices (GMP) regulations, which are currently vague.

Action 1.3.2: Ensure that food processors are offered support when they seek support related to regulations. Provide resources, not penalties, as first line of action.

Recommendation 1.4: Improve communication systems for regulators.

Action 1.4.1: Develop and improve training programs for technical assistance providers, relying on UMass Extension and other food product and food processing service providers.

Action 1.4.2: Develop systems for cross-agency collaboration.

Action 1.4.3: Support communication between regulators, and develop forums where they do not exist.
Processing Goal 2

Food processing businesses will be supported in producing safe food.

As food moves through the food supply chain, a range of precautions are taken to make sure it arrives safely to those purchasing and eating it. Federal programs, such as GAP, Good Handling Practices (GHP), and GMP stipulate guidelines for agricultural and specialty food processing. FSMA is a new set of food safety laws with proposed changes that will have significant implications food processing and handling. The Massachusetts Food Code further defines sanitation requirements for food establishments in the state, and in addition to reiterating the federal GMP, lays out requirements for residential kitchens, mobile food units, and details on administration, licensing, and enforcement.

Effective manufacturing of safe food requires maintaining updated food safety standards, education for food safety law compliance, and predictability as well as consistency in regulatory enforcement. Though the FDA Food Code was last revised in 2013, the current Massachusetts Food Code is based on the FDA’s Food Code from 1999, and is in need of updating. UMass Extension has provided important resources for food entrepreneurs, farmers, and food manufacturing industry professional. As food safety becomes a greater concern and more stringent food safety laws are put in place, there is increasing need for these services. Improvements to these and other areas in food processing will ensure that food is processed using modern standards, and that the resources are available for producers and regulators to support safe food production.

Recommendation 2.1: Maintain an updated food code in Massachusetts.

   Action 2.1.1: Require the Executive Office of Health and Human Services’ Public Health Council to adopt the most current FDA Food Code, to bring the State up to date with the most recent science regarding food safety.

   Action 2.1.2: Establish a process by which the State will stay current with FDA Food Code.

   Action 2.1.3: Promulgate new information on FDA Food Code updates to local boards of health.

Recommendation 2.2: Expand training and support services for safe food handling and processing across state agencies and all levels of government.

   Action 2.2.1: Identify demand for services from UMass Extension and expand as needed.

   Action 2.2.2: Ensure that multilingual training in food safety is available through on-site, employer-sponsored English for Speakers of Other Languages programs, and support ongoing efforts in this area.

   Action 2.2.3: Encourage the State of Massachusetts to fund and support process authorities at UMass Extension.

Recommendation 2.3: Make food safety compliance resources available to food handlers and processors.

   Action 2.3.1: Maintain consolidated information on food safety compliance in an accessible print and online format, coordinated and updated by the Massachusetts DPH’s Food Protection Program.
Creamery incurs high costs due to inflexible plumbing code

When Pam and Ray Robinson decided to start building a creamery to make cheese on their Hardwick dairy farm in 2010, they ran into multiple unexpected expenses. While most creameries use PVC pipes for plumbing, the Massachusetts Building Code considers on-farm creameries to be commercial operations versus agricultural or residential and so required the Robinsons to use cast iron pipes. There was an appeal option, but no cheesemaker was known to be successful appealing at the State Board of Plumbing & Gas Fitters – and the process is long and delays are costly. The cast iron piping requirement, coupled with a required upgrade to a grease trap that was considered a sanitation risk by Mass DPH resulted in an additional $40,000 in costs.

Additional expenses may occur in the future, since cast iron tends to disintegrate from the acidity in whey and the acid wash used to clean equipment. The unexpected requirements did not enhance food safety, but rather increased potential food safety risks.

**Recommendation 2.4:** Develop best practices guides for food processing facility development.

*Action 2.4.1:* Develop guidelines for complex, multi-functional kitchen infrastructure development. Make these guidelines available online and in print, and ensure they are coordinated and updated by one central agency.

**Recommendation 2.5:** Ensure consistent enforcement of food safety regulations.

*Action 2.5.1:* Ensure continued support and funding for the Massachusetts Public Health Inspector Training that trains local regulators to uniformly enforce food regulations, and require that local regulators participate.

*Action 2.5.2:* Promote regional approaches to developing and enforcing food safety regulations.

*Related Goals and Recommendations:*
*Processing 1.2 and 1.3.2 and Farming 2 and 2.2.4*
Business and workforce development will meet the needs of the growing food processing industry.

The food processing industry, which includes manufacturing of food and beverages, represents about 3.6 percent of all businesses and seven percent of all jobs in the Massachusetts food system. Food manufacturing businesses and jobs have grown steadily as a percentage of the State food system. The majority of jobs in the food processing sector are held by frontline workers, who are low-wage, receive limited benefits, and are exposed to health and safety issues in the work environment. There are only limited opportunities for employees to rise to supervisory and management roles. Unionization in food processing affords employees somewhat higher wages, full-time employment, and better working conditions than in other sectors of the food system.

Efforts by Massachusetts non-profits, vocational schools, and higher education to foster culinary workforce training and entrepreneurship help more people access opportunities at higher-wage, skilled positions in the food processing sector. For example, North Shore Community College offers an Agriculture and Food Service program for students interested in a range of food related professional fields. Haley House in Roxbury engages men who have transitioned out of the prison system in café management and culinary training in their urban café. Community Servings in Jamaica Plain trains individuals interested in food service careers. Both Haley House and Community Servings work with individuals who are underemployed or face barriers to employment. An increasing number of shared-use rental commercial kitchens are also supporting entrepreneurship in food processing. These efforts and a range of additional strategies, including supporting on-the-job training, and identifying promising growth subsectors, like micro-brewing and distilling, will help the Massachusetts local food processing sector to grow jobs and businesses that support workers and entrepreneurs.

Recommendation 3.1: Ensure stable and safe employment in the food processing sector, with opportunities for advancement.

Action 3.1.1: Ensure living wages in food processing and related industries.

Action 3.1.2: Ensure resources, training, and placement for food processing workers, in particular for women, people of color, immigrants, veterans, former prisoners, and others from traditionally disadvantaged communities.

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**Action 3.1.3:** Develop a shared labor pool, comprised of workers trained in food processing or related fields. Do this by inventorying types of jobs and required skills, and developing a method for matching qualified workers to a range of jobs in food processing or related fields. Establish standards for, full-time, year-round, benefitted, and fairly compensated jobs in the shared labor pool.

**Action 3.1.4:** Support worker voice and collective bargaining for food system and related workers through legislation and regulation.

**Action 3.1.5:** Target financial and technical assistance to food processing businesses that offer opportunities for year-round employment.

**Recommendation 3.2:** Support enterprise development and growth for food processing businesses.

**Action 3.2.1:** Maintain, update, and expand as necessary the Massachusetts Food Processors Resource Manual, published by MDAR.

**Action 3.2.2:** Provide food processing entrepreneurs with technical assistance, financing resources, and business plan support in the startup phase, prioritizing businesses that use Massachusetts agricultural or seafood products as primary ingredients.

**Action 3.2.3:** Promote and leverage USDA grants and services, and provide technical assistance for grant applications and meeting program requirements.

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**CommonWealth Kitchen grows culinary jobs and businesses**

Entering the kitchen, your senses might first be filled with the spiced aroma of Fresh Food Generation’s jerk chicken sauce. But at CommonWealth Kitchen (CWK) it’s not just about the food – it’s also about the people. As foods are chopped, cooked, baked, and canned, CWK is hatching and growing culinary businesses and jobs, working to strengthen the local economy and build our local food system, particularly for people who experience racial, economic and social inequality.

Over 50 food businesses are currently using the kitchen, employing over 125 people, and are being connected to business development training and tools through CWK and its partner organizations. CWK also offers full-time, permanent employment to residents in its surrounding neighborhoods where long-term disinvestment has led to limited economic opportunities and to poverty. Since opening in 2009, CWK has launched 85 businesses and spurred creation of over 400 local jobs. CommonWealth Kitchen is causing a ripple effect, supporting viable culinary jobs and businesses in its kitchen and in the greater food system, and spurring reinvestment in communities.

**Related Goals and Recommendations: Processing 3.1, 3.2, 3.3 and Workforce 6.2**
Action 3.2.4: Establish and expand private investment options for those interested in supporting local food businesses.

Action 3.2.5: Invest in food processing businesses in growing industries.

Action 3.2.6: Foster increased local food product innovation and development in technical and vocational education settings, engaging with food processing businesses and institutions.

Action 3.2.7: Target resources to people of color, immigrants, former prisoners, veterans, women, and others from traditionally disadvantaged groups interested in owning and operating a food processing business.

Action 3.2.8: Establish and expand ingredient and product procurement forums and resources for farmers and food processors.

Action 3.2.9: Assess the market feasibility for meat processing, dairy processing, and other value-added food production, and support business development as the State and New England markets demand.

Action 3.2.10: Develop employment guidelines for businesses, and offer incentives for businesses implementing these guidelines.

Recommendation 3.3: Ensure that the food processing workforce is trained, skilled, and positioned to meet the changing needs of the State’s food system.

Action 3.3.1: Inventory skills needed for various jobs and offer on-the-job and formal training in these areas.

North Shore Community College provides pathway to food system careers

North Shore Community College (NSCC) has developed the Agriculture and Food Service Career Pathway for students interested in professions in the food system. Participating students can select from certificates and degrees in several fields including Environmental Horticulture, Culinary Arts & Foodservice, Hospitality & Tourism, Dietary Manager, Nutritional Science & Dietary Technology, and Food Science & Safety. Incorporating all of these degree options into one pathway provides students with an opportunity to understand the relationship among the various career fields, and see true farm to table in action.

NSCC works openly with the local community and business advisory boards for each program to gain vital input in tailoring the program to industry needs and identify opportunities for students seeking advanced degrees. As it adapts its programming, NSCC is considering expanding into aquaponics, vertical gardening, and urban farming.
Action 3.3.2: Train new and incumbent employees for work in the culinary arts, and other food system related jobs through agricultural, vocational, temporary employment agency and nonprofit training programs, on-the-job training, and on-site employer-sponsored ESOL education.

Action 3.3.3: Engage community colleges, regional employment boards, community development agencies, and other such entities to encourage the development of food processing workforce training programs.

Action 3.3.4: Identify industries in decline and develop employment transition training in food processing for displaced workers or workers in declining industries.

Action 3.3.5: Incentivize participation in training programs to encourage their use.

Action 3.3.6: Develop career pathways in partnership with food processing and other food businesses to support employee development.

Action 3.3.7: Provide technical assistance to operators and staff of meat processing facilities.

Recommendation 3.4: Grow scale-appropriate food processing equipment manufacturing in Massachusetts.

Action 3.4.1: Build partnerships between food processing businesses and educational institutions, such as engineering departments to design and develop intermediate-scale food processing equipment.

Action 3.4.2: Encourage local manufacturing of equipment and technology that meet the needs of small and mid-sized processing facilities.

Craft brewing businesses are springing up across the state – at recent count there were over 60 craft brewers in Massachusetts, according to the Massachusetts Grown and Fresher website. Savvy farmers, such as Nate L'Etoille at Four Star Farm in the Connecticut River Valley, are growing hops to tap into (pun intended) this growing industry. In 2014 Four Star Farm’s harvest yielded about 2,500 pounds of dried hops, and sold out quickly to breweries across New England. Demand for more hops pushed Four Star Farm to add ten new acres of hops to their existing six-acre hop crops.

With craft brewers seeking specific varieties of hops to achieve just the right nuance to their beers, Four Star Farm grows several different varietals whose flavor profiles are influenced by the soil and growing conditions of the region. In addition to hops, this fourteenth-generation, sustainable farm also grows grains, freshly milled flour, and turf.

Related Goals and Recommendations:
Processing 3.2

Four Star Farms increases hop production to meet craft brewer demands
Action 3.4.3: Support collaborative design of intermediate-scale food processing equipment that includes food processing professionals, designers, engineers, and manufacturers.

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

Recommendation 3.5: Develop opportunities for maximizing use of food processing facilities.

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.

Action 3.5.2: Promote year-round use of processing facilities.

Action 3.5.3: Develop opportunities for processing and preserving surplus produce that may otherwise be wasted.

Fresh-frozen veggies produced in a flash in Western Mass

The freezer at the (WMFPC) is cranking out flash-frozen, locally-grown, sliced carrots, broccoli, and peppers at a rate and quality that the WMFPC has never seen before. With their Individual Quick Freezer, the Food Processing Center produces 40 pounds of deep-frozen, high-quality produce in five minutes. In a year, WMFPC has the capacity to freeze about 250,000 pounds of locally grown produce. Once frozen, the vegetables are packed and delivered to local schools, hospitals, and other locations.

Picking up just one of their frozen carrot slices, as simple as it looks, connects you to an initiative that is making a significant difference for local growers, area schools and institutions, and for the WMFPC. One of many farm partners, the 300-acre Czajkowski Farm, is growing thousands of pounds of produce for the WMFPC. The WMFPC’s frozen vegetable enterprise is opening new markets and supporting value-added production. The WMFPC is working with large contract food service companies, and frozen vegetables are making their way into hundreds of schools, including UMass Amherst and Boston University. Through these efforts food access is improved, as more individuals dine on dishes made with high-quality, local produce – an experience that some might not otherwise afford.

Related Goals and Recommendations: Processing 4.1, Distribution 2.1, 3.2, 7.3, FASH 4.2 and 4.3.2
Processing Goal 4

Food processing infrastructure will meet the needs of the growing local food system.

Growing and scaling the food system in Massachusetts will depend on the availability of infrastructure, facilities, and equipment tailored to the needs of food producers, from land to sea. Farmers and fishermen interested in adding value to the foods they harvest requires a range of food processing facilities, from dairy and cheese processing equipment, to certified kitchen spaces for food preservation, to seafood and slaughter facilities. Burgeoning entrepreneurship in specialty food processing, food trucks, and catering is encouraging the development of multi-use, shared-use kitchens. Food hubs orchestrate a combination of aggregation, storage, distribution, food processing, and retailing, and these are taking shape in the State in a number of forms. Increasing demand for locally grown and caught food by public schools, universities, and hospitals is spurring innovation in the seafood and farming sectors to meet the needs of larger institutions. To effectively and economically distribute locally produced foods, logistics and technology systems are needed in order to sell foods while maintaining its local origin identity.

While significant infrastructure already supports Massachusetts food production and processing industries, it will be important to support strategic development of new infrastructure or use of underutilized infrastructure, as efforts increase to grow the State’s food processing capacity.

**Recommendation 4.1:** Invest in food processing and distribution infrastructure strategically to support current market conditions and future growth.

**Action 4.1.1:** Inventory existing infrastructure, system linkages, capacity, efficiencies, and bottlenecks, and assess current and projected needs for food aggregation storage, processing, and distribution strategies in Massachusetts and regionally.

**Action 4.1.2:** Conduct research to assess vulnerabilities of food processing facilities, distribution systems, and supply chains as these vulnerabilities relate to climate change, sea level rise, and severe weather events. Determine proactive measures that prepare for emergencies and long term impacts on these systems.

**Action 4.1.3:** Support a statewide industry association to help provide better connectivity between policy, regulation, financing, and institutions related to the food processing industry.

**Action 4.1.4:** Perform zoning, land, and regulation assessment for on- and off-farm food manufacturing facilities to identify regulations that may unintentionally inhibit processing.

**Action 4.1.5:** Ensure food processing infrastructure complies with technical, safety, regulatory, and accessibility standards.

**Action 4.1.6:** Inventory underutilized or seasonally-used food processing facilities, and strategize matching these resources to food processing business demand.

**Action 4.1.7:** Assess the need for additional shared kitchen facilities and equipment that supports specific activities, including baking, canning, freezing, storage, co-packing, and distribution.
**Action 4.1.8:** Assess the need, capacity, and site suitability for food hubs or food innovation centers that perform a combination of services, including aggregation, distribution, storage, food processing, food retail, and product research and development. The activities may take place in one facility, or may be occurring as a part of a larger network of activities.

**Action 4.1.8:** Identify and inventory needs for updating existing, aging, or vacant food manufacturing facilities. Ensure that proposed updates take zoning and land use into account.

**Action 4.1.9:** Invest in food processing facilities including poultry, beef, and fish processing, small-batch dairy, and co-packing, as local and regional markets demand their development.

**Action 4.1.10:** Identify all existing major financing resources for food processing, and consider the gaps for financing particular types of processing infrastructure.

**Action 4.1.11:** Leverage public matching funds for food processing development or redevelopment projects, as such projects align with local food system needs.

**Action 4.1.12:** Encourage private investment in food processing infrastructure, as such investments align with local food system needs. Support the work of organizations already encouraging such private investment.

**Action 4.1.13:** Establish and distribute funds for local food processing facilities and equipment, especially where funds support initiatives that increase local food procurement and support job growth.

**Recommendation 4.2:** Encourage sustainable practices in food processing.

**Action 4.2.1:** Encourage and support the use of innovative, responsible food packaging by offering companies incentives for using recycled materials or reducing packaging.

**Action 4.2.2:** Incentivize food processors to incorporate more locally-sourced raw products for processing and packaging.
Funding will be available for food business incubators.

Over the past decade, food business incubators in Massachusetts have served as valuable resources to encourage the startup and success of food enterprises in this growing industry. Incubators have supported a range of food businesses, including food trucks, caterers, and specialty food producers. Offering shared-use kitchen rental and business technical assistance services, food business incubators provide entrepreneurs with resources and services at reasonable rates in a collaborative environment. Doing so decreases the risks and capital requirements that typically come with establishing businesses independently, giving them a greater chance of success.

By fostering business growth, food business incubators support a range of businesses that can create jobs and benefit the local economy. With a significant number of start-ups committed to providing additional social benefits, food business incubators often also have a hand in supporting businesses that are improving food access, supporting farms and the fishing industry through sourcing local ingredients, and employing practices that are environmentally sustainable. They also contribute to community wealth-building, providing advancement for residents who otherwise lack opportunities.

As the food manufacturing industry continues to grow, incubators can play an important role in supporting project development and growth. Often established as nonprofit enterprises, and supporting businesses that are considered ‘high-risk’ with small profit margins, the sustainability and success of food business incubators is reliant upon additional investment. Public funding commitments and private investment will help ensure that ongoing efforts continue and new incubators can develop to meet food enterprise needs.

Recommendation 5.1: Research food processing capacity and demand for food business incubators.

Action 5.1.1: Inventory the capacity of existing food business incubators in Massachusetts to provide food storage, freezing, preparation, and distribution.

Action 5.1.2: Determine feasibility of expanding food business incubation through the use of existing commercial kitchen infrastructure.

Recommendation 5.2: Invest in food processing infrastructure to support food business incubation models.

Action 5.2.1: Fund strategic planning for food business incubator development.

Action 5.2.2: Identify public and private financing sources for food processing infrastructure and equipment for food business incubator development.

Recommendation 5.3: Develop financing and business support resources for food processing businesses working in incubators.

Action 5.3.1: Increase business development training in conjunction with financing options. Support ongoing efforts by community development corporations, The Carrot Project, Sustainable Business Alliance, Interise, the Salem Enterprise Center, and others.
Action 5.3.2: Facilitate awareness and delivery of subsidies and tax credits to food processing businesses that create jobs and/or buy local ingredients.

Action 5.3.3: Make seed funding available for food business start-ups that have a complete business concept and plan. Funding could be in the form of a revolving loan fund or grant funding.

Action 5.3.4: Educate about and promote alternative financing strategies such as royalty and contract financing.

Action 5.3.5: Develop new financing models that limit the risk burden for entrepreneurs who are committed to sourcing ingredients from local farms and minimizing environmental impact.

Action 5.3.6: Fund food processing businesses in growing industries.

Action 5.3.7: Establish revolving loan models that enable purchase of food processing equipment.

Action 5.3.8: Establish a lending library for processing equipment between shared use kitchens.

Action 5.3.9: Develop resources to assist food processing businesses during the transition from incubator-based to independently-operating businesses.

Action 5.3.10: Promote collaborative or co-owned processing facilities for farmers, fishermen and food processors where there is an identified need for such facilities and models.

Worcester Food Hub helps expand healthy, local food access

The Worcester Regional Food Hub is a collaborative that aims to support the regional economy and address food justice issues by expanding access to healthy, locally grown products. Co-led by the Regional Environmental Council and the Worcester Regional Chamber of Commerce, the collaborative’s planning efforts have included stakeholder engagement and identifying opportunities for strengthening the regional food system and filling critical gaps.

Plans for 2016 include piloting several initiatives, including supporting food access projects, facilitating hub-to-hub relationships, and undertaking some food aggregation and distribution. The impact of the pilot-year initiatives will inform the final business plan and operational and financial model of the Worcester Regional Food Hub. Story courtesy of April Anderson Lamoreaux and Brian Monteverde

Related Goals and Recommendations: Processing 4.1
Financing for small food businesses funds food processing equipment

Despite a devastating fire that leveled Mi Tierra’s restaurant in 2013, the restaurant is thriving today and you can find Mi Tierra’s delicious corn (local and organic) tortillas in stores all over the Connecticut River Valley. This seemingly quick recovery is thanks in no small part to outpouring of community support and a microloan from the Samuel Adams Brewing the American Dream program in conjunction with the Holyoke-based Common Capital.

Common Capital is a community loan fund and non-profit organization that provides financing and business assistance to small businesses and community projects. The funding helped purchase a new tortilla making machine, which produces 4,800 tortillas per hour instead of the approximately 90 tortillas owner Jorge Sosa, and his wife Dora Saravia and helpers were producing by hand. Equipment, such as Mi Tierra’s tortilla processing machine, can be out of reach for many small businesses, without the help of funding and financing.

Related Goals and Recommendations: Processing 5.2 and 5.3
Food distribution is the means by which food gets to people. In Massachusetts, food delivery encompasses trucking, food storage, and emergency food aid. It is closely connected to both food production and food processing, and is a complex, market-driven system of direct sales, wholesale transactions, institutional procurement, and food donations. Building the local food economy, increasing access to healthy local food for all Massachusetts residents, and adhering to food safety protocols require innovation and support for cost-effective food distribution.

The distribution of local food hinges on meeting current demand, potential increased demand created by this plan and by future market forces, and impact from external factors and disruptions. The Distribution and Marketing goals and recommendations focus on marketing and increasing consumption of Massachusetts-produced food and providing technical assistance to food distribution businesses at all stages of business development.
Distribution Goals

**Goal 1:** The distribution system will support opportunities for equitable access to fresh local food.

**Goal 2:** Massachusetts-produced foods will be distributed more cost effectively.

**Goal 3:** Support for, and innovations in, cost-effective local food distribution will increase.

**Goal 4:** Technical assistance and support for distributors will respond to the diversity, differences of scale, and market forces of products produced by local producers.

**Goal 5:** Food safety regulations and certifications will be science- and scale-based and effective.

**Goal 6:** Food safety education at all levels will be improved.

**Goal 7:** Farm to institution sales will increase.

Marketing Goal

**Goal 1:** Massachusetts-produced food will be marketed more effectively.
Distribution Goal 1

The distribution system will support opportunities for equitable access to fresh local food.

Local food has important implications for nutrition and health, as discussed in the FASH section of Goals. Fruits and vegetables picked and eaten or preserved at their peak have the greatest nutritional value. But residents of many urban and rural communities don’t have easy access to fresh or culturally-relevant produce because of a lack of nearby retail food stores, or a lack of public transportation to get to stores.

The Massachusetts Food Trust was established by the legislature in 2014 to provide loans, grants, and technical assistance to support new and expanded healthy food retailers and local food enterprises in low- and moderate-income communities. This could include supermarkets, corner stores, cooperative food enterprises, farmers markets, mobile markets, community kitchens, food truck commissaries, indoor and outdoor greenhouses, and food distribution hubs. To date, the Trust has not received funding.

Building alliances among health advocates, agencies, insurers, and regulators will increase access to fresh produce. Increased retail accessibility can be accomplished through public support of farmers markets, which provide direct distribution mechanisms for healthy, local food, particularly in areas poorly served by traditional food retailers.

**Recommendation 1.1:** Support public and private investment to capitalize and implement the Massachusetts Food Trust.

- **Action 1.1.1:** Encourage and support $10 million in public financing for the Massachusetts Food Trust, which would allow additional private funds to be raised.
- **Action 1.1.2:** Identify additional dedicated public and private sources of funds to support the Massachusetts Food Trust.
- **Action 1.1.3:** Provide loans, grants, and technical assistance through the Massachusetts Food Trust to support new and expanded healthy food retailers and local food enterprises in low- and moderate-income communities that will create jobs.

**Recommendation 1.2:** Support growth of traditional retail food establishments in communities with unmet needs.

- **Action 1.2.1:** Fund and publish retail analysis, using community engagement research practices, that demonstrates unmet demands for healthy and local food, and highlight areas of opportunity and market potential for grocers and developers.

**Recommendation 1.3:** Harness public demand for and commitment to local food and culturally appropriate and preferred crops to drive increased availability.

- **Action 1.3.1:** Provide public support to farmers markets to market local foods and expand the number of Massachusetts residents consuming local food.

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Urban food growing launches culturally-based school food operation

Nuestras Raíces is a 23-year-old urban agriculture and economic justice organization founded by the Latino community in Holyoke. The organization supports a network of 13 community gardens and a 30-acre urban farm dedicated to cultivating, sharing and selling the treasured cultural crops beloved by Latino families.

Youth development, microenterprise support, farm to school, and cultural crops are all focuses for Nuestras Raíces. The organization is launching the first culturally-based school food operation in a local charter school, using the USDA national school lunch program, recruiting and training 100 new Latino cultural crop farmers, expanding greenhouses, and improving their cultural agritourism farm site.

Action 1.3.2: Increase State funding for buy local organizations to at least $500,000 annually.

Action 1.3.3: Support and expand the UMass Ethnic Crops Program Amherst’s Stockbridge School of Agriculture.

Action 1.3.4: Conduct a study of cultural produce preferences and needs. Disseminate results to farmers to inform crop selection based on market demand.

Recommendation 1.4: Define and expand the role that health advocates, health care agencies, insurers, and regulators play in increasing the demand for and consumption of healthy, local food in all communities.

Action 1.4.1: Continue to educate health care providers, regulators, and medical schools about the ways they can increase the public’s consumption of healthy, local food.

Action 1.4.2: Develop an inventory of effective local food incentive programs and best practices to share with health practitioners and insurers.

Action 1.4.3: Replicate and disseminate best practices by health care providers that increase the consumption of healthy Massachusetts-produced foods.

Action 1.4.4: Continue to support health care providers and regulators to incentivize purchases of healthy, Massachusetts-produced foods, through programs such as vegetable prescriptions and other healthy food incentive programs.

Related Goals and Recommendations:
Distribution 1.3
Distribution Goal 2

Massachusetts-produced foods will be distributed more cost effectively.

The food distribution system is a complex network of producers and purchasers that operate across wholesale and retail food outlets, including institutional settings, grocery stores, convenience stores and bodegas, restaurants, and farmers markets. Integral to the movement of food from producer to the final customer is a network of buyers, trucks, and storage facilities.

Local foods can be routed separately in a relatively short supply chain, such as farm to farmers market, or in longer chains around the region or the globe. Small producers and retailers experience difficulty connecting with the existing distribution system, which is optimized for efficiently moving large quantities of product. Several factors contribute to this difficulty: the small size of the producer or retail operations, the quantity of their product, and a lack of knowledge of distribution options.

The distribution methods for local food currently in effect are often inefficient and costly, which tends to marginalize products from smaller operations. Larger operations either have secured a place in the distribution network through their volume, or have their own fleet of trucks.

The wholesale market also has specific requirements for product preparation and packaging that differ significantly from retail requirements. All of these factors can deter small producers from being able to enter the wholesale market.

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

   Action 2.1.1: Dedicate resources for a full-time staff position at MDAR to provide technical support and build relationships to facilitate Massachusetts farms, fisheries, and businesses to participate in the wholesale and hotel, restaurant, and institution markets.

   Action 2.1.2: Educate retailers and distributors about the benefits of carrying and promoting Massachusetts products.

   Action 2.1.3: Provide information to distributors about locally grown, raised, caught, and produced products available for wholesale in the State.

Recommendation 2.2: Strengthen coordination of distribution across producers, distributors, wholesalers, and retail operators.

   Action 2.2.1: Develop and pilot workable arrangements that avoid empty or partially empty loads in shipping vehicles and disseminate as models.

   Action 2.2.2: Support the work of distribution ‘matchmakers’ that connect food producers and processors with markets.

Recommendation 2.3: Understand and map existing production and processing systems and the distribution patterns associated with them as a tool for greater efficiency.
**Distribution and aggregation model brings cultural crops to inner city**

Founded in 1988, the Pioneer Valley NE Growers Coop works with skilled farmers who lack resources to run their own operations. These farmers, who in their home countries cultivated crops for a living, are in Massachusetts as seasonal workers or resident farm workers. Hankering for familiar produce, they began to grow it on small plots within the larger farms that they were working. These crops were shared between farm owners and workers, and interest grew in marketing this produce, helped by the Stockbridge School of Agriculture. The Coop, in partnership with the landowners and the farm workers, is bringing these crops to inner city customers.

This model of distribution and aggregation – admittedly small-scale – unites talented farmers and supportive landowners to bring fresh, cultural crops, like callaloo, to urban residents. Its success counts on founder and president, Glenroy Buchanan, CISA’s 2011 Local Hero Awardee, and his network of growers. Effective distribution relies on the alignment of consumer demand and supply and the Coop has found a way to make these links to the benefit of all parties, including churches, restaurants, and individuals.

*Related Goals and Recommendations: Distribution 2.2 and 3.2, FASH 6.1.1*

**Action 2.3.1:** Collect information on wholesale sales and distribution for specific products such as cranberries, apples, dairy, lettuce, maple syrup, summer squash, winter squash, tomatoes, as well as other important Massachusetts products and cultural foods. Use this data as a benchmark to measure efforts to increase local production in the Commonwealth.

**Action 2.3.2:** Research and disseminate information about the chain of certification from producer to wholesale dock, especially in regard to non-Massachusetts and global production, and use that information to propose changes in distribution practices to provide better access to wholesale markets for local producers.

**Action 2.3.3:** Analyze successful and failed distribution business models and develop case studies. Disseminate the information and data.

**Action 2.3.4:** Inventory and map aggregation opportunities that can facilitate small-scale producers selling to large-scale operations. As part of this information, gather data on quality specifications, packaging, and volume requirements.

**Action 2.3.5:** Create and maintain a publicly available list and map of distribution, storage, and aggregation operations, including capacity, location, and services for produce, farm products, processed food, and fish and other seafood.

**Action 2.3.6:** Develop and disseminate tools for food producers that enable them to identify markets based on their product specifications and quantities.
**Recommendation 2.4:** Identify, review, and revise State policies that help or hinder the distribution of Massachusetts-produced and -processed foods.

**Action 2.4.1:** Identify, through discussion with public and private stakeholders, State policies that impede the distribution of Massachusetts food, and revise accordingly.

**Action 2.4.2:** Disseminate information to food system businesses about programs that support purchasing of local goods, including E.O. 503 Small Business Purchasing Program and the Supplier Diversity Program.

**Action 2.4.3:** Develop and share standardized contract language for all State agencies and municipal purchasers to enable greater purchasing of Massachusetts-produced food products.

**Action 2.4.4:** Allow hard copy business paperwork to be filed at regional offices, rather than only in Boston.

**Action 2.4.5:** Provide better information for co-operative enterprises by adding an electronic template/option or co-op incorporation forms on the Secretary of State website and by adding language appropriate to all kinds of business models.

**Action 2.4.6:** Set legislative standard to review science-based health regulations every five years.

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**Peapod sources and distributes local produce for farmers**

Peapod, the grocery delivery program for Stop & Shop Supermarket, is now bringing local farm produce to doorsteps in eastern Massachusetts and Rhode Island. Produce is sourced from four farms – Town Farm, Ward’s Berry Farm, the Kitchen Garden, and Langwater Farm – as well as the Farm Fresh Rhode Island food hub. The $34.99 Peapod Local Farm Box contains different produce depending upon the season, harvested at its peak.

While this model isn’t new – Boston Organics, Valley Green Feast, Berkshire Organics, and others are also aggregating local farm products and delivering them to homes in Massachusetts – what is new is that the Peapod model is one of the first examples of a large grocery store chain teaming up with local farmers to make local produce available to its customers. With Stop & Shop and Peapod’s ability to distribute groceries efficiently and widely, markets for local farms could expand and customers who might not typically seek out local produce could be introduced to the variety of vegetables and fruits grown in Massachusetts.

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**Related Goals and Recommendations:**

*Distribution 2.2*
Distribution Goal 3

Support for, and innovations in, cost-effective local food distribution will increase.

Massachusetts lacks sufficient food distribution infrastructure to support the increasing production of and demand for local foods. Sufficient partnerships between businesses, processors, institutions, and producers need to be built to create economies of scale for local producers. Doing so could facilitate cost-effective processing and distribution and provide stronger stimulus for local economic development and innovation.

Recommendation 3.1: Set up a State-funded economic development fund to support and spur innovation in local food aggregation, processing, and distribution.

  Action 3.1.1: Convene public and private stakeholders, as well as educational institutions, to conduct a needs assessment and develop creative ways existing food distribution infrastructure can be used more efficiently to increase cost effectiveness.

  Action 3.1.2: Gather and disseminate information and data on how businesses are innovating and the supports they need.

  Action 3.1.3: Attract public and private investment for food distribution innovation through a new economic development fund. Coordinate operations of the proposed fund with the MassDevelopment’s efforts to increase distribution efficiencies and innovations.

  Action 3.1.4: Support prototyping of new ideas and ventures with investment and grant opportunities, including development of agricultural cooperatives, regional aggregation centers (food hubs) by third party entities, cooperative distribution models, cooperative distribution from farmers markets, and approaches that use technology to reduce food distribution costs.

  Action 3.1.5: Develop technology such as source-tracking systems like that used by Red’s Best, to provide increased market data and serve as an online clearinghouse and marketplace for listing, distributing, and selling locally-produced and -processed foods, to connecting producers, distributors, and buyers.

  Action 3.1.6: Fund incentives for producers to act on market research related to new and emerging products and changing consumer demands.

  Action 3.1.7: Provide financial support for food co-op startups.

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

  Action 3.2.1: Engage colleges and universities that focus on business and entrepreneurship to support the development of innovative distribution businesses.

  Action 3.2.2: Increase connectivity between industry players, startup businesses, and supply chain producers of processing and distribution equipment to identify opportunities for strengthening the local innovation ecosystem and catalyze new partnerships and relationships.

Recommendation 3.3: Use food preservation processes, including freezing, dehydration, and canning, to increase sales of Massachusetts products in locations where local and lightly-processed products are
priorities, such as public schools, or in convenience stores where storage space may be limited, as well as other retail and wholesale outlets.

**Action 3.3.1:** Finance, construct, and operate infrastructure for local storage including ambient, refrigerated, and frozen storage as well as freezing facilities to complement the processing of lightly-processed produce in shared-use kitchens, food hubs or other facilities.

**Action 3.3.2:** Develop farm to small wholesale and retail business models (including bodegas) to sell frozen, ambient-temperature, and refrigerated produce. Develop grant programs to support the models.

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**Boston Public Market increases the market for local food**

The Boston Public Market, which opened its doors in July 2015 with nearly 40 local and regional farm, fish and food vendors as well as 200 small businesses, will have a positive economic impact for businesses in the state food system. Open year-round, five days a week and carrying only items produced or originating in New England, this kind of market is quite unusual. Vendors will benefit from the increased demand from the market, and meeting this demand could mean that they are able to expand their operations. More demand is likely to translate into more jobs, with vendors and with the Boston Public Market.

The Boston Public Market welcomes SNAP benefits, as well as Boston Bounty Bucks. In their demonstration kitchen, the Boston Public Market will offer workshops and events, some free of charge, that will inspire cooking with local foods.

*Related Goals and Recommendations: Distribution 2.1, 2.2 and 4.1.5, Fishing 3.1, FASH 7.4*
Distribution Goal 4

Technical assistance and support for distributors will respond to the diversity, differences of scale, and market forces of products produced by local producers.

Investments in food safety certification processes, business start-up, growth and management supports, financing, and other areas can improve sales and grow businesses for food producers and distributors. Massachusetts is fortunate to have a wide range of organizations and entities that provide technical assistance, including UMass Extension, other universities, buy local organizations, as well as nonprofit organizations. Increasing the usefulness of this technical assistance requires a two-pronged approach: increase the amount of assistance available, which is currently insufficient to meet the needs of food producers and distributors, and increase communication amongst the diverse providers to optimize their services.

Recommendation 4.1: Increase technical assistance for food distribution businesses (e.g., storage, transportation, and aggregation).

Action 4.1.1: Conduct a survey to establish technical assistance needs and create an inventory of existing technical assistance resources. Based on the survey results, develop education and support resources for food business operators and innovators related to creating business connections, becoming finance-ready, and accessing financing.

Action 4.1.2: Engage existing business support providers (e.g., Small Business Association, The Carrot Project, and Conservation Law Foundation) in further developing and delivering needed technical assistance to local food producers, distributors, and retailers.

Action 4.1.3: Support Massachusetts higher education programs in the development and offering of appropriate curriculum to meet the needs of locally based food system businesses. Promote these programs.

Action 4.1.4: Provide education to business owners on the various business structures with a focus on those that best support maintaining local ownership and streamline all forms, reporting, and technical assistance, including through online means.

Action 4.1.5: Support models of food distribution that provide good wages and benefits, full-time jobs, opportunities for career advancement, and safe work environments.

Action 4.1.6: Coordinate a network to encourage peer-to-peer learning and to facilitate the transfer of knowledge of the food wholesale system.
Distribution Goal 5

Food safety regulations and certifications will be science- and scale-based and effective.

Food safety is critical in food distribution, and should be a clear focus as new local food storage and distribution measures and infrastructure are implemented. Food safety regulations at all levels of government target the distribution link in the food chain. Complying with regulations designed to protect food safety can be complicated, but it is an essential part of doing business in the food system.

FSMA will have a significant impact on food safety processes, procedures, and requirements for eligible farmers across the Commonwealth. Even those who are exempt from FSMA due to farm size or aggregation criteria will need to be familiar with these regulations, as large buyers will likely rely upon these standards for purchasing.

Food producers, distributors, and retailers understand the need to comply with relevant municipal health codes but report that regulations and enforcement vary from community to community, and that interpretation of regulations is inconsistent, leading to less efficient and ultimately less sustainable operations.

Recommendation 5.1: Strengthen the Commonwealth Quality Program (CQP).

**Action 5.1.1:** Expand the role and purpose of CQP as a sustainability program and a food safety certification and regulatory certainty program.

**Action 5.1.2:** Gather data and modify key program requirements to increase the local use of CQP as a market access tool for wholesalers and retailers.

**Action 5.1.3:** Increase participation in the CQP program, through outreach and education, for direct-market farms to ensure they employ and maintain the same food safety and environmental practice requirements as farms required to do so for market access.

**Action 5.1.4:** Establish a CQP technical steering committee with members of MDAR, MassDEP, DCR, DMF, UMass Extension, and other identified State and federal partners to maintain program sector requirements and provide timely science-based updates to the program as well as emerging regulatory inclusion.

**Action 5.1.5:** Develop resources to provide food safety regulation information, technical assistance, and training including through MDAR, DPH, and UMass Extension.

**Action 5.1.6:** Adopt CQP as Massachusetts’ farm food safety standard to meet all federal requirements.

**Action 5.1.7:** Establish a system of certification pre-audits that are available for producers prior to official audit.

**Action 5.1.8:** Ensure that MDAR has personnel resources to conduct audits or contract with third parties to audit.
Recommendation 5.2: Ensure local regulation (particularly by boards of health) is consistent, achievable, and effective.

Action 5.2.1: Review and revise, with input from DPH, producers, and retailers, existing model policies that can be adopted by boards of health regarding specific or regional food safety concerns, and create new ones where needed there are gaps.

Action 5.2.2: Create clear expectations and interpretation of the food code, and a mandatory public process for issuing DPH and local board of health regulations so that all stakeholders are involved in the process of crafting and reviewing proposed regulations prior to implementation.

Recommendation 5.3: Improve communication among State agencies and local boards of health that are involved in food safety.

Action 5.3.1: Fund a coordinated effort to expand the makeup and scope of existing statewide Massachusetts food safety advisory groups, in interpreting and providing recommendations on implementing, and enforcing food safety regulations related to local food production and distribution.

Action 5.3.2: Strengthen relationships between local boards of health, DPH, buy local organizations, and other organizations to share information and improve dialogue.

Recommendation 5.4: Ensure food safety protocols/regulations are in place and enforced through the entire supply chain, and that producers, processors, distributors, and retailers are supported in meeting these regulations.

Action 5.4.1: Create instructional resources for producers on the food safety protocols along the value chain, especially as FSMA is implemented.
**Action 5.4.2:** Require training for all boards of health agents on the Massachusetts Food Code, food safety, best practices, and FSMA, conducted by DPH, Massachusetts Health Officers Association, and the Massachusetts Association of Health Boards.

**Action 5.4.3:** Provide State support and technical assistance to local boards of health developing food safety regulations.

**Action 5.4.4:** Fund and build capacity of regional organizations to provide food safety and handling training that is accessible to all boards of health in each region.

**Action 5.4.5:** Develop and integrate throughout MDAR and UMass Extension technical assistance to producers in obtaining and maintaining food safety certifications as required by buyers and FSMA, along with technical assistance for the CQP and GAP.
Distribution Goal 6

Food safety education at all levels will be improved.

Food safety is a concern to stakeholders in all sectors of the food system, from producers to retailers, restaurants workers, and consumers. Effective food safety practices are essential for the health of the general public, as well as the economic well-being and growth of Massachusetts food businesses. Yet there is a lack of food safety education programs and resources to adequately inform stakeholders, especially consumers, about relevant food safety information and practices.

A leading food safety concern is the general and widespread confusion about the meaning of product shelf life labels (e.g., “use before” and “best by” dates). This affects consumers, retail food workers, distributors, food banks, pantries, and meals programs. Similar uncertainty exists about the shelf life of frozen foods, as well as the definition of “perishable.”

Recommendation 6.1: Improve the availability of, and outreach for, consumer food safety information.

**Action 6.1.1:** Provide support to the Massachusetts Partnership for Food Safety Education to improve consumer food safety education programs. Focus on product labeling, freshness dating, and related information.

**Action 6.1.2:** Create a program of public education and point-of-sale signage about safe handling of food during and after purchase.

Recommendation 6.2: Improve the availability of, and outreach for, food safety training, technical assistance, and information for food system workers.

**Action 6.2.1:** Educate retail food sellers, restaurant workers and managers, farmers market operators, and others in food distribution about food donations that can be made to food banks, pantries, and meal programs without liability. Focus on product labeling, freshness dating, and related information.

**Action 6.2.2:** Make available, at MDAR’s Division of Agricultural Markets, technical expertise to deploy cold-chain packaging and grading training to increase the quality and availability of specialty crops through wholesale and retail channels.

**Action 6.2.3:** Include consumer food safety and label reading as part of high school health or nutrition curricula.

**Action 6.2.4:** Expand the capacity of the UMass Extension Nutrition Education Program and the Massachusetts Partnership for Food Safety Education to address food safety issues.
**Distribution Goal 7**

**Farm to institution sales will increase.**

Sale of local foods to schools, hospitals, universities, and other large food purchasers has increased in recent years. This creates opportunities for food producers – especially mid-scale producers – to sell large volumes of their products, and earn more than they typically would in a wholesale market. Schools serving local food are finding that, when local food is paired with educational programming, students are more receptive to eating vegetables. Hospitals recognize the health benefits for patients and staff, and are increasingly integrating local food offerings into their menus, in addition to other initiatives that encourage improved diets.

As farm to institution sales increase, it will be important to address the challenges and opportunities that come with participation. Producers and buyers new to farm to institution transactions must learn about complex certification and procurement practices, and insurance requirements. Current law (Mass. Gen. Laws, ch. 7, § 23B) asserts that State institutions ‘shall’ purchase local foods, allowing them to spend up to ten percent more for local foods. However, there are currently no methods for tracking these purchases, nor repercussions for State institutions not purchasing local food. In many cases increased awareness is needed among food services staff about area farms in order to find available food in the right quantities, particularly in the off-season times of the year. Public schools, whose food buying is done using federal money, also have federal procurement regulations with which to comply.

In addition to policy reform, continued collaboration between food producers, buyers, and support organizations has the potential to positively impact agricultural and seafood economies, and the availability of local foods for a range of populations.

**Recommendation 7.1:** Reform and implement local food procurement policy for institutions.

- **Action 7.1.1:** Mandate minimum local food procurement for State universities and colleges, in addition to State agencies, and provide adequate reporting requirements and staffing for enforcement.
- **Action 7.1.2:** Increase purchase allowance for local foods for all State colleges, universities, day-care providers, and K-12 schools.
- **Action 7.1.3:** Increase funding for State agency and institutional local food procurement.
- **Action 7.1.4:** Establish a tracking mechanism and reporting requirement for local food purchasing by public institutions.
- **Action 7.1.5:** Establish benchmarks for local food procurement by State institutions. Consider modeling these benchmarks on already existing benchmark goals, like the Massachusetts Executive Branch’s targets for purchases from minority- and women-owned businesses.
- **Action 7.1.6:** Develop guidelines for municipalities to increase the threshold below which they may make direct purchases to enable larger purchases from farms.
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**Action 7.1.7:** Develop guidelines for private institutions to create policies and standards for increasing local food procurement.

**Recommendation 7.2:** Commit and leverage resources to increase for farm to sales.

**Action 7.2.1:** Commit funding for technical assistance services and resources for farm to institution producers and buyers.

**Action 7.2.2:** Develop and maintain an accessible, central inventory of institutions, farmers, fishermen, processors, and agencies in the farm to institution network to facilitate communication and distribution among the producers, buyers, and organizing agencies.

**Action 7.2.3:** Track, label, and market local food distributed through farm to institution channels as ‘local.’

**Action 7.2.4:** Promote best practices for local food procurement. Build on best practices used by institutions procuring local food, and research from buy local groups and other industry service providers, including by expanding efforts to collectively procure local food by public institutions and by developing innovative procurement practices to enable more regular local food purchasing, particularly in public schools.

**Recommendation 7.3:** Increase participation of food producers and buyers in farm to institution procurement.

**Action 7.3.1:** Extend local food procurement programming to more public and private institutions, including primary and secondary schools, universities, hospitals, health care facilities, correctional facilities, elder care facilities, restaurants, grocery stores, and other food retail businesses.

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**Freedom Food Farm delivers fresh food to workplaces**

Freedom Food Farm in Raynham is one of many CSAs in Massachusetts that offer weekly workplace deliveries of fresh produce. Owner and manager Chuck Currie says his farm delivers more than 60 shares to members at four local businesses each week.

Workplace CSA deliveries are another way to increase the market for locally grown food, offering a buying option for people who might not otherwise be able to visit a farm or farmers market. The nonprofit Community Involved in Sustaining Agriculture (CISA) offers a free guide to CSA owners and workplaces on how to recruit members and organize weekly pickups.

**Related Goals and Recommendations:**

**FASH 7.4.2**
**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.

**Action 7.3.4:** Increase distribution of locally caught or raised seafood in institutions.

**Action 7.3.5:** Increase opportunities for the production of value-added food products for farm to institution distribution. Examples are fresh or frozen cut fruit and vegetables, and more complex, processed foods, like fish cakes.

**Action 7.3.6:** Encourage programming that complements farm to institution initiatives in public and private universities and schools, such as schoolyard gardening, and agriculture and nutrition education.

**Action 7.3.7:** Encourage programming that complements institution initiatives in public and private health care facilities, such as vegetable prescription programs.
Marketing Goal 1

Massachusetts-produced food will be marketed more effectively.

The food industry is huge, complex, and competitive. Food businesses spent more than $130 billion on advertising in the U.S. in 2013. Getting consumers’ attention is challenging and costly.

A strong brand and market development program for Massachusetts-grown and -produced food will help build consumer markets and institutional demand, and increase farm and food business viability. With a long history of successful statewide branding and buy local campaigns, there is ample evidence in the State of the value of these efforts. At the same time, however, the number of campaigns and brands has caused some confusion among consumers, and the lack of a universally understood definition of ‘local’ has allowed for dilution of some important efforts.

Statewide and local brands can help grow demand for Massachusetts products within the Commonwealth and beyond. Establishing a brand identity for food products that communicates the values of the State’s food system businesses, such as sustainable management practices, a commitment to food safety, and support for the local economy, can build awareness of and support for the products produced here. The success of these campaigns requires a comprehensive, adequately funded, integrated approach that engages players at every link in the supply chain.

Recommendation 1.1: Develop and maintain market data and information and disseminate to producers.

  Action 1.1.1: Develop a metric to measure consumption of Massachusetts-grown and -processed foods, including seafood and seafood products.
  Action 1.1.2: Explore methods of tracking local food purchases to inform market development, using a system such as the one successfully being used by local fisheries, developed by Red’s Best.
  Action 1.1.3: Conduct research on the market impact of production and management practices – such as organic certification, the use of GMOs, the use of alternative fuels, and others – and disseminate that information to farmers and producers to inform their responses to demand.

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

  Action 1.2.1: Develop standardized guidelines regarding the use of the word ‘local’ when advertising and marketing food. The guidelines should be designed primarily to support Massachusetts growers, fishermen, manufacturers, and retailers, and secondarily to support New England growers, fishermen, manufacturers, and retailers.
  Action 1.2.2: Dedicate funding to engage outside expertise to evaluate the effectiveness of existing MDAR brands including Mass Grown and Fresher, Made with Pride, Savor Massachusetts, Commonwealth Quality, and other local and regional brands. Based on the findings, develop funding and marketing recommendations for revived programs or for a new branding initiative. Develop program requirements to ensure that any products bearing the brands are grown.

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processed, and distributed following appropriate food safety standards and using environmentally sustainable practices. Develop and implement strategies to educate the public about the program’s standards. Provide funding for a full-time brand manager based at MDAR to oversee the program.

**Action 1.2.3:** Dedicate funding to support buy local organization promotion efforts, the Massachusetts Seafood Marketing Program, and other sectoral marketing campaigns. Incentivize and support these branding efforts to collaborate with and complement State campaigns. Establish a board, chaired by MDAR and comprised of buy local and commodity groups, to facilitate coordination of branding and marketing efforts where appropriate.

**Action 1.2.4:** Promote the use of the Massachusetts State brand by food businesses distributing local foods and food products outside of Massachusetts.

**Action 1.2.5:** Collaborate with New England and other Northeastern states in the integration of standards, co-promotion of state brands, strengthening and promoting the Harvest New England Brand, and identifying opportunities where the regional brand should be used.

**Action 1.2.6:** Have the Massachusetts Attorney General enforce truth-in-advertising laws on food products sold in Massachusetts concerning point of origin and other claims.

**Action 1.2.7:** Train farmers and fishermen in point-of-sale packaging, branding, labeling, and identification, particularly when selling in the wholesale chain.

**Recommendation 1.3:** Provide education and connections throughout the food chain to promote the value of Massachusetts-raised ingredients and Massachusetts-processed foods.

**Action 1.3.2:** Develop a grant program for innovations in agricultural marketing related to production, processing, marketing, and distribution.

**Action 1.3.1:** Strengthen technical assistance capability within MDAR to help farms develop integrated, cost effective marketing plans for both retail and wholesale channel development.

**Action 1.3.3:** Provide technical assistance and marketing resources to strengthen farmers markets, CSAs, and roadside stands.

**Action 1.3.4:** Provide incentives to local processors, distributors, retailers, and restaurants that feature Massachusetts-grown and -produced foods.

**Action 1.3.5:** Dedicate MDAR staff resources to facilitate interactions between growers and producers of Massachusetts foods, retail and wholesale buyers, and individual businesses, to develop direct sales relationships.

**Action 1.3.6:** Strengthen inter-agency collaboration between MDAR, Massachusetts Office of Business Development, the Massachusetts Small Business Administration, universities, and others to support the development of new value-added market opportunities.

**Action 1.3.7:** Identify, support, and expand opportunities for the development of markets outside of the Commonwealth, regionally, domestically, and internationally through the establishment of targeted out-of-area promotional and sourcing plans.
**Action 1.3.8:** Promote export development programs and services at the State and federal level to Massachusetts farms and other food businesses, and coordinate development and expansion of these markets.

**Recommendation 1.4:** Educate retail-level food system businesses and consumers about local foods.

- **Action 1.4.1:** Develop contacts, resources, and incentives that facilitate the purchase of local food and agricultural products by retail and wholesale food buyers, restaurants, and shoppers.
- **Action 1.4.2:** Provide seasonality education targeted for both retail-level produce and seafood buyers and consumers.
- **Action 1.4.3:** Provide training for consumers and chefs on use and sourcing of seasonal produce and seafood.
- **Action 1.4.4:** Expand the State’s culinary tourism and agritourism programs to draw visitors to farms and businesses that feature locally grown and produced products, such as dairies, wineries, distilleries, cider producers, agricultural events, festivals, and restaurants that feature local products.
- **Action 1.4.5:** Develop educational materials to improve public understanding about how food is produced and the costs of production as related to retail prices.
- **Action 1.4.6:** Develop consumer educational materials about nutritional value of frozen, canned, dried, and otherwise preserved foods.
- **Action 1.4.7:** Expand nutrition education available through the UMass Extension Nutrition Education Program and UMass Amherst’s School of Public Health and Health Sciences’ Department of Nutrition regarding consuming, cooking, preserving, and nutritional of local and cultural foods.

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**CISA leads the buy local movement**

“Be A Local Hero: Buy Locally Grown” is one of the most recognized slogans in Western Massachusetts, thanks to the work of Community Involved in Sustaining Agriculture (CISA), the nation’s first ‘buy local’ organization.

Today, Massachusetts is home to ten of these buy local groups, working to connect farmers with consumers so that local economies are strengthened, farms are supported, and residents eat well. These groups offer technical assistance to farmers and do extensive marketing and education work to highlight the value of buying local food.

Thanks in part to their work, Massachusetts is a leader in direct to consumer sales of agricultural products.

**Related Goals and Recommendations:** Marketing 1.3.2, Distribution 2.1.2
Goals and Recommendations

For many Massachusetts residents, factors such as food prices, proximity to grocery stores, household income, transportation, and lack of knowledge about how to cook and store food can present barriers to reliably buying and consuming fresh, healthy, local food. Many health problems, as well as irregular school attendance, poor job performance, and other concerns, can be linked to poor diet and food insecurity. While every municipality in the Commonwealth is affected to some degree by these circumstances, the burden is usually heaviest on communities with residents who are lower-income, people of color, seniors, or disabled.

The goals and recommendations of this section focus on long-term, sustainable strategies to increase access to, and consumption of, healthy, locally produced food as part of overall efforts to reduce hunger and food insecurity in Massachusetts. These goals and recommendations emphasize market-based solutions that support many of the other goals of this plan, including increasing local food production, ensuring the economic viability of local farms, and reducing food waste. Finally, this section emphasizes strategies that are geared to reduce social inequities in access to healthy food and increase the quality and number of food system jobs.
FASH Goals

**Goal 1:** Everyone will be able to afford more healthy and local foods.

**Goal 2:** Everyone who qualifies for the Supplemental Nutrition Assistance Program (SNAP) will receive the benefits that are available to them.

**Goal 3:** More people will be able to purchase healthy foods using public food assistance incentive programs.

**Goal 4:** Healthy food education and choices for all children and adolescents will be expanded.

**Goal 5:** The roles of health care providers, institutions, and insurers in fostering access to healthy food will be expanded.

**Goal 6:** Food pantries and meals programs will increase their distribution of locally produced foods.

**Goal 7:** Healthy and locally produced food will be more accessible through better public transportation and food infrastructure.

**Goal 8:** More people will be aware of the direct effects that nutrition has on their health and will take part in effective nutrition education programs.
FASH Goal 1

Everyone will be able to afford more healthy and local foods.

The lack of purchasing power among low-income families and individuals is a fundamental barrier to increasing the consumption of healthy foods, including those that are produced locally. Improving consumer purchasing power is also critical to reducing food insecurity in Massachusetts, which stands at 11.9 percent for all residents and 16.6 percent among children.¹

Wages in Massachusetts have stagnated for low-income families, eroding household purchasing power for food and other necessities. Further, the overall cost of living in Massachusetts is 32 percent higher than the national average; while only 16 percent higher than average for groceries, it is 26 percent higher for housing based on the median monthly housing costs, typically one of the biggest portions of a household budget.² Yet the eligibility thresholds for nutrition assistance programs, such as Supplemental Nutrition Assistance Program (SNAP), are not adjusted to account for state-by-state income and cost of living differences.³ Food insecurity today is 71 percent higher in Massachusetts than it was a decade ago,⁴ and household income is a critical factor in food security. Food insecurity among households in the State living below the federal poverty line is 35.1 percent, while only 4.9 percent for households earning 185 percent or more of the federal poverty level.⁵

Income limitations force families to make trade-offs that have secondary consequences for personal health and include poor nutrition, exposure to extreme heat or cold, housing instability, and the foregoing of medical care and medications. Examples include low-income families who eat less during seasonal spikes in home energy bills, and seniors in low-income households who go hungry in the days prior to the arrival of their monthly Social Security check.⁶⁷⁸

For many consumers, local produce, and other foods can be more expensive (or perceived to be) than comparable conventionally sourced or processed grocery items. Low-income families and individuals have fewer dollars available for food purchases. Indeed, families that earn less than $20,000 a year spend one-third or more of their income on food, as compared to the national average of about ten percent (for all families).⁹ Further, conversations during the planning process revealed that many low-income consumers believe that local food is for the affluent. As a consequence, many low-income families may avoid buying fresh produce at stores or farmers markets that are known for carrying local foods. - This is despite the fact that local produce in Massachusetts generally costs about the same as other supermarket produce.

References:

¹ Gundersen, Craig. et. al. (2014). Map the Meal Gap 2014: Food Insecurity Estimates at the County Level. Feeding America http://goo.gl/3N0FxL.
³ Except for Alaska and Hawai‘i.

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Ensuring everyone has access to healthy food, and especially food grown and raised in Massachusetts will require several strategies, but central among them will be ensuring that individuals have the financial means to make decisions about the food they eat. Increasing household buying power, so that families do not have to choose between food and other necessities is one of the most powerful long term approaches to enabling low-income families and individuals to purchase more healthy food.

Recommendation 1.1: Increase household buying power by helping families and individuals keep more of what they already earn.

- **Action 1.1.1:** Maintain the Massachusetts Earned Income Tax Credit (EITC) and review its expansion, as well as the enactment of similar tax credits and household supportive subsidies (i.e. assistance for child care from the Department of Early Education and Care (EEC) that will increase the proportions of household incomes that are available for groceries and other necessities.

Recommendation 1.2: Help low-wage workers earn more take-home pay.

- **Action 1.2.1:** Support the adoption of a living wage standard for Massachusetts workers, with exceptions for time-limited youth training on production farms and related retail operations.

- **Action 1.2.2:** Support and expand workforce education, training, and certification opportunities for food system workers. Begin by examining the opportunities to expand education, training, and certifications for jobs within the food system, as well as those in closely related fields, including healthcare.

- **Action 1.2.3:** Expand the number of organizations and community partners involved in job training.

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**Children excited and engaged by farm- and food-focused curriculum**

An exciting idea related to re-introducing home economics as a way for children to learn more about food has been implemented by Hawlemont Elementary School in Charlemont, in the form of a farm- and food-focused curriculum. Strengthening students’ connection to food and their knowledge of food preparation is all part of the school’s plan. It’s not uncommon for students to learn about math, science, and other subjects while boiling sap, feeding goats, and making pickles, to name a few of the many activities that are part of their everyday school experience.

The Hawlemont Ag Initiative was started in 2014, with farming equipment and educator training programs funded in part through a $130,000 Community Innovation Challenge Grant. The school grounds now feature barns (complete with farm animals on loan from local farmers) as well as a greenhouse, chicken coop, and fruit and vegetable gardens. The support of community members and local farmers has been vital to the successful implementation of the Hawlemont Ag Initiative.

*Related Goals and Recommendations: FASH 4*
FASH Goal 2

Everyone who qualifies for the Supplemental Nutrition Assistance Program (SNAP) will receive the benefits that are available to them.

The Supplemental Nutrition Assistance Program (SNAP) is the most widely used assistance program of its type for families and individuals who need food. Over 860,000 Massachusetts residents received an average $123 per month in SNAP benefits during FY2014, contributing about $1.27 billion to the State’s food economy,10 and enabling residents in getting more of the food they need.

Yet many SNAP eligible, low-income families and individuals in Massachusetts who qualify for SNAP assistance do not receive the benefits, which increases their risk of food insecurity. While similar income thresholds are used to determine eligibility for SNAP and MassHealth benefits, about 400,000 more people are enrolled in MassHealth than SNAP,11 suggesting eligible people may be missing out on receiving SNAP benefits.

As an additional enrollment challenge, between January and April, 2014, SNAP participation dropped by 107,000 individuals. This decline was primarily due to an administrative change in the program, intended to improve the processing of SNAP applications and recertifications by State agencies; instead it led to the termination of benefits for large numbers of recipients. During the year that followed, the SNAP household caseload in Massachusetts declined 11.2 percent, compared with a national decline of just 1.7 percent during the same period. The economic impact since January 2014 has meant the loss of more than $156 million, annually in SNAP dollars flowing into the Massachusetts food economy.12 The Baker Administration, shortly after taking office in 2015, ceased automated terminations, reviewed the situation, and quickly implemented changes. Further reforms are planned to increase the State’s capacity to serve individuals and families in need of SNAP benefits, including the restoration of benefits that were terminated.

In addition, USDA data suggest that available SNAP income deductions are significantly underutilized, which also results in people not receiving benefits. Only 12 percent of SNAP households nationally with a member age 60-plus or person with disabilities claimed out-of-pocket medical expenses against their income, as allowed. There is a similar underuse of child care deductions by working families with pre-school and school age children. Child care expenses can help a family qualify for SNAP – especially if household income is between 130 percent and 200 percent federal poverty level.

Finally, a person’s receipt of SNAP benefits is a trigger for other food-related assistance programs, such as automatic eligibility for meals through the USDA’s National School Lunch and School Breakfast Program. SNAP participation also enhances the ability of a school or school district to qualify for Community Eligibility Provision, the federal universal free school meals program.

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11 Information provided by regional food banks in Massachusetts. Notes taken in Food Access, Security, and Health working group.
The challenges, trends, and merits of the SNAP program all suggest a need for more robust administration, and increased enrollment. In particular it is important that we prioritize ensuring that SNAP-eligible families with children are receiving benefits, as it has been found that with a reduction or absence of this assistance, children are more likely to experience food insecurity, be in poor health, and at risk for developmental delays. Massachusetts has a compelling interest in having everyone who qualifies for SNAP receiving the benefits that are available to them.

**Recommendation 2.1:** The Massachusetts DTA should continue to restore SNAP benefits to households improperly terminated or denied due to the business process redesign during 2014 and early 2015.

**Action 2.1.1:** DTA should review the terminations and denials of all SNAP benefits, and where determined eligible, permit or restore benefits as soon as possible. This would not apply in cases where SNAP benefits were terminated because applicant’s income exceeded the eligibility thresholds.

**Action 2.1.2:** Ensure adequate funding to hire DTA staff for the timely, efficient, and reliable processing of SNAP applications and renewals. The DTA should renew their focus on assisting clients, particularly elders, people with disabilities, and applicants with limited English proficiency, in securing required documentation and verification.

**Action 2.1.3:** Identify and implement best practices for SNAP administration that have been developed in other States, through research and working with the USDA. In particular, improve the existing Virtual Gateway and Beacon systems, to prevent automatic terminations or denials where submitted documents are not reviewed by DTA staff. Ensure DTA staff is trained to facilitate a streamlined application process.

**Action 2.1.4:** Implement federal options to reduce SNAP application barriers for low-income, seniors, and elder populations. Pursue an Elder Simplified Application Pilot (ESAP) to eliminate verification and interview requirements for seniors. Expand the Bay State Combined Application pilot to reach low income elder and disabled Supplemental Security Income (SSI) recipients. Consider allowing community partners to conduct client interviews.

**Recommendation 2.2:** Implement a common application portal for MassHealth, SNAP and other needs-based programs, that serves as an integrated, streamlined eligibility system for State-administered benefits.

**Action 2.2.1:** Develop, test, and deploy a common application portal, either as improvement to the existing Virtual Gateway or new system, to enable people to apply for SNAP when applying for or renewing MassHealth membership.
Action 2.2.2: Explore use of a common application portal for other federal and State benefit programs including the National School Breakfast and Lunch Programs; Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); Income Eligible Child Care; housing assistance benefits; and Cash Assistance benefits to ensure families seeking these benefits are offered simultaneous applications for SNAP and health care programs. Encourage inter-agency referrals under existing programs as an interim measure until a new and improved system is in place.

Recommendation 2.3: Assist households in claiming all available income deductions to increase the amount of monthly SNAP benefits allotted.

Action 2.3.1: Collaborate with DTA and agencies that assist seniors and persons with disabilities in claiming and verifying un-reimbursed, eligible medical and transportation expenses.

Action 2.3.2: Collaborate with EEC to identify low-income working families who may qualify for SNAP. Assist them with applications, and ensure that families claim all eligible child care, after-school, and transportation expenses.

Action 2.3.3: Produce client-friendly SNAP outreach educational materials that are Americans with Disabilities Act of 1990 (ADA) accessible and multi-lingual to highlight all eligible income deductions.

Action 2.3.4: Provide additional reimbursement to community partners that are managing more SNAP applications since the DTA’s change to program administration.

Veggies go mobile with support from hospital

The UMass Memorial Medical Center in Worcester supports several efforts in distressed, food-insecure neighborhoods to improve nutrition among vulnerable residents and increase access to healthy food. In collaboration with the City of Worcester and the Regional Environmental Council (REC), the hospital supports the Grant Square Community Garden in Worcester’s Bell Hill neighborhood. Established in 2010, the garden has 30 raised beds that are maintained by youth gardeners and residents. Produce is harvested from the garden and made available in the neighborhood, as well as to 15 stops in food insecure areas across the city through the REC’s “Veggie Mobile” farmers market. Hospital funds also support the doubling of SNAP benefits at Veggie Mobile sites.

Related Goals and Recommendations: FASH 5.1.4, 3.1.1 and 7.4
FASH Goal 3

More people will be able to purchase healthy foods using public food assistance incentive programs.

Incentives that give consumers more buying power to purchase fresh and healthy food through food assistance programs have proven to be very effective in Massachusetts.\(^\text{13}\) There is a need and opportunity to support and expand these efforts in order to: 1) deliver SNAP and other benefits more strategically to help increase purchases of fresh healthy food (much of it locally produced); 2) demonstrate the long term viability of such incentives programs; and 3) offer a model that can be replicated widely and sustained into the future.

One of the most successful programs of this type in the nation was completed in 2013 in Hampden County. Administered by DTA, the Healthy Incentives Pilot (HIP) offered SNAP participants an incentive of 30 cents for every $1 in SNAP funds spent on eligible fruits and vegetables at participating SNAP retailers, which included large chain store grocers, convenience stores, farmers markets, farm stands, and supermarkets. The project evaluation found that “HIP participants consumed almost one-quarter cup (26 percent) more targeted fruits and vegetables each day than did non-HIP respondents. This HIP impact is both statistically significant and large enough to be nutritionally relevant.”\(^\text{14}\)

Following the success of the HIP program in Hampden County, Massachusetts was chosen in 2015 to receive a USDA Food Insecurity Nutrition Incentive (FINI) grant to support the expansion of the program statewide. Known as the Healthy Incentives Program, this expanded effort will provide a 100 percent incentive match for each SNAP dollar that a participant spends on eligible fruits and vegetables purchased at farmers markets, farm stands, mobile markets, and community-supported agriculture (CSA) programs throughout Massachusetts. The maximum monthly incentive will be determined by household size, ranging from $40 - 80. The DTA will implement the five-year project through interdepartmental efforts that include the MDAR and DPH, and the support of a coalition of statewide community partners. In this time the program will deliver up to $1.25 million in incentive dollars for SNAP families. In its first year, the FINI project will focus on start-up, planning, and core systems activities. Clients will begin receiving the new incentive benefits in April 2017 and the program will run through March 2020.

SNAP incentives for healthy food purchases have been available at some farmers markets in Massachusetts since 2008. Boston Bounty Bucks is one such program that was launched by The Food Project, and in its history has been administered by the Boston Collaborative for Food and Fitness with the City of Boston, and now by The Food Project. Bounty Bucks provides dollar-for-dollar matching for all SNAP purchases up to ten dollars per visit at farmers markets. Wholesome Wave has also provided similar matching incentive programs at farmers markets.

**Recommendation 3.1:** Support statewide funding, implementation, and evaluation of consumer incentives that support purchasing more fruits and vegetables.

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\(^{13}\) Members of the Food Access, Security, and Health Working Group involved in the food system planning process 2014 cited Boston Bounty Bucks and similar SNAP matching programs at farmers markets as examples.

**Action 3.1.1:** Leverage and maximize the FINI grant award to increase use of SNAP and complementary benefit programs at farmers markets, farm stands, mobile markets, and for community supported agriculture (CSA) programs. Identify, support, and implement methods to sustain FINI-related healthy food purchasing incentive initiatives.

**Action 3.1.2:** Fund the FINI-HIP Trust Fund. The FINI-HIP Trust will enable DTA to engage statewide community partners and private funders to accept financial commitments to support the HIP implementation.

**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 3.1.4:** Encourage Massachusetts’ congressional delegation to continue and increase funding for the Farmers’ Market Nutrition Program (FMNP).

**Action 3.1.5:** Conduct outreach to promote the success and benefit of the FMNP.

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

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**Hunger treated as important vital sign at healthcare facility**

Dr. Megan Sandel, a pediatrician at Boston Medical Center, begins every patient exam by checking their vital signs: heart rate, temperature, and blood pressure. And then, just as importantly, she checks their Hunger Vital Sign by asking two simple questions to find out if the child’s family has had enough food.

In cases where Dr. Sandel or her fellow clinicians, such as Dr. Deborah Frank who is pictured above, learn that one of their young patients is at risk for food insecurity or hunger, specialists join the healthcare team to treat this situation by offering emergency food access, helping with SNAP and WIC applications, and offering other resources that help patients and their families stay healthy, not hungry.

Related Goals and Recommendations: FASH 5.1.1, Distribution 1.4
FASH Goal 4

Healthy food education and choices for all children and adolescents will be expanded.

There is a lack of nutrition education and healthy eating choices for children and adolescents in Massachusetts, according to many plan participants. Lack of such educational resources and limited healthy food choices correlate with higher obesity and related health problems and food insecurity rates, especially among youth. To improve these health outcomes, existing federal food assistance, education, and other programs and funding streams can be improved and expanded.

The lack of early education about nutrition contributes to food insecurity, as children grow up without fundamental skills in food preparation, shopping, and budgeting. In schools, home economics, food science, and nutrition classes at the middle and high school levels are no longer required, and fewer students are taking them. Many schools no longer have full-service kitchens and are reduced to warming ovens and refrigerators, which greatly limits the school district’s ability to incorporate locally grown or whole food into menus. This transition from full-service to limited-service school kitchens marks a significant change from recent, historical school practices. USDA programs exist to support school districts and childcare providers in expanding healthy food options, but in Massachusetts these are underutilized.

Schools gardens can be effective educational tools that support students in making healthy food choices. Despite the benefits of school gardening initiatives, limited funding, lack of administrative staff and school board support, staff and teacher time constraints, and difficulty integrating programming during the academic year can make implementation difficult.

These limitations are compounded by a strong culture of convenience that emphasizes prepackaged foods that require little preparation. The prevailing view among many adults and parents is that cooking takes too much time or skill, and that nutritious food does not taste good. Contributing to this are lack of time, limited cooking facilities, a shortage of cooking skills, and poor access to healthy food options – especially for low-income residents who lack convenient access to healthy food. Children often model their eating habits from their family. Nutrition education programs in which parents engage with their children in food and nutrition activities reinforce budgeting, cooking skills, and the connection between food consumption and health can be very effective in transferring healthy eating habits.

Recommendation 4.1: Increase nutrition education, curriculum, and trainings for children and adolescents.

Action 4.1.1: Re-introduce contemporary home economics curricula to public middle and high schools. Contemporary home economics classes could involve an integrated curriculum including basic cooking techniques, USDA’s MyPlate education, local agriculture education, food budget principles, food safety, nutrient information and labeling, and food-related health benefits and risks.

15 See Existing Conditions Chapter sections
Action 4.1.2: Encourage and support nutrition education that is age-appropriate for students in elementary schools.

Recommendation 4.2: Support farm to institution programs to increase procurement of locally produced, healthy food by schools.

Action 4.2.1: Provide financial incentives to school districts and academic institutions to modify contracts for local food procurement to include requirements or incentives for food service providers to serve more healthy local foods. Set goals for local food procurement of between ten percent and 20 percent and include mechanisms that increase the transparency of the food procurement process and insure that the “local” origin can be verified.

Action 4.2.2: Expand existing, and support new, farm to school programming to increase the amount of healthy and locally produced foods purchased and served by pre- and K-12 schools, childcare, and after-school facilities. Incentivize expansion and creation of farm to school programs with public and private funds to support school districts.

Action 4.2.3: Increase healthy and local food distribution to small-scale food purchasers, including childcare and after-school facilities. Evaluate ongoing efforts, identify new approaches, and launch pilot projects as needed to achieve this.

Action 4.2.4: Increase the number of schools that have full service kitchens, and provide additional training for food service staff.

Recommendation 4.3: Increase and maximize the use of available food assistance programs for children and adolescents, and engage parents in learning and advocacy to improve child nutrition.

Action 4.3.1: Maximize usage of USDA school food programs, including National School Food Lunch, School Breakfast, and Fruit and Vegetable Programs. Encourage school districts to adopt the Community Eligibility Provision (CEP). Support the Massachusetts Department of Elementary and Secondary Education (DESE) in efforts to develop and adopt guidance that clarifies how funding will be allocated for CEP-eligible school districts.

Action 4.3.2: Support the expansion of complementary programs, such as Project Bread’s Chefs in Schools, that support schools in creating appealing, healthy, and local school lunch menus.

Action 4.3.3: Support more schools and school districts in implementing programming that serves breakfast in the classroom. Support increased awareness of Massachusetts DESE guidance to school districts that breakfast is counted as “time on learning.”

Action 4.3.4: Support expanded use of USDA’s Child and Adult Care Food Program, including efforts to increase funding and participation and reduce and streamline paperwork.

Action 4.3.5: Maximize use of USDA’s Summer Food Program and support efforts that promote and expand the program where there is demonstrated need, underuse, and where there are opportunities to co-locate Summer Food Programs.
FASH Goal 5

The roles of health care providers, institutions, and insurers in fostering access to healthy food will be expanded.

Expanding the roles of healthcare providers, institutions, and insurers in improving healthy food access and strategies that improve health outcomes can have a profound impact on residents in Massachusetts, and especially those that are food insecure.

It is essential to reduce overall health care costs in Massachusetts. These costs are increasingly crowding out the ability of State government to maintain and invest in other services that are critical to public health, including early childhood education, mental health, and public safety. Institutions with a stake in public health outcomes have an opportunity to help meet this need by taking more actions to address and reverse the public health crisis of obesity and other health problems that are related to poor nutrition and inactivity.

As anchor institutions, nonprofit hospitals, and health maintenance organizations have an obligation to fulfill the Massachusetts’ 2009 Community Benefits Guidelines. These include improving chronic disease management among vulnerable residents, reducing racial and ethnic health disparities, and promoting wellness for all. Exemplary programs include Mass in Motion, Shape Up Somerville, Live Well Springfield, Mass General Hospital’s Center for Community Health Improvement, and similar initiatives.

In addition, the federal Affordable Care Act of 2010 established several community service obligations for nonprofit hospitals, the most relevant of which is the requirement to conduct a community health needs assessment (CHNA) and adopt an implementation strategy at least once every three years, as described in Section 501(r) of the Internal Revenue Service tax code.

Health insurers also have an interest in keeping their customers healthy, which helps control premium costs for all subscribers. Many insurers already offer incentives for healthy behavior, such as gym membership rebates. Expanding such incentives to encourage the regular purchase and consumption of healthy food could help further healthy behaviors.

Recommendation 5.1: Support actions by health care providers, hospitals and medical institutions that improve access to, and education about, healthy food, especially to people who are food insecure.

Action 5.1.1: Incorporate food insecurity screenings and referrals to food assistance resources into regular practice for visits to the doctor’s office or clinic. Encourage health care institutions to partner with agencies that can provide SNAP enrollment assistance to patients, and encourage utilization of benefit enrollment centers to provide referrals for patients in need of additional services.

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**Access to land and food go hand-in-hand**

A great example of local farms helping to reduce food insecurity is the 60-acre, permanently protected Food Bank Farm in Hadley. Skilled farmers from Mountain View Farm CSA of neighboring Easthampton lease the land in exchange for donating at least 100,000 pounds annually of fresh, chemical-free produce, which The Food Bank of Western Mass distributes to food insecure households. This partnership supports local farming for area consumers, including households at risk of hunger, while preserving farmland.

The Food Bank’s Executive Director Andrew Morehouse says The Food Bank Farm directly addresses his agency’s need to provide more fresh, healthy food to people who are food insecure and could serve as a model for others.

**Related Goals and Recommendations:**
FASH 6.2 and Land 3.2

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**Action 5.1.2:** Support strategies to address immediate food needs of patients at doctors’ offices, hospitals, and health centers including scaling of programs in which doctors write prescriptions for patients to fill for fresh fruits and vegetables – at no cost – at local farmers markets and other retail outlets.

**Action 5.1.3:** Encourage and support nonprofit hospitals in supporting and partnering with community-based programs that promote healthy food access and nutrition education. Support pilot programs that provide direct support to patients in acquiring healthy, such as on-site fresh produce sales to immediately fill fruit and vegetable prescriptions.

**Action 5.1.4:** Study the Determination of Need process and related community health improvement resources for opportunities to expand and enhance health care facilities’ role in promoting and increasing access to healthy food. Innovative examples include mobile markets and fresh produce kiosks inside hospitals.

**Action 5.1.5:** Encourage medical institutions to modify food procurement contract language to purchase more locally produced healthy foods, including setting local food procurement benchmark of at least 20 percent.

**Action 5.1.6:** Encourage and support greater nutrition education in medical schools and relevant trainings for all medical professionals.

**Recommendation 5.2:** Encourage insurance providers to increase and scale up incentives and outreach that will encourage purchase and consumption of more healthy food.

**Action 5.2.1:** Provide SNAP application assistance at the time of enrollment in public health insurance programs, as well as providing easy-to-use directories and information about local DTA offices and services, nutrition trainings, and WIC application assistance.

**Action 5.2.2:** Encourage insurance providers to expand and offer discounts or rebates on premiums for purchase of healthy foods including CSA memberships and documented farmers market purchases, similar to health club discounts currently offered, or when prescribed as part of a fruit and vegetable prescription program.
FASH Goal 6

Food pantries and meals programs will increase the distribution of locally produced foods.

Low-income residents, who comprise the majority of clients in pantries and meals programs, consume much less fresh fruit and vegetables than average, and far less than the USDA minimum recommended daily portions of five servings per day. At the same time, many food pantries are not able to stock and distribute enough fresh local produce to meet the needs of their clients. While much of this gap can be attributed to the fact that fresh produce is more perishable than shelf-stable processed foods, other factors that limit the availability of fresh produce among food pantry and meals program clients, include the limited capacity that many pantries and meals have to transport and refrigerate fresh food, as well as limited hours of operation and staff or volunteer time. As a result, food pantries and meals programs often rely on shelf-stable products, many of which are high-calorie, high-sugar foods to meet clients’ needs.

Supporting food pantries and meals programs to increase the use and distribution of locally produced foods offers many opportunities to increase production, sales, and consumption of Massachusetts-grown food while addressing the need for healthy foods.

Recommendation 6.1: Increase purchase of locally produced food through the Massachusetts Emergency Food Assistance Program (MEFAP).

Action 6.1.1: Identify ways and implement strategies to increase distribution and production of culturally appropriate and preferred foods available for purchase through MEFAP.

Action 6.1.2: Modify food procurement contract language to utilize at least ten percent of MEFAP dollars to purchase locally produced, healthy food.

Action 6.1.3: Identify what, if any, shelf-stable, non-perishable food products purchased through MEFAP have the potential to be grown or produced in Massachusetts, and support the production of identified item(s) for inclusion in the program.

Action 6.1.4: Identify capacity and efficiency limitations related to the distribution of locally produced, healthy food in emergency food distribution facilities, such as refrigeration, storage, and timely acceptance of donations that may be limiting the capacity of food pantries and meals programs. Identify funding and implement solutions.

Recommendation 6.2: Foster more direct connections among hunger relief agencies and local farmers, fishermen, and food producers.

Action 6.2.1: Scale existing relationships between hunger relief organizations and farms to increase distribution of locally produced, healthy foods. Identify and support establishment of new partnerships, including provision of public and private support as needed.

Action 6.2.2: Foster relationships between hunger relief organizations and fishermen to increase the distribution of locally caught fish, with a focus on distributing lesser known and eaten species that are abundant in Massachusetts.

Action 6.2.3: Consider the need for a community of practice among food pantry and meals providers to share best practices and promote communication.
FASH Goal 7

Healthy and locally produced food will be more accessible through better public transportation and food infrastructure.

In many areas of Massachusetts, transportation-related barriers make it difficult or impractical for people to regularly obtain healthy food. Often in these cases, there are simply not enough stores with healthy food nearby. Some cities, including Boston, Springfield, and Brockton have as much as 30 percent fewer supermarkets per capita compared to the national average. In addition, existing supermarkets are unevenly distributed, with lower-income communities having disproportionately less access to them. This shortage means that residents, particularly those in lower-income communities, must travel out of their neighborhoods to reach the nearest store that sells fresh produce and other foods necessary to maintain a healthy diet.\(^\text{20}\)

Reliable transportation is essential for accessing sources of healthy food. Yet in some urban areas, one-third or more of residents do not own or have access to a car, making public transit critical for accessing healthy food at grocery stores. Yet in some areas, transit service ends as early as 6:30 p.m., and the number of grocery bags allowed on buses is typically limited to two or three. Further, public transportation is not available in many rural areas.

In addition, as the number of senior citizens continues to grow, there are more people with mobility limitations. More than one in ten residents report having one or more disabilities.\(^\text{21}\)

Farmers markets are an important source of healthy food, and much of it is locally produced. Yet seasonal market operations and limited hours often reduce the ability of many people without a car to patronize farmers markets.

**Recommendation 7.1:** Support municipal and regional transportation planning efforts to more fully understand and identify related access barriers and opportunities to make it easier for all residents to obtain healthy food regularly.

**Action 7.1.1:** Support the creation and use of community “scorecards” to assess the accessibility of healthy and local food within one or more municipalities or region.

**Action 7.1.2:** Work with Massachusetts Department of Transportation (MassDOT) and the staff of Metropolitan Planning Organizations (MPOs) and regional planning agencies in conjunction with municipalities to conduct gap analyses that focus on the availability of healthy food, especially among people who experience health disparities related to nutrition or are food insecure, especially seniors and people with disabilities. The purpose of these analyses is to better understand specific challenges and more adequately plan responsive local transportation programs and related efforts that improve healthy food access. Support partnership with existing initiatives like Transportation for Massachusetts to identify ways to address challenges.

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**Action 7.1.3:** Continue to support and expand Mass in Motion and similar municipal programs like food policy councils, and leverage existing Mass in Motion initiatives toward a “Health in All Policies” model that integrates health-related considerations into decision-making and planning throughout municipal and State agencies.

**Recommendation 7.2:** Support regional measures to enhance access to healthy food.

**Action 7.2.1:** Encourage MPOs and their Joint Committees on Transportation to add criteria for accessibility to healthy and local foods to project evaluations for regional transportation plans and to the annual scoring of projects for inclusion and prioritization in the regional and State Transportation Improvement Program.

**Action 7.2.2:** Engage and leverage regional economic coordinating councils to advance healthy food accessibility opportunities in their plans and support the implementation of solutions with regional stakeholders.

**Action 7.2.3:** Develop more regional transportation options in rural areas to help improve access to grocery stores for people who live who live long distances from grocery stores, especially seniors, and those with disabilities.

**Recommendation 7.4:** Support innovative retail outlet strategies that enhance access to healthy food for at-risk residents.

**Action 7.4.1:** Support mobile farmers markets and mobile grocery markets through local food policy councils, anchor institutions, nonprofits, and agency resources. Encourage partnerships with local transit authorities, farms, distributors, farmers markets, and other transportation providers.

**Action 7.4.2:** Work with major employers, cooperative food markets, nonprofits, local food policy councils, and others to establish CSA deliveries at workplaces, as well as community centers, churches, and other similar locations.

**Action 7.4.3:** Evaluate prior “Healthy Bodega” and “Healthy Corner Store” programs. Produce recommendations, and expand and improve implementation.

**Action 7.4.4:** Increase the availability and affordability of CSA memberships among low-income residents through such innovative measures as the statewide Healthy Incentives Program, which will allow monthly CSA share payments from SNAP debit cards. Increase options for CSA pickup locations, such as workplaces, community centers, and churches that are more convenient to those without cars or limited transportation options.

**Recommendation 7.5:** Review existing policies and planning criteria to improve accessibility for public transportation users, particularly the food accessibility needs of people with mobility limitations.

**Action 7.5.1:** In any expansions of SNAP, WIC, or senior meals programs, actions should be taken to address the transportation, mobility, and ADA compliance needs of people with disabilities for their entire shopping trip, including the transporting of groceries, from door to point-of-sale.
Action 7.5.2: Increase the number of shopping bags that are allowed to be carried on public transit authority buses and trains. Increase the capacity of transit vehicles to carry more shopping bags safely.

Action 7.5.3: Work with the Massachusetts Bay Transit Authority, the State’s regional transit authorities, and Metropolitan Planning Organizations to provide more direct and/or frequent bus routes to locations with better access to grocery stores and healthy food outlets.

Action 7.5.4: Expand Meals on Wheels to operate on weekends.

Food Policy Councils focus on food access

More than a dozen food policy councils in the state function as forums where people from different community organizations, neighborhoods, and government agencies can work together to help make local food more accessible and increase opportunities for healthier living. Efforts are wide ranging, depending on local needs. The Springfield Food Policy Council, for example, is focused on bringing a full-line grocery store to the chronically underserved “food desert” Mason Square neighborhood. The Franklin County Food Council is encouraging institutions to buy at least ten percent of the food they serve from local farms and businesses. And the Southeastern Massachusetts Food Security Network recently produced a comprehensive food security assessment that is helping to guide community food system development efforts in the New Bedford and Fall River area.

Related Goals and Recommendations:
FASH 7.4
FASH Goal 8

More people will be aware of the direct effects that nutrition has on their health and will take part in effective nutrition education programs.

Many Massachusetts residents struggle to make the connection between what they eat and their health. Also, there is a predominant public perception that a healthy diet that includes local fruits, vegetables, and meats is too expensive for the average family to afford and is only available during the summer months.

As our bodies grow, change, and age, it is important to have an understanding of how food can help keep us nourished and healthy. Ongoing nutritional education is needed to support an understanding of food, nutrition, and health, and to inform eating choices in all places where people eat, shop, and make decisions about foods they will consume. The USDA’s MyPlate Dietary Guidelines for Americans, revised in 2010, are the most widely accepted standards for nutrition. While these are the most broadly accepted standards, they are not well known, and critiques by some, like the Harvard School of Public Health and Harvard Medical School find that MyPlate does not offer a complete picture when it comes to basic nutrition.

Effective programming exists that assists consumers with making healthy food choices, from shopping and budgeting to storage and preparation, and there is a need for more such programming. The UMass Extension Nutrition Education Program and Share Our Strength’s Cooking Matters program operate statewide SNAP Education programs that deliver practical, skills-based nutrition education to low-income families with young children, as well as youth up to age 18. The UMass Extension program is the most wide-reaching, and in 2014-2015 it directly engaged more than 44,000 residents through workshops, classes, and grocery store tours, and another 192,000 people through newsletters, videos, displays, demonstrations, and other indirect means.

Ascentria Care Alliance in Springfield and Kit Clark Senior Services through Bay Cove Human Service in Boston also provide effective nutrition education programs. These agencies reach a smaller, but still significant number of consumers. Food bank and food pantry staff statewide are providing consumer information about how to shop and eat healthy food, including locally grown produce. These programs offer an effective channel for reaching people with education about nutrition, food shopping, and food preparation.

Some culinary programs offered at community colleges or through nonprofit organizations are providing valuable nutrition and culinary education programming, programming that is simultaneously growing an educated and skilled food service workforce. Some community- and shared-kitchens are also opening up their kitchens for programming that can include cooking, nutrition curriculum, and meal sharing. These resources and programs can be further developed and leveraged.

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23 Reported by stakeholder participants in Massachusetts Food System Plan regional outreach sessions and interviews. 2013-2015.
Lastly, multiple studies show that a proportion of the weight gain residents have experienced over the past 20 years is attributable to the consumption of sugary drinks and sodas. At the same time, there are now at least 39 states and some cities that subject sugar-added soda beverages to regular sales taxes. Massachusetts is now in the minority of states that does not tax sugar-added soda beverages, instead classifying them as “essential food items” that are exempt.

**Recommendation 8.1:** Improve the availability and effectiveness of public education about the direct diet-health connection.

- **Action 8.1.1:** Identify ways to further utilize and leverage existing food-health awareness campaigns and initiatives that reinforce the food-health connection, including USDA’s MyPlate.

- **Action 8.1.2:** Improve the format and distribution of the Massachusetts seasonal food calendars to increase understanding of locally harvested and caught foods available year-round.

- **Action 8.1.3:** Examine the feasibility, and launch a public outreach campaign about the health and economic benefits of purchasing and consuming local food.

- **Action 8.1.4:** Work in partnership with schools and childcare providers to send guides for parents on how to pack a healthy school lunch and snack. Provide support for guides and other materials that are sent out at the beginning of the school year.

**Recommendation 8.2:** Maintain and expand existing nutrition outreach programs.

- **Action 8.2.1:** Build upon existing SNAP education programs by expanding public and private support for outreach and programming of existing nutrition education programs operated by UMass Extension SNAP Education and Expanded Food and Nutrition Education Programs (EFNEP) and nonprofit organizations, such as Share Our Strength, to also include people who may not be receiving or are not eligible for nutrition assistance.

- **Action 8.2.2:** Support and promote efforts by food retailers, medical service providers, school staff and volunteers, and other entities to offer “healthy diets on a budget” information and classes, especially at locations where complementary programming that engages adults, youth, and children are already planned.

- **Action 8.2.3:** Increase State, local, nonprofit, and private investments to expand the number of community kitchens including expanding the usage of existing kitchens for delivery of nutrition education and cooking courses for seniors, adults, and youth.

**Recommendation 8.3:** Build more food system career pathways to advance knowledge about the direct effects of nutrition and the benefits of local food.

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26 Malik, Vasanit S., et. al. (2010). *Sugar Sweetened Beverages, Obesity, Type 2 Diabetes and Cardiovascular Disease risk.* Circulation, 121(11), 1356-1364.


The U.S. Food and Drug Administration’s Nutrition Facts product labels are due for a refresh. Basically unchanged since they first appeared in the 1990s, the FDA’s proposed new labels (above, right) would be more consumer-friendly, with easier-to-understand calorie and serving size information, and would include added sugars as a percentage of recommended daily intake. For example, the label on a typical 20-ounce bottle of soda, which has 65 grams (16 teaspoons) of added sugar, would explain that this is 130% of a person’s recommended daily added sugar intake, which is about 12 teaspoons for a typical 2,000-calorie-a-day diet.

FDA is soliciting comments on the proposed new format and will issue new product labeling rules in 2016.

Related Goals and Recommendations: FASH 8.4.2

**Action 8.3.1:** Strengthen culinary certificate programs at community colleges. Educate school administrators about barriers to careers in the food system so these may be addressed in course offerings. Encourage and support partnerships between nonprofit organizations with culinary programs and community colleges to extend coursework and increase certificate opportunities.

**Action 8.3.2:** Pilot collaborative employment models in partnership with employers where food preparation workers move between food service jobs and farm-based processing work and other kinds of collaborative employment arrangements.

**Recommendation 8.4:** Use tax policy to encourage purchases of healthy, locally produced food.

**Action 8.4.1:** Eliminate the sales tax exemption for sugar-added soda beverages and direct the resulting tax revenue to nutrition programs that increase the access to, and consumption of, healthy foods, including locally produced foods.

**Action 8.4.2:** Monitor the implementation of FDA labeling requirements for product and calorie information on restaurant menus and vending machines. Study implications for Massachusetts consumers, businesses, and food providers.
WORKFORCE

Goals and Recommendations

The workforce development system in Massachusetts is comprised of public and nonprofit education, training, and employment programs and resources, and business and employer support programs (e.g., Hiring Incentive Training Grant program). This system includes public schools, community colleges and universities, one-stop career centers, Workforce Investment Boards, and nonprofits. It provides education and training to new and incumbent workers and operates in partnership with businesses and industries. A successful workforce development system produces qualified workers that meet and stay current with the skill needs of industries and businesses.

However, our workforce development system today does not fully address and serve the needs of many Massachusetts food businesses. Our system can be improved by adding training for current and anticipated occupations and business opportunities in the food system, particularly those in fishing, food manufacturing, distribution, food service, and community health. Going forward, as the demand for locally sourced food increases, the skill needs and benefits for workers and businesses will continue to evolve. For example, urban workforce development providers’ understanding of food system work needs to be broadened to include not only distribution but urban farming and other forms of urban food production, as well.

There is also a need to assess and increase the alignment between business and worker needs for training and education with available workforce development, education, and training resources at all levels. These assessments and alignments are also needed for both new and incumbent food system workers. Food-related businesses, like many others, may not be taking full advantage of existing programs, or realize that they are available. Or they may simply feel that the difficulty of accessing support isn’t worth the time and paperwork.

Some food system workforce challenges have already been identified. Farmers, fishermen, and food producers express concern about having access to an adequate labor supply. Currently there are limited connections between graduates of Massachusetts’ growing number of agricultural and food system training programs and employers in the food system. In addition, food system work is often seasonal, part-time, and low-wage; it also typically does not come with benefits, such as health insurance and vacation. Further, these jobs often have limited and unclear paths for advancement and better wages. Therefore, providing food businesses with technical assistance to support business planning, business health, and expansion will help address labor challenges and ensure stronger food system businesses.

The following goals, recommendations, and actions highlight opportunities to align Massachusetts’ workforce development system with its growing local food economy. See Appendix A for a more detailed assessment and gap analysis of the existing workforce development system.
Workforce Goal

Massachusetts’ workforce development resources will meet the needs of food system workers and businesses.
Workforce Development Goal 1

Massachusetts’ workforce development resources will meet the needs of food system workers and businesses.

**Recommendation 1.1:** Capture, analyze, and disseminate labor market information about food system occupations, industries, and businesses to workforce, education, training, and economic development entities and professionals.

**Action 1.1.1:** Annually acquire and analyze labor market information about food system jobs, including wages, job openings, and forecasts of job growth for existing, changing, and emerging food occupations. Engage Workforce Investment Boards and Commonwealth Corporation in these activities.

**Action 1.1.2:** Build on the occupational analysis done for this plan to refine the understanding of essential skills, knowledge areas, and necessary credentials for existing, changing, and emerging food system occupations.

**Action 1.1.3:** Develop information packets and presentations to disseminate labor market information. Tailor outreach relevant audiences, including career, guidance, teaching, and administrative staff at elementary and secondary schools, community, State colleges, universities, and to career counselors and business service representatives at one-stop career centers, and the staff of Workforce Investment Boards.

**Action 1.1.4:** Ensure that urban workforce development, education and training professionals, and organizations at all levels have relevant and appropriate food system job and career information pertinent to urban settings.

**Action 1.1.5:** Pair food system occupation information with upcoming labor market training being developed and put on by Department of Elementary and Secondary Education and Commonwealth Corporation.

**Recommendation 1.2:** Collect, update, and disseminate information on education and training resources to employers and workers.

**Action 1.2.1:** Expand and update the inventory produced for this plan to develop a robust, up-to-date inventory of education and training resources for food system businesses and workers.

**Action 1.2.2:** Conduct outreach to food system employers and facilitate introductions of One Stop Career Center business services staff to assist with dissemination of information about business support programs, such as Hiring Incentive Training grants and the Workforce Training Fund.

**Recommendation 1.3:** Support food system businesses of all kinds to work closely with workforce development entities to build a robust labor pool.
**Action 1.3.1:** Build practical connections that support the movement of trainees and graduates between agricultural and fisheries training programs to farms, fishing enterprises, and food production operations, including urban agricultural training programs.

**Action 1.3.2:** Support development of hands-on agricultural, fisheries, and food system training approaches through development of connections between education and training programs, as well as food system businesses.

**Action 1.3.3:** Expand and enhance relationships between the public workforce system and food system businesses, including those that may already work with through the H2A agricultural guest worker program.

**Action 1.3.4:** Support the revision of federal immigration policies so that they better meet the labor needs of Massachusetts farms.

**Recommendation 1.4:** Provide appropriate education and training for food system workers through modification, adaptation of existing resources, or development of new ones.

**Action 1.4.1:** Analyze the availability of hands-on training in agricultural production at the vocational high school and community college levels. Determine what kinds of investment will best meet additional needs. Increase funding and support to meet needs.

**Action 1.4.2:** Assess capacity of existing, current agricultural production education, and training opportunities for youth in urban and rural areas. Determine if additional training is needed.

**Action 1.4.3:** Evaluate available culinary training through the K-12 and higher education systems, and determine applicability or adaptability for workforce development in food manufacturing.

**Action 1.4.4:** Assess the efficacy of existing manufacturing training programs and assess their alignment for potential expansion(s) in commercial food manufacturing. Adapt existing training or develop new food manufacturing training as industry need and assessment indicates.

**Action 1.4.5:** Analyze existing supply chain management training and education offerings to determine if they are sufficient to support food system expansion needs. Address insufficiencies as needed.

**Action 1.4.6:** Research the applicability and relevance of existing environmental science, basic biology, and STEM programming (focused on science, technology, engineering, and math) offered through the community college and State university system. Determine how it can better support the strengthening of the food system and the education of food system workers. Implement changes as determined.

**Action 1.4.7:** Determine if existing food service and nutrition education training resources provide sufficient capacity, and provide a better match to worker needs, to support expansion of the role of food service professionals to prepare and serve local food within public education settings.
**Action 1.4.8:** Assess and modify as necessary the outreach materials (newsletters, best practices publications, technical assistance, and other items) of UMass Extension and MDAR to ensure they are optimized to meet the needs of incumbent food system workers and professionals.

**Recommendation 1.5:** Explore and foster the development of formal apprenticeship programming in food system businesses.

**Action 1.5.1:** Work with the Massachusetts Division of Apprenticeship Standards and food businesses to assess applicability of apprenticeships to meet food system occupational training and staffing needs.

**Recommendation 1.6:** Develop career pathways and ensure workforce education and training initiatives are available and appropriate for all workers within the food system.

**Action 1.6.1:** Capture and articulate existing and anticipated food system career pathways. Engage food system business partners and workforce development organizations to do so.

**Action 1.6.2:** Work with businesses and labor to target entry level food system workers in a wide variety of jobs (including farm workers, home health aides, school cafeteria workers, food servers, convenience and bodega store clerks, and others) for education and training that provides for pathways out of poverty and supports professional advancement.

**Action 1.6.3:** Regularly assess education and training needs to support professional development and advancement of workers, particularly entry-level workers in the food system. Form partnerships with food system employers to do so.

**Recommendation 1.7:** Market food system occupations and career pathways to diverse audiences. Make linkages between existing programming and resources populations.

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**Culinary training program addresses unemployment and food insecurity**

FoodWorks is a culinary training program that offers unemployed and underemployed individuals job training in the culinary field. Designed to work with people with barriers to employment, the mission of the program is to empower, educate, train, and provide nutritious meals to people in need through the free lunch program at Kate’s Kitchen, a program of Providence Ministries in Holyoke. Working in partnership with other local education and employment programs, foodWorks offers trainees social services like housing assistance and financial literacy, and job placement support to find and secure a job. During the training program, participants prepare quality, nutritious meals for Kate’s Kitchen, which serves lunch 365 days per year for a total of over 60,000 meals annually.

Recent graduates of foodWorks have landed jobs in restaurant work, including kitchen help, prep cooks, retail food sales, institutional kitchens, and day care center meal preparation. Improvements and expansions planned for the kitchen will increase food storage capacity allowing foodWorks to increase the volume of meals served and food distributed through a related food pantry, including local food processed in season and frozen for later use and distribution.

*Related Goals and Recommendations: Workforce 1.7, FASH 1*
Independent grocer knows the value of well-trained employees

Tropical Foods is more than a supermarket—it’s a community institution. An independent grocery store that has been family run for more than 50 years, Tropical Foods is a bedrock in the transitioning community of Dudley Square—employing 100 local people, some for over 14 years, with continued training and growth opportunities.

Tropical Foods sources their products from Massachusetts whenever possible, and focus on providing fresh and healthy foods that are culturally familiar to their Latin American, Asian, and African customer base from nearby neighborhoods.

Related Goals and Recommendations:
Workforce 1, FASH 7.4, Distribution 1.3

Action 1.7.1: Provide transportation reimbursement for students to attend agricultural high schools.

Action 1.7.2: Coordinate and develop a pilot career pathways development effort at several comprehensive high schools.

Action 1.7.3: Link the relevant agribusiness academic and training resources at Chapter 74 Career/Vocational Technical Education schools with interested comprehensive high schools.

Action 1.7.4: Support the development of curricular connections between school gardening programming, farm to institution food service relationships, and job and career information for students at elementary and secondary levels.

Action 1.7.5: Connect immigrants and newcomers who have agricultural, fisheries, and food production skills with related occupations and additional training.

Recommendation 1.8: Support the development of strong food system businesses with full-time, year-round, and benefitted work opportunities.

Action 1.8.1: Increase availability of technical assistance to support food system business planning, viability, compliance with labor standards, effective management practices, and expansion.

Action 1.8.2: Develop and disseminate models for shared labor pools that enable full-time, benefitted employment in the food system by creating work that spans across seasons of produce and fruit. Develop training for transferable skills applicable in different sectors of the food system.

Action 1.8.3: Ensure entrepreneurship development is suited to, and reaches, interested food system entrepreneurs.
With the completion of the Massachusetts food system planning process comes the need to determine how goals and recommendations will be carried out. The Massachusetts Local Food Action Plan (the Plan) presents a range of goals and recommendations, from narrow, specific items to broad visions. Some are particularly time-sensitive and require immediate attention, while others are more transformational in nature and scope and will take time to achieve. It will be necessary to prioritize these goals and actions to facilitate implementation. Doing so will require action on the part of many public, nonprofit, and private participants in the food system.

A collaborative effort is required to carry out of the recommendations contained in the Plan. Existing structures need to be strengthened and some new systems created in order to move the proposed agenda forward. The MFPC is limited by its enabling legislation to providing recommendations and currently has very limited resources for staffing. The legislature has no formal structure to review proposed legislation specifically in the context of the broader food system. While government structures offer significant advantages to moving an agenda forward, the challenges of open meeting and public procurement laws and centralized control also create significant hurdles to effective policy implementation. And though there is a demonstrated need for a network that shepherds the Plan’s agenda and provides neutral facilitated communication and networking among stakeholder organizations, private entities, and other key players in Massachusetts’ food system, no such entity currently exists.

Only through collaboration between these three key actors in the food system – the nonprofit and private sector along with local governments, the MFPC, and the legislature – can progress be made toward the goals of this plan. Public and private investment in capacity building for these three entities will be required for broad cross-sector coordination, planning, and implementation related to the Plan. It will be critical that these three entities communicate regularly, and collaborate where appropriate, to ensure that their work toward implementing the Plan’s goals is complementary, and to provide a level of accountability among each other. As the MFPC, legislature, and stakeholder network grow in capacity over the coming years, consideration should be given to a structure that formally connects them.
Implementation Goal

The goals and recommendations of the Massachusetts Local Food Action Plan are implemented and the food system is strengthened.
Implementation Goal 1

The goals and recommendations of the Massachusetts Local Food Action Plan are implemented and the food system is strengthened.

Recommendation 1.1: Partners in implementation of the Plan should commit to principles of operation and action related to diversity and inclusiveness.

Action 1.1.1: Decision-making bodies should be intentionally diverse and inclusionary of the people that were a part of the planning process, particularly people most affected by food system inequities: organizations and individuals who represent farmers, food chain workers, and food insecure communities.

Action 1.1.2: Efforts should be made to engage people who are marginalized by hunger, food insecurity, racism, and other inequities.

Recommendation 1.2: Task a body of engaged stakeholders to promote and facilitate implementation of the Plan. This body should be collaborative, grounded in, and build from the diverse group of stakeholders who have led and lent their expertise to the development of the Plan through the Executive Committee, Planning Team, and Project Advisors. Envisioned participants in this collaborative include: statewide farm, fishing, food, land conservation, environmental, anti-hunger and public health organizations; regional entities such as “buy local” organizations, food banks, land trusts, regional planning agencies, economic development agencies, Workforce Investment Boards, and workforce education and training organizations; municipal entities, including local food policy councils, agriculture commissions, healthy lifestyle organizations, and food pantries; food businesses and cooperatives; and others who have participated in the development of the Plan.

The stakeholder collaborative should be a dynamic body whose structure and form would intentionally evolve over time. At the outset, the entity should be steered by the Plan’s current Executive Committee, with direction from the Plan’s current Project Advisors. In Year One (2016), the collaborative should focus on building policymaker and public support for the Plan’s goals and recommendations, making progress on specific Plan recommendations, and growing the statewide network of engaged and connected food system stakeholders. In Year Two (2017), the collaborative should continue to focus on Plan implementation, while addressing the issue of future form and function of the collaborative to maximize its collective impact.

Specific actions that the collaborative entity will begin in 2016 include:

Administration

Action 1.2.1: Find a fiscal agent for the collaborative. The agent should remain neutral in the functioning of the entity, and should not constrain or limit the identity or perception of the entity.

Action 1.2.2: Seek pro bono legal assistance for formally establishing the collaborative as a legal entity as necessary.

Action 1.2.3: Hire a project manager to provide overall coordination for the collaborative. The project manager would be responsible for day-to-day administration of the collaborative, including
developing the yearly implementation action plan, managing budgets, contracting with and overseeing consultants.

**Action 1.2.4:** Establish the initial structure for the collaborative.

**Action 1.2.4.1:** The current Executive Committee for the Plan should serve as the collaborative’s steering Committee. If any Executive Committee member chooses not to serve on the Steering Committee, the Executive Committee would choose a replacement who is experienced in the same sector as the exiting member. At least one member of the Planning Team should serve on the Steering Committee. The Steering Committee members will oversee the project manager, solicit input from the Advisory Team in designing the collaborative’s agenda and action steps, make decisions on adding agenda items that arise but are not in the Plan, and identify funding sources for the collaborative and specific implementation projects.

**Action 1.2.4.2:** The current Project Advisors to the Plan will serve as the collaborative’s Advisory Team. The Advisory Team will help design and compose the collaborative’s annual implementation action plan, and may lead or participate in standing or ad hoc work groups to address specific Plan recommendations. Advisory Team members will also provide outreach around the Plan to other stakeholders in their sector, and, in Year Two (2017), work with the Steering Committee to determine the future form and function of the collaborative.

**Action 1.2.5:** Secure funds for the collaboration’s operation and for any projects identified in the yearly implementation action plan.

**Action 1.2.6:** Contract with consultants for facilitation and engagement needs, as appropriate.

**Outreach and Visibility**

**Action 1.2.7:** Build public and political support for the Plan’s goals and recommendations.

**Action 1.2.7.1:** Direct stakeholder and policymaker outreach.

**Action 1.2.7.2:** Conduct briefings and workshops around aspects of the Plan’s goals and recommendations.

**Action 1.2.7.3:** Develop and execute a media strategy around the Plan.

**Action 1.2.8:** Identify agency and legislative champions for specific Plan recommendations.

**Action 1.2.9:** Develop strategic communications tools to keep Plan participants informed and engaged in implementation activities, and to broaden the network of engaged public and private sector participants.

**Implementation**

**Action 1.2.10:** Identify recommendations where the collaborative’s efforts should be targeted, either because of the cross-sectoral nature of the recommendation or the lack of an existing advocate or structure to promote or address the recommendation.
Action 1.2.11: Recommend specific implementation strategies to the MFPC, and working with the Council to pursue specific recommendations;

Action 1.2.12: Develop an annual implementation action plan for the collaborative, with benchmarks towards progress on specific goals and recommendations;

Action 1.2.13: Facilitate working groups on issues or topic areas identified in the plan, with a focus on multi-sectoral projects and those that don’t have existing organizations championing those items. These working groups may develop campaigns around legislative issues, work toward changes in regulations, or facilitate ongoing communication and networking among practitioners within a sector. They may be short-term engagements on particular topics around which the Plan has recommended collaboration, one-time gatherings called to address a particular issue or challenge, or ongoing opportunities for networking and resource sharing. Where appropriate, groups may be established across sectors to encourage systemic change, or may be focused on developing communities of practice within a particular sector, to help strengthen organizations’ capacities around particular skills.

Action 1.2.14: Take the lead or identify entities to take on projects proposed by the Plan, such as developing user-friendly guides to regulations, adapting portions of the Plan as advocacy tools, or system mapping.

Action 1.2.15: Coordinate efforts to track metrics as recommended by the Plan to assess progress toward goals. This will include continued engagement with other New England states to unify shared data and metrics.

Action 1.2.16: Identify the appropriate partners to develop and disseminate additional needed research and data analysis.

Network Building

Action 1.2.17: Develop relationships with businesses, organizations, and municipal stakeholders not yet engaged in the process to identify and pursue opportunities for collaboration.

Action 1.2.18: Seek opportunities to integrate the implementation efforts of this plan with existing activities by municipal governments and food policy councils, regional planning agencies, and economic development organizations.

Action 1.2.19: Represent the Plan where appropriate in planning and implementation efforts in other disciplines, such as municipal and regional planning, transportation, energy, labor and workforce, and others.

Action 1.2.20: Represent the State in New England multi-state planning initiatives, as appropriate.

Action 1.2.21: Secure resources to provide needs-based funding or stipends to organizations or entities interested in implementation.

Recommendation 1.3: Revitalize the MFPC as an engaged force toward coordinated regulations and supports for the food system, and a catalyst for changes recommended in the Plan.
**Action 1.3.1:** Members of the MFPC should support enacting legislation that broadens the scope of the MFPC beyond developing recommendations – currently its sole responsibility – to include actively coordinating food policy decisions and food system supports among agencies.

**Action 1.3.2:** The FPC should consider amending the enabling legislation to promote structural and operational changes that could improve engagement and efficacy, including:

- **Action 1.3.2.1:** Create additional seats on the MFPC to ensure representation of a broad range of public and private food system stakeholders. Consideration should be given to representatives of:
  - The Governor’s office.
  - Division of Marine Fisheries.
  - The EOEEA, specifically an individual representing the land interests of State agencies.
  - MassDOT.
  - UMass Extension.
  - The newly-established stakeholder network recommended by this plan.
  - An organization representing the interests of workforce development needs in the State

- **Action 1.3.2.2:** Consideration should be given to the role and necessity of the MFPC Advisory Committee.

- **Action 1.3.2.3:** Establish subcommittees or working groups as needed with a specific focus and limited timeframe.

- **Action 1.3.2.4:** Establish co-chairs, to encourage broader engagement from all participating agencies.

- **Action 1.3.2.5:** Hold more frequent meetings, to better facilitate discussion and ensure progress on tasks.

- **Action 1.3.2.6:** Attend annual meetings with commissioners of agencies represented on MFPC, to review progress, identify challenges, and celebrate successes from the previous year’s work.

**Additional tasks the MFPC could take on include:**

- **Action 1.3.2.7:** Set priorities for actions the MFPC will take based on the Plan’s recommendations, focusing on items that emphasize inter-agency collaboration around regulations and practices.

- **Action 1.3.2.8:** Develop plans for member agencies and organizations to commit to taking on plan-recommended tasks that are relevant to their agencies, and coordinating these efforts with the other implementation partners.

- **Action 1.3.2.9:** Set goals and establishing benchmarks for those goals to allow for measuring and reporting on progress.

- **Action 1.3.2.10:** Dedicate State funding to staffing a Food Policy Coordinator position to support the work of the MFPC, housed at one of the member agencies.
**Action 1.3.2.11:** Develop an inventory of all State programs that relate to food and identifying synergistic opportunities for the allocation of State resources to best meet the goals of the Plan. This inventory could lead to further recommendations about State agency budget and administrative priorities, and more efficient coordination among State agencies.

**Action 1.3.2.12:** Review and discuss pending regulatory changes, as well as ballot initiatives, that relate to the food system, assessing these actions in the context of the broad system and the goals of the Plan.

**Recommendation 1.4:** Establish a food system plan caucus in the legislature.

**Action 1.4.1:** Members of the legislature should consider establishing a food and farm caucus to develop and introduce legislation recommended by the Plan. The caucus should also be used as an opportunity to educate legislators about food system policy issues.

Participants in the caucus should include representatives from committees that consider legislation related to the food system including, but not limited to, committees on health care, agriculture, the environment, the State budget, and education.

Tasks may include:

**Action 1.4.1.2:** Review legislation, budgets, ballot initiatives and existing laws in the context of the broader food system, with an eye toward reforms that support the food system based on the goals of the Plan.

**Action 1.4.1.3:** Stay in regular contact with the MFPC in order to facilitate collaboration, where possible.

**Action 1.4.1.4:** Allocate funds to staffing the caucus.

**Recommendation 1.5:** Ensure that food system issues are integrated into all appropriate planning efforts.

**Action 1.5.1:** Support the creation of regional, municipal, and neighborhood food plans.

**Action 1.5.2:** Promote best practices and inclusionary processes in food planning. Stay abreast of food planning theory and practice through organizations like the American Planning Association and its Food Interest Group.

**Action 1.5.3:** Include food system planning in the Baker Administration’s Community Compact best practices.

**Action 1.5.4:** Include food accessibility in State Transportation Improvement Program evaluation criteria.

**Action 1.5.5:** Ensure that the Rural Policy Advisory Commission includes food policy issues in its discussions.

**Action 1.5.6:** Ensure that the Department of Housing and Community Development’s Economic Development Council includes food system concerns in its statewide economic development plan.

**Action 1.5.7:** Include food system consideration in all State, regional, and municipal level economic and workforce development planning.
**Action 1.5.8:** Include farmers and practitioners from all sectors of the food system in emergency preparedness planning.

**Action 1.5.9:** Allow the use of District Local Technical Assistance funds for local and sub-regional food system planning and implementation tasks.

**Action 1.5.10:** Take food system issues, including labor and workforce development, into consideration when developing Comprehensive Economic Development Strategy reports and regional economic growth plans.

**Action 1.5.11:** Develop resources or support existing entities to assist regions, municipalities, and neighborhoods in conducting food system plans. This could be in the form of food system planning toolkits and guidelines.

**Action 1.5.12:** Add guidance on food system planning for municipal planning documents, including master plans, open space and recreation plans, community needs assessments, hazard mitigation plans, and others.

**Action 1.5.13:** Coordinate with other states on interstate and regional food planning efforts.
## Metrics: Massachusetts Local Food System

The purpose of these metrics are to 1) establish a manageable set of data and measures that are relevant to the goals of the Massachusetts Local Food Action Plan; and 2) establish sources, units of measure, and collection and reporting intervals for the data and measures.

The criteria for selection of the proposed metrics below are relevance to the respective sector, as well as this plan’s overarching concerns with impacts to vulnerable residents, workforce development, and environmental sustainability.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Metric</th>
<th>Unit of measure</th>
<th>Sources</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increase production, sales and consumption of Massachusetts-grown foods</td>
<td>1. Total value of crop production in MA</td>
<td>Aggregate sales in dollars</td>
<td>USDA Economic Research Service</td>
<td>Farming</td>
</tr>
<tr>
<td>2</td>
<td>Value of individual crops production in MA</td>
<td>Sales of individual crops (fruit, vegetables, dairy, cranberries, maple, meat, hay), in dollars</td>
<td>National Agricultural Statistical Survey</td>
<td>Farming</td>
</tr>
<tr>
<td>3</td>
<td>Farm income per acre</td>
<td>Average value of crops sold per acre of harvested cropland, in dollars</td>
<td>USDA Census of Agriculture</td>
<td>Farming, Land</td>
</tr>
<tr>
<td>4</td>
<td>Value of seafood landed in MA</td>
<td>Aggregate sales in dollars</td>
<td>National Oceanic and Atmospheric Administration</td>
<td>Fishing</td>
</tr>
<tr>
<td>5</td>
<td>Value of seafood landed in MA</td>
<td>Sales of individual species (sea scallop, American lobster, clams, flounder, cod &amp; haddock, goosefish, eastern oyster, Atlantic herring, Atlantic mackerel, ocean quahog clam, under-eaten fish: dogfish, scup, green crab) in dollars</td>
<td>National Oceanic and Atmospheric Administration</td>
<td>Fishing</td>
</tr>
<tr>
<td>6</td>
<td>Wholesale seafood sales</td>
<td>In dollars</td>
<td>Data not currently collected</td>
<td>Fishing</td>
</tr>
<tr>
<td>7</td>
<td>Direct to consumer sales (including direct to consumer sales of fish)</td>
<td>Value of sales to consumers, in dollars</td>
<td>USDA Census of Agriculture, Northwest Atlantic Marine Alliance</td>
<td>Fishing</td>
</tr>
<tr>
<td>8</td>
<td>Consumption of locally grown products</td>
<td>Total sales, in dollars</td>
<td>Data not currently collected</td>
<td>Farming</td>
</tr>
<tr>
<td>9</td>
<td>Consumption of locally grown products</td>
<td>Local sales for individual crops (fruit, vegetables, dairy, cranberries, maple, meat), in dollars</td>
<td>Data not currently collected</td>
<td>Farming</td>
</tr>
<tr>
<td></td>
<td>Metric Description</td>
<td>Units</td>
<td>Source</td>
<td>Sector(s)</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>---------------------------------------------</td>
<td>------------------------------------</td>
</tr>
<tr>
<td>10</td>
<td>Consumption of locally raised and landed seafood</td>
<td>Total sales, in dollars</td>
<td>Data not currently collected</td>
<td>Fishing</td>
</tr>
<tr>
<td>11</td>
<td>Number of community-based, urban growing operations</td>
<td>Number of operations</td>
<td>Data not currently collected</td>
<td>Farming</td>
</tr>
<tr>
<td>12</td>
<td>Value of crops raised in community-based, urban growing operations</td>
<td>Total value, in dollars</td>
<td>Data not currently collected</td>
<td>Farming</td>
</tr>
<tr>
<td>13</td>
<td>Amount of local food used by MA food processing businesses.</td>
<td>Value of MA-grown and -raised food purchased by food processing businesses, in dollars</td>
<td>Data not currently collected</td>
<td>Processing</td>
</tr>
<tr>
<td>14</td>
<td>Farm to Institution purchases</td>
<td>Value of local food purchased by schools, universities, hospitals, and institutions, in dollars</td>
<td>Farm to School, Real Food Challenge, Healthcare Without Harm</td>
<td>Distribution</td>
</tr>
</tbody>
</table>

**Goal 2: Create jobs and economic opportunity in food and farming, and improve the wages and skills of food system workers.**

<table>
<thead>
<tr>
<th></th>
<th>Metric Description</th>
<th>Units</th>
<th>Source</th>
<th>Sector(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Size of food system</td>
<td>Annual gross food system product, in dollars</td>
<td>MAPC formula</td>
<td>All</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>Percent of Gross State Product</td>
<td>MAPC formula</td>
<td>All</td>
</tr>
<tr>
<td>17</td>
<td>Jobs in food system</td>
<td>Number of jobs (full/part time)</td>
<td>USDA Census of Agriculture, US Census, US Bureau of Labor Statistics</td>
<td>All</td>
</tr>
<tr>
<td></td>
<td>Training programs and technical assistance in food system (delineated by sector, including fish)</td>
<td>Number of people served</td>
<td>Massachusetts Workforce Alliance</td>
<td>All</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>People employed in farms</td>
<td>Number of jobs (full/part time)</td>
<td>National Agricultural Statistical Survey</td>
<td>Farming</td>
</tr>
<tr>
<td>22</td>
<td>Wages for farmworkers</td>
<td>Average, in dollars</td>
<td>National Agricultural Statistical Survey</td>
<td>Farming</td>
</tr>
<tr>
<td>23</td>
<td>Wages for farmworkers</td>
<td>Total aggregate, in dollars</td>
<td>National Agricultural Statistical Survey</td>
<td>Farming</td>
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<td>No.</td>
<td>Metric</td>
<td>Unit</td>
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<td>24</td>
<td>Farms without off-farm income</td>
<td>Number of farms</td>
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<td>Farming</td>
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<td>25</td>
<td>Farming industry revenue</td>
<td>Aggregate, in dollars</td>
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<td>26</td>
<td>Production costs</td>
<td>In dollars, and as percent of income</td>
<td>National Agricultural Statistical Survey</td>
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<td>27</td>
<td>People employed by fisheries</td>
<td>Number of jobs (full/part time)</td>
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<td>28</td>
<td>Wages for fishermen</td>
<td>Average, in dollars</td>
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<td>Wages for fishermen</td>
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<td>31</td>
<td>Number of businesses in food processing</td>
<td>Number of businesses, aggregate and by subsector</td>
<td>US Bureau of Labor Statistics</td>
<td>Processing</td>
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<tr>
<td>32</td>
<td>Number of People employed in food processing</td>
<td>Number of jobs (full/part time), aggregate and by subsector</td>
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<td>33</td>
<td>Wages for processing employees</td>
<td>Average, in dollars</td>
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<td>34</td>
<td>Wages for processing employees</td>
<td>Total aggregate and subsectors, in dollars</td>
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<td>Food processing industry revenue</td>
<td>Aggregate, in dollars</td>
<td>US Bureau of Labor Statistics</td>
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</table>

**Goal 3:** Protect the land and water needed to produce food, maximize environmental benefits from agriculture and fishing, and ensure food safety.

<table>
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<th>No.</th>
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<th>Unit</th>
<th>Source and Sector</th>
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<tbody>
<tr>
<td>36</td>
<td>Land protected by APR program</td>
<td>Number of acres</td>
<td>Massachusetts Department of Agricultural Resources</td>
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<td>37</td>
<td>Farmland under permanent protection</td>
<td>Number of acres</td>
<td>Massachusetts Department of Agricultural Resources, Land Trusts, Executive Office of Energy and Environmental Affairs</td>
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<td>38</td>
<td>Permanently protected prime farmland soils</td>
<td>Number of acres</td>
<td>Massachusetts Department of Agricultural Resources, Land Trusts</td>
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<td>39</td>
<td>Land in active food production (not land in farms, which include woodlands and wetlands)</td>
<td>Number of acres</td>
<td>Massachusetts Department of Agricultural Resources</td>
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<td>Goal Description</td>
<td>Metric Description</td>
<td>Responsible Agency</td>
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<tr>
<td>40</td>
<td>Publicly-owned land open to farming</td>
<td>Number of acres</td>
<td>Executive Office of Energy and Environmental Affairs State-owned Farmland Licensing Program</td>
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<tr>
<td>41</td>
<td>Eligible farmland in Chapter 61</td>
<td>Number of acres and percent of eligible acres</td>
<td>Massachusetts Department of Agricultural Resources</td>
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<tr>
<td>42</td>
<td>Farmland converted to development</td>
<td>Number of acres</td>
<td>Executive Office of Energy and Environmental Affairs</td>
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<td>43</td>
<td>Urban land in food production</td>
<td>Number of acres</td>
<td>Department of Energy Resources, Massachusetts Clean Energy Center</td>
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<tr>
<td>44</td>
<td>Anaerobic digester production</td>
<td>Megawatts per year</td>
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<td>45</td>
<td>MA Farm Energy Program success</td>
<td>Megawatts per year</td>
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<td>46</td>
<td>Land planted in cover crops</td>
<td>Number of acres</td>
<td>National Oceanic and Atmospheric Administration</td>
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<tr>
<td>47</td>
<td>Nutrient management plans</td>
<td>Number of farms provided with technical assistance to complete plans</td>
<td>Data not currently collected.</td>
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<tr>
<td>48</td>
<td>Health and risk of fish species</td>
<td>Stock assessment showing number of species, and marine ecosystem health indicators</td>
<td>Data not currently collected.</td>
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</tbody>
</table>

**Goal 4: Reduce hunger and food insecurity, increase the availability of healthy food to all residents, and reduce food waste.**

<table>
<thead>
<tr>
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<th>Goal Description</th>
<th>Metric Description</th>
<th>Responsible Agency</th>
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<tbody>
<tr>
<td>49</td>
<td>Food Insecurity rates</td>
<td>Percent for total population, children, and seniors</td>
<td>Project Bread</td>
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<tr>
<td>50</td>
<td>MA residents using SNAP benefits</td>
<td>Number of SNAP users</td>
<td>USDA Economic Research Service</td>
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<tr>
<td>51</td>
<td>MA residents using SNAP benefits</td>
<td>Percent of state population using SNAP</td>
<td>USDA Food and Nutrition Service</td>
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<tr>
<td>52</td>
<td>SNAP retailers</td>
<td>Number of retailers accepting SNAP, number accepting incentives</td>
<td>Data not currently collected.</td>
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<td>53</td>
<td>Uptake of nutrition programs for SNAP recipients</td>
<td>Number of SNAP recipients using nutrition classes and programs</td>
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<td>54</td>
<td>Food security planning</td>
<td>Number of municipalities and public agencies including food access consideration in planning</td>
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<td>No.</td>
<td>Metric Description</td>
<td>Metric Definition</td>
<td>Source</td>
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<td>55</td>
<td>Public school purchases of local food</td>
<td>Dollars spent by public schools on local food</td>
<td>USDA Food and Nutrition Service</td>
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<td>56</td>
<td>Public school purchases of local food that are local</td>
<td>Percent of public school food purchases that are local</td>
<td>USDA Food and Nutrition Service</td>
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<tr>
<td>57</td>
<td>Local food purchased with MEFAP funds</td>
<td>Amount of local food purchased by MEFAP program, in dollars</td>
<td>Massachusetts Department of Agricultural Resources</td>
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<tr>
<td>58</td>
<td>Local food purchased with MEFAP funds</td>
<td>Amount of local food purchased by MEFAP program, in pounds</td>
<td>Massachusetts Department of Agricultural Resources</td>
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<tr>
<td>59</td>
<td>Food waste landfilled</td>
<td>Pounds landfilled</td>
<td>Massachusetts Department of Environmental Protection</td>
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<td>60</td>
<td>Food diverted from waste stream to emergency hunger relief</td>
<td>In pounds and dollar value</td>
<td>Massachusetts Farm Bureau Federation Young Farmers and Ranchers Committee</td>
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<td>61</td>
<td>Food diverted from waste stream to energy production</td>
<td>Number of digesters accepting food as feedstock, and pounds diverted</td>
<td>U.S. Environmental Protection Agency</td>
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<td>62</td>
<td>Food diverted from waste stream for compost in MA</td>
<td>Pounds diverted</td>
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<tr>
<td>63</td>
<td>Number of people engaged in community-based growing operations</td>
<td>Number of operations, number of people engaged</td>
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<tr>
<td>64</td>
<td>Nutrition Education</td>
<td>Number of people directly and indirectly engaged in SNAP education programs</td>
<td>UMass Extension SNAP Education Program Annual Reports</td>
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</table>