Report of the Special Legislative Commission on Agriculture in the Commonwealth in the 21st Century

Letter from the co-chairs

Farmers have always been challenged with long hours, physical demands, a changing climate, unpredictable market conditions, financial challenges, and the constant need to adapt to new scientific discoveries and technologies.

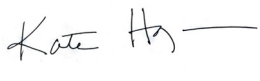
Today, these challenges are compounded — the cost and scarcity of land and labor have heightened financial risks; the increased occurrence and strength of climate change-induced natural disasters are taking a greater toll; and once-reliable and necessary federal funding streams and technical assistance have been or are under threat of being cut. In addition, today's farmers must also contend with a lack of successors. As one of our commission members pointed out, "farming is hard and getting harder."

To address these urgent challenges, Representative Kate Hogan filed legislation to establish a commission to investigate how to support and sustain Massachusetts agriculture in the 21st century. The Commission was co-chaired by Representative Hogan and Senator Jo Comerford. We are grateful to House Speaker Mariano, Senate President Spilka, our legislative colleagues for their support, our dedicated staff, and to our fellow Commission members for their work and engagement. This report is a summary of the Commission's work, findings, and recommendations.

There is much at stake, and Massachusetts has committed significant support already. In recent years, the Healey-Driscoll Administration has introduced a new Director of Rural Affairs, commissioned several cornerstone reports to direct policy, and awarded numerous rounds of grant funding. Working with the Legislature, significant funding and policy investments for agriculture have been included in the past several annual state budgets and in recent economic development omnibus legislation.

This report builds on that work and offers a legislative and policy perspective to the challenges facing our farms. After hearing testimony from agricultural leaders, experts, and farmers, Commission members developed hundreds of suggestions — including a mix of legislative, regulatory, and funding recommendations — which were then reviewed and prioritized. Our intention is that this report is viewed as a roadmap for legislators as they develop and consider legislative proposals in the 194th General Court and in future sessions. Our report also provides regulatory guidance for Massachusetts Department of Agricultural Resources and other executive branch partners.

Massachusetts is well-poised to act to further strengthen and support its agriculture industry that thrives in urban, suburban, and rural areas across the Commonwealth. As this report will show, there are specific and implementable steps we can take now to help farmers prepare for, and respond to, climate change; provide financial assistance for farmers; strengthen technical assistance and education programs; facilitate responsible policies and incentives for renewable energy generation; promote programs that simultaneously bolster food security and our local farms; and foster economic and community development around our agricultural assets.



Kate Hogan
State Representative
3rd Middlesex

Jo Comerford
State Senator
Hampshire, Franklin, Worcester

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Section 1: Executive Summary and Commission Business

Executive Summary

The Special Legislative Commission on Agriculture in the 21st Century was charged with investigating the needs of Massachusetts agriculture in the 21st century as part of efforts to ensure a sustainable industry for years to come.

Its timing coincides with a period of existential challenges for the industry: the Commission's hearings occurred during a year with multiple severe weather events that devastated crops in the Commonwealth, at a time when most Massachusetts farmers operate at a loss. The average farmer in Massachusetts sells 94.8 cents[1] in agricultural products for every dollar of production expense and relies on income not earned through product sales to remain in business.

The Commission focused on the topics of climate change and natural disasters, education and technical assistance, farm energy, economic and community development, and food security.

The Commission hosted nine hearings across the span of fourteen months, hearing from over 40 testifiers—farmers, educators, researchers, legislators, government administrators, and subject matter experts from Massachusetts, surrounding states, and other countries—about their work and their recommendations on how to better support and sustain agriculture in Massachusetts.

Summaries of each hearing can be found in the report's appendix.

As part of the Commission's work, the Chairs divided Commission members based on their subject matter expertise into three recommendation drafting groups that focused on the topics of climate change and natural disasters; renewable energy on farms; and education, research, and technical assistance.

Once the hearings were complete, the Commission Chairs and their staff began drafting this report and coordinating recommendations from the drafting groups.

The drafting groups produced hundreds of suggestions, which can be viewed in their entirety in the appendix. The suggestions were pared, prioritized, and published as the Commission's final recommendations, found in Section 3 of this report. The final recommendations were chosen to align with the Commission's statutory charge, to address the most urgent issues facing agriculture in Massachusetts, and to present the most achievable solutions that the Commonwealth could undertake in the next 25 years to best support our farms and farmers.

Visiting the chickens at Sustainable Nantucket

Commission Charge

Established by Session Law (Acts 2020) Ch. 358

SECTION 94. There is hereby established a special commission pursuant to section 2A of chapter 4 of the General Laws to conduct an investigation and study regarding the needs of agriculture in the commonwealth in the 21st century, including the viability, efficiency, climate change resiliency, education, technical assistance and energy needs of farms and means of ensuring farms' ability to adapt to changing economic, climate and energy conditions.

The commission shall consist of 1 member who shall be appointed by the senate president, who shall serve as co-chair; 1 member who shall be appointed by the minority leader of the senate; 1 member who shall be appointed by the speaker of the house of representatives, who shall serve as co-chair; 1 member who shall be appointed by the minority leader of the house of representatives; the house and senate chairs of the joint committee on environment, natural resources and agriculture; the house and senate chairs of the joint committee on telecommunications, utilities and energy; the secretary of energy and environmental affairs or a designee; the secretary of housing and economic development or a designee; the commissioner of agricultural resources or a designee; a representative of the Massachusetts Farm Bureau Federation, Incorporated; a representative of the University of Massachusetts center for agriculture, food and the environment; a representative of the Massachusetts chapter of the Northeast Organic Farming Association; a representative of the Cape Cod Cranberry Growers' Association; and a representative of the Massachusetts Association of Dairy Farmers, Inc.

Members shall not receive compensation for their services but may receive reimbursement for the reasonable expenses incurred in carrying out their responsibilities as members of the commission. The executive office of energy and environmental affairs and executive office of housing and economic development may furnish reasonable staff and other support for the work of the commission.

The commission shall review: (i) methods of supporting farms including development of tax incentives and credits for equipment related to farm-based renewable energy projects; (ii) effects of zoning ordinances and bylaws on farm-based renewable energy projects and means of reducing administrative and regulatory barriers to such projects; (iii) potential zoning exemptions of farm renewable energy systems; (iv) the feasibility of establishing an incentive program to facilitate the growth of non-solar renewable-energy distributed-generation projects on farms; (v) methods of encouraging the use of renewable

Ferjulian's Farm Stand, Hudson

PYO Strawberries at Russells Orchards, Ipswich

energy resources on farms; (vi) development of potential grant programs in support of farms to develop farm-based renewable energy capabilities including wind harvesting, energy conserving refrigerated food storage pilot projects, methane capture and green combustion and solar and photovoltaic energy projects; (vii) feasibility of using farms as resiliency centers during power outages or extreme weather events by installing technology such as battery storage or microgrids; (viii) the effects of climate change and means by which farms may seek to adapt to climate change; (ix) methods of promoting and facilitating more prompt interconnection of energy projects owned or operated by agricultural producers; (x) the development of a single uniform application for use by owners of farms in the commonwealth for application to any and all grant and other assistance programs administered by the department of agricultural resources and consistent with federal grant and program application criteria; (xi) the benefits of designating an administrator or separate office within the department of agricultural resources to provide advice, technical assistance and other guidance to owners of farms who apply for grants and other programs; (xii) ways to support, expand and enhance opportunities for agricultural tourism; (xiii) the timing of grant applications to the department of agricultural resources and department responses with a view to facilitating more efficient and timely use of grant funds; (xiv) administrative and regulatory barriers to and restrictions on farm owners placing renewable energy structures on farmland; (xv) means of addressing the need for education and technical assistance to farmers; and (xvi) any other matters the commission deems relevant to supporting the viability of farms in the commonwealth.

The commission shall file a report of its findings and recommendations, together with drafts of legislation necessary to carry those recommendations into effect, by filing the same with the clerks of the senate and the house of representatives, the chairs of the senate and house committees on ways and means, the senate and house chairs of the joint committee on environment, natural resources and agriculture, and the house and senate chairs of the joint committee on telecommunications, utilities and energy not later than June 30, 2021.

Revived and Continued by Session Law (Acts 2023) Ch. 2 and Session Law (Acts 2025) Ch. 73

Date extended until December 31, 2026.

Commission Process and Recommendation Drafting Groups

As the Commission carried out its charge and held topic-sensitive hearings, the Co-Chairs determined there was a need for further investigation. In partnership with stakeholders and members of the Commission, the Co-Chairs created recommendation drafting groups to evaluate and provide further insight to critical matters relating to agriculture.

The Co-Chairs identified the following areas in need of additional research: climate change and natural disasters, education and technical assistance, and farm energy.

At the direction of Representative Hogan and Senator Comerford, commission members with experience in each of these fields were assigned to the above three drafting groups. Members from the Farm Bureau Federation of Massachusetts and the Massachusetts Department of Agricultural Resources participated in and helped facilitate each recommendation drafting group.

Each drafting group met as needed to research and put together recommendations to be considered for inclusion in the final report. Each drafting group's full recommendations can be found in this report's appendix.

Apple picking season Nicewicz Family Farm, Bolton

Commission Members

Commission Chairs:

Representative Kate Hogan, Speaker Pro Tempore, Massachusetts House of Representatives

Senator Jo Comerford, Senate Acting Chair of the Joint Committee on Agriculture in the 2023-2024 legislative session and Senate Vice Chair of the Joint Committee on Agriculture and Fisheries in the 2025-2026 legislative session

Commission Members:

Representative Christine Barber, House Chair of the Joint Committee on the Environment in the 2025-2026 Session

Senator Mike Barrett, Senate Chair of the Joint Committee on Telecommunications, Utilities and Energy

Representative Natalie Blais, House Chair of the Joint Committee on Agriculture and Fisheries in the 2025-2026 Session

Representative Dan Cahill, House Chair of the Joint Committee on the Environment and Natural Resources in the 2023-2024 legislative session

Clem Clay, Director of the University of Massachusetts Extension Agriculture Program, Appointed by the Director of the University of Massachusetts Center for Agriculture, Food and the Environment

Stephanie Cooper, Undersecretary for Environment, Appointed by the Secretary of the Executive Office of Energy and Environmental Affairs

Representative Mark Cusack, House Chair of the Joint Committee on Telecommunications, Utilities and Energy in the 2025-2026 Session

Mark Duffy, Great Brook Farm, Appointed by the Massachusetts Association of Dairy Farmers, Inc.

John Duke, Treasurer of the NOFA/Mass Board of Directors, Appointed by the Massachusetts Chapter of Northeast Organic Farming Association (NOFA/Mass)

Senator Dylan Fernandes, Senate Chair of the Joint Committee on Agriculture and Fisheries in the 2025-2026 Session

Anne Gobi, Director of Rural Affairs, Appointed by the Secretary of the Executive Office of Economic Development

Ashley Randle, Commissioner of the Massachusetts Department of Agricultural Resources

Senator Becca Rausch, Senate Chair of the Joint Committee on the Environment and Natural Resources

Representative Jeff Roy, House Chair of the Joint Committee on Telecommunications, Utilities and Energy in the 2023-2024 legislative session

Representative Paul Schmid III, House Chair of the Joint Committee on Agriculture in the 2023-2024 legislative session

Karen Schwalbe, Executive Director of the Massachusetts Farm Bureau Federation, Inc., Appointed by the Massachusetts Farm Bureau Federation, Inc.

Michael Smolak, Smolak Farms, Appointed by the Senate Minority Leader

Iain Ward, CEO & Founder of Solar Agricultural Services, Inc., Appointed by the House Minority Leader

Brian Wick, Executive Director of the Cape Cod Cranberry Growers Association, Appointed by the Cape Cod Cranberry Growers Association

Section 2: Agriculture in Massachusetts

History and State of Agriculture in Massachusetts

Like many states, Massachusetts has transitioned from an agrarian to a modern economy. Until 1920, the majority of Massachusetts was made up of farmland — over 60% of the Bay State remained farmland until 1900, and over 50% farmland until 1920 (although most of it was not actively being farmed). During this period, there were between 32,000 and 38,000 farms across Massachusetts.[2]

By 1940, only 38% of Massachusetts was farmland.[3] After World War II, the decline of agriculture in Massachusetts was swift, and by the 1970s there were over a million fewer acres in farmland and 30,000 fewer farms. Since then, the percentage of farmland in the state has not climbed above 14% and barely reached 10% when last counted in 2021. Today, there remain just over 7,000 farms in Massachusetts.[4]

Agricultural production, too, experienced challenges after the mid-twentieth century, as the state's specialty crops (squash, beans, pumpkin, tobacco) struggled to compete with growing national markets dominated by larger producers with easier access to land and labor.[5]

A typical farm today in Massachusetts faces numerous challenges and is:

- **Not likely to be owned by people of color**—approximately 97% of Massachusetts producers identify as white (compared to 61.6% of the overall state population who identify as white), 1.5% identify as Hispanic or Latinx (compared to 18.7% of the overall state population), 1% identify as Black or African American (compared to 12.4% of the overall state population) and less than 1% identify as Asian or Native American (6% and 1.1% of the overall state population, respectively).[6]
- **Operating at a loss**—Two in three Massachusetts farmers operate at a loss and the average farmer in Massachusetts sells 94.8 cents in agricultural products for every dollar of production expense, meaning many farmers must rely on off-farm income, agritourism, or other sources of revenue in order to remain financially viable. Nationally, farmers earn an average of $1.28 for every dollar spent on production.[7]
- **Aging and unsure of their farm's future**—In 2022, approximately 67% of all Massachusetts farmers were 55 years or older. As they age many struggle to identify a succession plan for their farm, including who will take over ownership and operations when they are no longer able.[8]
- **Balancing high land and labor costs and increased competition for limited available farmland**—Massachusetts' value per acre of land is 3.4 times higher than the national average, at approximately $14,300 per acre compared to $4,170 per acre nationally. This creates significant upfront expenses that many Massachusetts farmers are unable to recoup through sales and can push farmers to sell their land to the highest bidder, often someone who wants to develop the land.[9]
- **Becoming more rare**—Massachusetts continues to lose farmland; between 2017 and 2022, the state lost approximately 5.5% of available farmland (twice the national rate), or 27,000 acres, as a result of issues that challenge farm viability, including climate change, development and housing pressures, economic challenges, farm succession and an aging workforce, and renewable energy generation infrastructure.[10]

Massachusetts supports its farmers through several state programs and agencies. Some examples include: the Massachusetts Department of Agricultural Resources (MDAR), the Department of Transitional Assistance which administers the Healthy Incentives Program (HIP), and the UMass Extension Agriculture Program. Underscoring agriculture's importance in the Commonwealth, the Healey-Driscoll Administration created a new Director of Rural Affairs under the Executive Office of Economic Development. Federal agencies such as the U.S. Department of Agriculture and the Natural Resources Conservation Service also provide essential funding and technical support to farmers. Massachusetts also benefits from a robust system of organizations supporting farmers and the local food system; including the Massachusetts Farm Bureau Federation, the Massachusetts chapter of the Northeast Organic Farming Association (NOFA Mass), regional Buy-Local organizations, the Massachusetts Food System Collaborative. Commodity grower organizations also play essential roles in helping farmers access resources, providing technical and business assistance, and strengthening local markets.

Recent Research, Investments, and Policy Advancements in Agriculture

Notably, and fortunately, this Commission is not the first step Massachusetts has taken to support its farmers in recent years—several foundational reports and initiatives have been released in the past 10 years that provide strong building blocks for the work and recommendations of this Commission.

In 2013 the statewide Food Policy Council began working on a Local Food Action Plan.[11] Adopted in 2015, this plan highlighted the need to strengthen the local food system by increasing the production, sales, and consumption of Massachusetts-grown foods; creating jobs and economic opportunities in agriculture and improving wages and workforce development for food system workers; protecting the land and water necessary for food production while promoting environmental sustainability and food safety; and addressing food insecurity by expanding access to healthy foods and reducing food waste across the Commonwealth.

In 2022 the Massachusetts Healthy Soils Action Plan was developed and released by the Massachusetts State Commission for Conservation of Soil, Water & Related Resources. The Plan contains recommendations for reaching a goal of "no net loss of Soil Organic Carbon between 2021 and 2050," and for reversing the loss and degradation of agricultural soils.[12]

In alignment with the Healthy Soils Action Plan, the Executive Office of Energy and Environmental Affairs (EEA) announced the Resilient Lands Initiative in 2023, a suite of policies and programs that aim to "protect and improve the quality of life for residents of every Massachusetts community through land conservation, restoration, and stewardship initiatives that conserve and enhance the health of the forests, farms, and soils," and serve as a companion initiative to the Commonwealth's decarbonization and clean energy plans.[13]

Also in 2023, MDAR released the Massachusetts Farmland Action Plan, "a long-range strategic initiative intended to guide actions to ensure that farmland and farming are available and viable for current and future generations in Massachusetts,"[14] and the New England State Food System Planners Partnership released "New England Feeding New England: A Regional Approach to Food System Reliance," a report that outlines what it would take for the six New England states to provide 30% of their food from regional farms and fisheries by 2030.[15]

The 2023-2024 legislative session also included numerous investments in, and policy advances for, agriculture in the Commonwealth. First, the session included the creation of a stand-alone Joint Committee on Agriculture and featured the return of the Legislature's second-largest caucus, the Food System Caucus. Then, following devastating, climate change-induced storms and flooding in the summer of 2023, and damaging freeze events in early February and May that year, the Healey-Driscoll Administration and the Legislature partnered to release $20 million to farms impacted by severe weather events. This funding paved the way for the creation of a permanent Disaster Relief and Resiliency Fund in the Fiscal Year (FY) 2025 budget which acknowledges farms as being eligible for support in the wake of a disaster.

Additional critical investments in agriculture and the local food system were made in both the FY24 and FY25 budgets, including funding for Food Security Infrastructure Grants, Buy Local organizations, MDAR grant programs, the Senior FarmShare Program, and more. The Mass Leads Act, a nearly $4 billion economic development bond bill passed in November, 2024, authorized $21 million for resilience in agriculture and fishing, created a land acquisition program under MDAR to protect and conserve agricultural land and provide affordable access for beginning farmers, modernized the Agricultural Preservation Restriction (APR) program to allow for more agritourism activities, and provided that farmland used to create products from horticultural crops should also be assessed and taxed as horticultural land.

Packing vegtables for the Quabbin Harvest Senior FarmShare Program

Recognizing the inherent connection between agriculture and food security, recent years have also seen advancements in increasing access to local food for food insecure populations. More than one in three Massachusetts residents reported household food insecurity in 2024, and farms have provided a strong response to widespread challenges of hunger and poor nutrition.[16] The Healthy Incentives Program (HIP), the Massachusetts Emergency Food Assistance Program (MEFAP) and its Massachusetts Grown Initiative, universal school meals, the Massachusetts Farm to School and FRESH Grants initiatives, and other programs have presented lifelines for farmers and food insecure residents alike.

The Commonwealth is also focused on achieving its climate goals and has several programs that support renewable energy generation on farmland. The Massachusetts SMART solar program, for example, provides price adders and subtractors for solar projects, including an adder and rules (finalized in 2022) for placing solar on agricultural land.[17] The Clean Energy Extension at UMass Amherst provides valuable technical assistance to farmers on requirements and opportunities for generating renewable energy on their farms.

MDAR administers several complementary programs that can support renewable energy adoption and overall farm sustainability that, together, help Massachusetts farmers transition to cleaner energy, improve economic viability, and contribute to statewide climate goals:

- **Farm Viability Enhancement Program (FVEP)**: Provides business technical assistance and funding for infrastructure improvements in exchange for term easements to protect farmland.
- **Climate Smart Agriculture Program (CSAP)**: Offers grants to support farms in protecting water resources, addressing climate change, saving energy, composting, and enhancing food safety practices.
- **Food Security Infrastructure Grant Program (FSIG)**: Strengthens the Massachusetts food system and builds resilience within the food supply chain through grants that improve local food production and distribution, strengthen the middle of the food supply chain, expand food access and nutrition security, and support emergency preparedness.
- **Massachusetts Farm Energy Program (MEFP)**: Managed in partnership with the Center for EcoTechnology, provides technical and financial assistance to agricultural producers to install energy efficiency improvements on farms.
- **The Agricultural Preservation Restriction Program (APR)**: Protects productive farmland by purchasing deed restrictions, making land more affordable to farmers and ensuring farmland remains farmland.

Section 3: Challenges, Opportunities, Recommendations

Climate Change and Natural Disasters

The agriculture industry in the United States continues to feel the impacts of climate change on the growth and production of our food. Massachusetts is familiar with the enormous burden that climate change has brought upon our farms, affecting nearly every aspect of the growing process. Massachusetts has warmed by 2.75 degrees Fahrenheit in the last century, making way for unpredictable weather.[18] Historically, in the Commonwealth, hot summer days felt like 81 degrees (F) on average, but by 2050, those days will feel like 94 degrees and continue to increase by the decade.[19] Farm workers are already struggling in Massachusetts to stay safe on increasingly hot summer days. The Environmental Defense Fund reports that, nationally, "U.S. crop workers are 20 times more likely to die from heat-stress-related illness than civilian workers in the U.S."

According to our farmers and agriculture experts, there is no more "normal" in Massachusetts when it comes to the growing season. Farmers also report precipitation is changing, impacting everything from feed yields, planting, weeding, harvesting, and managing fertility and pests.[20]

MDAR offers support for agriculture through grants aimed at climate change mitigation, resiliency, food security, and clean energy. In the Commission's hearing on Climate Change and Natural Disasters, Keith Zaltzberg-Drezdahl, Managing Director and Head of Planning at Regenerative Design Group Cooperative, testified to the critical value of the Massachusetts Healthy Soils Action Plan, which offers targeted recommendations for improving soil health, supporting ecosystems, and increasing productivity in the face of environmental stressors. Emily Sampson from the National Conference of State Legislatures (NCSL) underscored the value of the Healthy Soils Action Plan with examples of other state governments that have taken proactive stances to advance soil health programs and are benefitting from better crop performance, resilience to extreme weather, and reduced negative impacts of stormwater.

Tending fires at Red Fire Farm to save peach trees from frost, April 2024.

MDAR and UMass Extension also provide farmers with guidance on food safety and crop marketability—helping to prevent health risks from drought-affected crops and offering recommendations on cover crops and plant diseases to support future growing seasons.

In 2023, three severe weather events—a deep freeze in February, a late frost in May, and severe flooding in July—led to the establishment of several disaster assistance programs created and administered by the Commonwealth. These programs provided services such as debris removal, home cleanup, educational resources, financial assistance, mental health resources, resources for farms, and assistance in reporting damage.[21] Notably, the Healey-Driscoll Administration and

the Legislature allocated $20 million to farms impacted by severe weather events in 2023.[22]

In 2023, Massachusetts was one of only two states in the nation that did not have a dedicated disaster account to cover costs from natural disasters or other emergencies.

Buy-Local organizations from across the Commonwealth also acted in the wake of these disasters. Buy-Locals connect farmers to their surrounding communities and offered financial assistance and other resources to farms.[23] Charitable organizations and USDA programs also offered financial assistance and valuable resources.[24]

In 2023, Massachusetts was one of only two states in the nation that did not have a dedicated disaster account to cover costs from natural disasters or other emergencies. Through the fiscal year 2025 (FY25) budget, the Healey-Driscoll Administration and the Legislature partnered to establish the Commonwealth's first permanent disaster relief fund, the Disaster Relief and Resiliency Trust Fund, and explicitly named farmers as eligible beneficiaries of said fund. The fund received an initial capitalization of $14 million in the FY25 budget, but the fund was not set up with a permanent funding mechanism, meaning that the fund currently relies on one-time, unpredictable appropriations.

Testifying at the Commission's hearing, Phil Korman, Executive Director of Community Involved in Sustaining Agriculture (CISA), highlighted the need for additional financial protection programs for farmers, including loan forgiveness programs, enhanced marketing support to retain some value for damaged crops, and investments in community relationships (ex. United Way) and on-farm practices that build long-term resilience, especially for beginning and small-scale farmers who are essential to the future of farming in the Commonwealth.

While farmers take on climate change, the Commonwealth must preserve its existing farmland and measure farmland loss. According to the most recent USDA Census, from 2017 to 2022, Massachusetts lost 7% of its cropland and 12% of its pastureland, a greater decline than 40 other states.[25] The USDA and Natural Resources Conservation Service (NRCS) collaborate with MDAR to provide a significant portion of the funding for the Agricultural Preservation Restriction (APR) Program, which is one tool that can be leveraged to preserve agricultural lands.

Climate change not only impacts food production and agriculture in Massachusetts, but it affects major agricultural states and countries on which our food system relies. The impacts of climate change on the rest of the U.S. and the world leave Massachusetts vulnerable to supply chain disruptions. To decrease the likelihood that our food system collapses due to climate related disasters in other parts of the country, it is imperative to strengthen our farms and food system in the Commonwealth by tracking our food production and intake within the state. Supporting more funding for our most important farming resources such as MDAR and the Center for Agriculture, Food, and the Environment (CAFE), will only further the Commonwealth's progress toward climate resilient agriculture.

Flooding at Mountain View Farm, Easthampton, Summer 2023

The ever-increasing changes our farms and farmers are experiencing require the solutions and innovations of the 21st Century.

Climate Change and Natural Disasters Problem Statements and Recommendations

Problem Statement: Climate change results in inconsistent and often destructive weather patterns, disrupting food production. Weather-related disasters are becoming more frequent and more damaging, and though the state has a new permanent disaster relief fund, the fund does not have a permanent funding mechanism. In addition, farms in Massachusetts normally do not qualify for insurance or grant funding through USDA or FEMA following disasters because the level of destruction is too "small." Farmers are usually left to independently address damage and other impacts on their operations following disasters.

Recommendations:

1. Pass legislation to designate a permanent funding mechanism for the Disaster Relief and Resiliency Fund. (Legislation has been filed in the 194th General Court.)
2. Appropriate adequate funds to allow MDAR to support controlled-climate growing infrastructure that helps farmers maintain production in the face of climate extremes (greenhouses, abandoned industrial building reuse, high tunnels, hoop houses, etc.) through programs such as the Urban Agriculture program and the Climate Smart Agriculture Program (CSAP).
3. Appropriate adequate funds to allow MDAR to establish grants for protective equipment for farmers and farm workers that help reduce health risks caused by weather extremes.

Problem Statement: Climate change can lead to change in agricultural productivity. For example, warmer temperatures may lead to longer growing seasons, allowing for longer-maturing crops but higher irrigation costs. Changing weather patterns also lead to additional pressures from invasive flora and fauna. Costs are rising to implement climate-smart practices, while also maintaining stewardship of natural resources such as soil health, water retention, and carbon sequestration.

Recommendations:

1. Increase funding to UMass Extension to increase staff capacity to conduct research, education, and technical assistance for farmers by (1) including on-farm engineering services to support growers in resilient practices, and (2) include business management and planning training and technical assistance to build resilience.
2. Increase funding to support climate resilience investments in agriculture through programs such as MDAR's Agricultural Climate Resiliency & Efficiencies (ACRE) and Agricultural Environmental Enhancement Program (AEEP).
3. Direct MDAR to focus their grant programs toward applicants who demonstrate a capacity to adopt sustainable climate smart practices.
4. Appropriate adequate funds to enable MDAR to track their grants' contributions toward statewide emission and climate goals and set benchmarks and goals to measure progress.
5. Fund and implement recommendations in the Massachusetts Healthy Soils Action Plan, including hiring a Healthy Soils Coordinator to drive this work.
6. Fund technical service providers to assist grant applicants with writing applications.
7. Design grant programs to both strengthen economically viable farms and support more vulnerable ones in building climate resilience.
8. As part of Executive Order No. 645, Governor Healey established a Commission on the Payment in Lieu of Taxes ("PILOT") Program for State-Owned Land, charged with advising the Governor on potential reforms to the PILOT program, with particular attention to geographic equity, fiscal sustainability, operational feasibility, and alignment with the state's land conservation, biodiversity, and climate goals.[26] As part of this commission or elsewhere, develop a state payment for ecosystem services (PES) program for farmers, to compensate them for public services such as carbon sequestration, water filtration and retention, soil health enhancement, viewshed improvements, forest management, biodiversity conservation, pollinator health and habitat,

and others. Appropriate adequate funds to support the recommended payment model.

Problem Statement: Treated sewage sludge has been applied to farmland for decades as an inexpensive fertilizer. Per- and polyfluoroalkyl substances (PFAS), also known as "forever chemicals," enter the wastewater system from numerous sources. When contaminated sludge is used on farmland, the PFAS chemicals can bioaccumulate in the farm's produce or animal products and are then passed on to farmers, farm workers, and consumers. Even small exposure to PFAS chemicals is harmful to human health. Farms with significant levels of PFAS can be forced to close and the soil rendered unusable.

Recommendations:

1. Pass legislation to indemnify farmers from legal action brought as a result of PFAS contamination (due to standard or previously accepted agricultural practices), and exempt farmers from rollback or conveyance taxes for Chapter 61A land or APR properties removed from production due to regulatory action related to PFAS. (Legislation has been filed in the 194th General Court.)
2. Pass legislation to establish a relief fund to support farmers impacted by and seeking to avoid PFAS contamination. (Legislation has been filed in the 194th General Court.)

Technical Assistance and Education

Under President Lincoln and through the Federal Morrill Land Grant Act of 1862, each state was granted land to create a state university focused on the teaching of practical agriculture, science, military science, and engineering.[27] While acknowledging and grappling with the unjust seizure and sale of tribal lands belonging to 82 Native Nations west of the Mississippi that funded the land grants,[28] Massachusetts is proud of its tradition of providing practical education to farmers. The Commonwealth's flagship campus, the University of Massachusetts at Amherst, was established as the Massachusetts Agricultural College in 1863, and still hosts world-renowned programs of study for agriculture and food sciences.

Agriculture is changing and requires a different type of understanding and educational experience to ensure its sustainability.

Today, the UMass Amherst Center for Agriculture, Food, and the Environment (CAFE), which was founded in 2001 as the "Center for Agriculture," is the University's central location for research and educational outreach on agriculture, natural resources, and food systems. CAFE is part of the College of Natural Sciences and works in cooperation with the National Institute for Food and Agriculture at the USDA. CAFE is home to the Massachusetts Agricultural Experiment Station, UMass Extension, the Water Resources Research Center, four off-campus farm-based research and education centers, as well as the UMass Cranberry Station. UMass Extension offers educational programs on agriculture, commercial horticulture, clean energy, environmental and water conservation, food science, and youth development and 4-H.[29] According to UMass Extension, approximately 50% of the Commonwealth's commercial farmers utilize its various programs. However, as noted by this Commission's recommendation drafting groups and in hearing testimony, the Census of Agriculture, conducted every 5 years by the USDA, and other supportive surveys do not provide enough data to provide accurate year to year statistics.

Agriculture is changing and requires a different type of understanding and educational experience to ensure its sustainability. UMass Extension utilizes the academic resources at UMass Amherst to offer valuable opportunities for conducting research to provide real-world solutions that address food production challenges, particularly in the context of climate change. UMass Extension provides services to farmers ranging from laboratory testing of soil and plant health to pesticide education, disaster preparedness, land conservation, and more. Its etymologists study the impacts of pests and nuisances and share mitigation and management strategies.[30]

UMass Extension is primarily funded through grant programs, federal capacity funds provided under the Smith-Lever Act, and mandatory state match provided within the University of Massachusetts budget process.[31] According to Clem Clay, director of the UMass Extension Agriculture Program, funding from the Smith-Lever Act was $2.9 million in 2023, only $400,000 more than Extension's funding of $2.5 million from Smith-Lever in 2009, a funding increase that has neither kept up with inflation nor growing demand on the program.[32] Unlike Extension services in other states, UMass Extension does not receive funding from state counties and its income from other local sources does not make up the difference. (Plymouth and Barnstable Counties do retain some county-funded Extension services, including programs offered by Cape Cod Cooperative Extension.)

Regional experts from the Association of Northeast Extension Directors (NEED) and Rutgers Cooperative Extension, along with an international spokesperson from the Irish extension service Teagasc, confirmed in their testimony to the Commission that Massachusetts is not alone in the challenges it faces. Some other states' land grant extension services are bound by the same federal formula that has not kept up with inflation over the last decade. All face limited funds and capacity, as well as increased need and expectations among farmers. These challenges have only been exacerbated by recent federal funding and staffing cuts—farmers have long relied on staff in the USDA and NRCS for technical assistance, and with reductions of staff taking place across the

agencies,[33] farmers may become increasingly reliant on the technical assistance provided by Extension.

Massachusetts farmers are also supported by a network of local, regional, and national programs. The NRCS offers a variety of services and programs to provide farmers with assistance in addressing natural resource concerns, funding innovative conservation practices and technologies, managing financial risks through diversification, marketing, and natural resource conservation practices, and preserving environmentally sensitive lands.[34] The Massachusetts chapter of the Northeast Organic Farming Association (NOFA Mass) also provides several programs targeted towards farmers of all knowledge and experience levels. NOFA Mass provides technical support to farmers on topics such as agroforestry, cultivating local pollinators, and soil carbon restoration, as well as financial and policy support through grants, marketing guidance, policy advocacy, and connecting producers with community members.[35]

The Commonwealth has a strong network of buy-local organizations that connect farmers with their surrounding communities to increase direct access to fresh, local food and support agricultural producers. The work of buy-local groups keeps money in the local economy, preserves local farms, reduces transportation costs and emissions, protects local landscapes, and ensures that fresh, healthy foods are accessible to communities throughout the Commonwealth.[36]

Increased integration of agricultural education programs in secondary and higher education is also paramount to creating a strong workforce that is adept at tackling the current and future challenges facing Massachusetts agriculture. Current Massachusetts schools providing hands-on, technical education on agriculture to students include: Bristol County Agricultural High School, Essex North Shore Agricultural & Technical School, Hawlemont Regional School, Smith Vocational & Agricultural High School, Norfolk County Agricultural High School, and The Farm School. The Commonwealth also has a variety of agricultural programs tailored toward youth development, such as 4-H clubs, animal science programs, urban 4-H programs, Future Farmers of America, and dairy production groups. Several Massachusetts community colleges offer Associate's degrees in food systems, farming, or related fields, and the Stockbridge School of Agriculture at UMass Amherst offers both Associate of Science and Bachelor's degrees in a variety of agricultural disciplines, as well as Master's and Doctoral programs.

SEMAP Buy Local Farmers Market Information

Technical Assistance and Education Problem Statements and Recommendations

Problem Statement: Extension's funding level has not kept pace with the increased demand on its services.

Recommendations:

1. Fully fund Extension's capacity to meet identified short- and long-term needs and attain a 3:1 ratio of non-federal match, on par with peer states.
2. Fund free annual soil tests (with the number of free tests per farm depending on the size of each farm) for Massachusetts farms at the UMass Soil and Plant Nutrient Testing Lab. Include heavy metal testing for urban and other at-risk farms and the option to have soil tested by other labs for the presence of PFAS.

Problem Statement: Incomplete and outdated data on the Commonwealth's agricultural industry reduces the accuracy and effectiveness of state programs and investments.

Recommendations:

1. Fund a biennial statewide agricultural census and data analysis to assess the state of

agriculture and the impact of state programs. As much as possible, limit the over-surveying of farmers by coordinating with other surveyors to include their questions in the census and by making all (anonymized) data public.

2. Appropriate adequate funds to allow MDAR to hire a full-time economist to maintain and analyze agricultural data.

Problem Statement: Educational opportunities for new and young farmers are inconsistent and do not align with regional demands and needs.

Recommendations:

1. Enact legislation to establish the Next Generation Farmer Fund, which would grant funds to institutions of higher education, vocational technical schools, and community-based organizations that have existing workforce training programs for first time farmers. (Legislation has been filed in the 194th General Court.)
2. Include associate degree programs at the Stockbridge School of Agriculture at UMass Amherst in MassEducate, the state's free community college program, to achieve tuition equity for all associate degree students in the Commonwealth. (Legislation has been filed in the 194th General Court.)
3. Fund the Climate Service Corps program to enhance educational capacity through community colleges and on-farm training.

Problem Statement: Farmers struggle to assess the quality and consistency of technical assistance from a variety of sources.

Recommendations:

1. Develop a coordinated network of navigators who use a case management approach to help farmers access resources and services. Fund a leadership role for UMass Extension and/or MDAR to conduct stakeholder-informed needs assessment and planning, coordinate the network, and ensure targeted support for beginning, BIPOC, and non-English-speaking farmers.
2. Expand technical assistance at MDAR and at the UMass Extension Service to help farmers with conservation planning.

Farm Energy

To combat climate change and reduce the state's greenhouse gas (GHG) emissions, Massachusetts has set ambitious goals to achieve Net Zero GHG emissions by 2050.[37]

Farmland preservation is another critical area of concern when it comes to siting renewable energy.

Farms, with their often flat and expansive fields, provide a unique opportunity for the installation of renewable energy sources.[38] Biomass, geothermal, hydroelectric, solar, and wind power can produce significant amounts of electricity for use on and off farms. Biomass, or matter from recently living plant and animal organisms, can be burned to produce heat or electricity. Solar panels allow farmers to convert the sun's energy into electricity. Agrivoltaics, or dual-use solar, allow farmers to utilize the land underneath raised solar panels for agricultural production while generating power.[39] Wind turbines capture natural wind patterns to generate power.[40] Through anaerobic digestion, bacteria break down organic matter to produce biogas that can be burned to create electricity, heat, and other energy.[41]

However, the extent to which farmland should be utilized for renewable energy leaves many farmers, community members, and policymakers divided. While renewable energy can decrease energy costs and even provide needed additional revenue for farmers (should they produce more energy than their property uses), it often poses high start-up costs and can be disruptive to growing practices. Generating renewable energy on farms can help the state meet its ambitious climate goals, but agricultural land already contributes to these goals by sequestering carbon in soil. Ongoing research also suggests there may be a trade-off between siting renewable energy on farms and promoting and maintaining healthy soils.[42]

Farmland preservation is another critical area of concern when it comes to siting renewable energy. In 2024, American Farmland Trust (AFT) reported in "Recommendations for State and Local Governments to Advance Smart Solar Policy" that "under current policies, 83 percent of new solar built by 2040 will be sited on agricultural lands, with almost half of this development on our most productive farmland for producing food and other crops."[43] The Commonwealth created the Solar Massachusetts Renewable Target (SMART) Program under the Department of Energy Resources to create a long-term sustainable solar incentive program, and the program includes regulations for Agricultural Solar Tariff Generation Units (ASTGUs), defined as a solar tariff generation unit located on land in agricultural use or important agricultural farmland that allows the continued use of the land for agriculture.[44] The SMART program contains specific requirements for any agricultural land enrolled in the program, such as setting shading and height requirements for farmland where solar is sited.[45] Processes are ongoing in the Administration and the Legislature to further smart solar policy that balances the needs of food production goals with energy production goals.

Solar Panels at Little Brook Farm, Sunderland

Regardless of differing attitudes toward farm energy, farmers have expressed that they require additional guidance and support to determine whether, where, and how to site renewable energy sources on their agricultural land. Massachusetts has instituted programs to provide financial assistance to farmers in installing renewable energy projects on farms, including the Massachusetts Farm Energy Program and the Climate Smart Agriculture Program. However, as renewable energy projects require substantial up-front funding, many farmers require additional financial assistance to jumpstart their projects. Additionally, renewable energy projects involve highly technical

expertise and equipment, requiring increased training and educational resources for producers.[46]

Farm Energy Problem Statements and Recommendations:

Problem Statement: A tension exists between the need to expand the state's capacity for renewable energy and the preservation of farmland soils and agricultural land for production. Farms are in a unique position to contribute to renewable energy deployment, the state's capacity to store surplus energy, carbon sequestration, and food security alike, yet there are no clear policies to express how to strike the balance between these frequently competing interests.

Recommendations:

1. Direct EEA, in consultation with the Massachusetts Department of Energy Resources (DOER), MDAR, and the University of Massachusetts Clean Energy Extension (CEE), to develop statewide policy that will guide programs and funding that prioritize siting renewable energy installations and energy storage arrays on non-productive soil, brownfields, and the built environment before doing so on active or potentially active farmland. All policies and criteria should be developed in consultation with farmers and other local stakeholders.
2. Direct DOER to require that any proposed solar development on unprotected farmland (land without a permanent deed restriction to retain the land for farming) or prime and state or locally important soils but enrolled in the SMART program and apply for the ASTGU Adder, unless land is otherwise found to be unsuitable for agriculture.
3. Direct DOER to review and amend the SMART ASTGU Adder guidelines to 1) further incentivize crop production (with added incentives for vegetable and fruit production) under agrivoltaic systems, 2) incentivize regenerative soil and water practices, and 3) consider if and when limited tree removal on farms should be allowed to rightsize on-farm solar developments without impacting production or prime agricultural land.
4. Direct the Department of Environmental Protection (DEP), in coordination with DOER and the Massachusetts Clean Energy Center, to create a comprehensive statewide plan for the management of end-of-life solar photovoltaic panels and energy storage system batteries to ensure safe and proper reuse, recycling, and disposal procedures, including funding mechanisms to support farmers with decommissioning agrivoltaic arrays. (Legislation has been filed in the 194th General Court.)

Problem statement: Building agrivoltaic arrays can be prohibitively expensive, even with the SMART ASTGU Adder, and the process from application to a completed, operational array takes an average of three years. State grant programs only fund projects that offset on-farm electricity use and exclude those that generate additional energy for revenue. Additional support is needed to offset these costs.

Recommendations:

1. Direct DOER, in consultation with the CEE and MDAR to identify and implement strategies to streamline the application and approval process for SMART ASTGU projects.
2. Direct MDAR to review and consider amending restrictions on the amount of renewable energy allowed to be generated on agricultural land and report their findings to the legislature. Amendments should be developed in coordination with farmers and prioritize crop production and the protection of prime soils. (Legislation has been filed in the 194th General Court.)

Problem statement: Despite ongoing research at UMass Amherst, UMass Extension, and other entities, there is incomplete available research on crop yields under solar installations. Shading, water capture and retention, and other factors can impact productive capacity, thereby reducing farm viability and food security. Without that data, it is difficult to shape a balanced policy on the impacts of co-locating solar systems. This presents challenges for farmers and developers when planning projects to meet the shading requirements of the SMART ASTGU program.

Recommendation:

1. Fund additional, targeted research at UMass Extension to analyze the impact of agrivoltaic installations, in a range of shading scenarios, on crop yields, farm income, land values, biodiversity, soil health, and other variables.

Problem Statement: Utility companies are slow to get new projects loaded onto the grid due to extensive backlog and the need to not overload an already strained grid. Uncertain timelines and frequent changes in state policy can disincentivize development in Massachusetts. The state needs to create faster and more efficient interconnection of energy projects owned and operated by farms and farmers. In November 2024, Governor Healey signed into law An Act promoting a clean energy grid, advancing equity, and protecting ratepayers (2024 Climate Act) which contains comprehensive reforms of the state's siting and permitting processes for clean energy infrastructure. These reforms are anticipated to alleviate current issues with grid capacity.

Recommendation:

1. Create a separate queue for connecting agricultural projects to the grid so that they are only competing with other agricultural projects for connections.

Problem Statement: Farmers have made significant investments in equipment that runs on petroleum-based fuel. At the same time, it is challenging for farmers to find affordable, comparable electric-based farm equipment.

Recommendation:

1. Increase funding to the Climate Smart Agriculture Program (CSAP) to help farmers switch to and access electrified farm equipment. Provide adequate funding to enable MDAR to review grant program restrictions and fund the gap between the cost of fossil-fuel based equipment and available, comparable electric equipment.

Problem statement: The cost of energy has increased dramatically for farms, particularly for those with controlled-climate growing facilities.

Recommendations:

1. Increase funding for MDAR's grant programs that target energy efficiencies and savings, such as CSAP. The Agricultural Energy Grant Program (ENER), one of five grant programs under CSAP, provides funding to agricultural energy projects in an effort to improve energy efficiency and the adoption of alternative energy by Massachusetts farms.
2. Direct the Department of Public Utilities (DPU) to promulgate favorable feed-in tariffs and net metering policies that allow farmers to sell excess energy back to the grid at competitive rates.

Problem statement: MassDEP's 2030 Solid Waste Master Plan has established aggressive waste reduction goals of reduced disposal statewide by 30% (from 5.7 million tons in 2018 to 4 million tons in 2030) over the next decade and a 90% reduction in disposal to 570,000 tons by 2050. The Solid Waste Master Plan will create demand for more food waste management systems.[47] Anaerobic digesters present both a valuable economic proposition for farmers and one solution to the problem of disposing of food waste.

Recommendations:

1. Direct MassDEP, in consultation with MDAR and DOER, to create a plan to further incentivize and support the development of small-scale anaerobic digesters on farms and a local distribution network that can provide digesters with feedstocks being diverted from the waste stream.
2. Direct the DPU to review and amend regulations, or if necessary, suggest legislation, to ensure that anaerobic digestion facilities are not in competition with solar for net metering.
3. Ensure that significant due diligence, legislative and regulatory review, and public input is taken before amending or eliminating any version of the Alternative Energy Portfolio Standard (APS).

Economic and Community Development

While agriculture remains an integral part of the Commonwealth's identity and economy, the future of agriculture in Massachusetts is under threat. High land and labor costs, combined with fierce competition for limited farmland, create significant upfront expenses that many farmers struggle to recoup.[48] Impacts from climate change and natural disasters, strong development pressures amid an ongoing housing crisis, and an underfunded university Extension program all exert additional financial and practical stressors on farmers. In a profession where long working hours are the norm and where one bad harvest or storm can threaten to topple a business, these stressors can be, and have been, enough to force Massachusetts farmers to permanently shutter their barn doors.[49]

Urban farming provides a unique opportunity to expand agricultural production throughout the Commonwealth, providing increased access to land ownership and management, greenspace, and fresh, locally produced food for underserved communities.

As Clem Clay, Commission member and Director of UMass Extension's Agriculture Program said in his testimony during the Commission's seventh hearing, "farming is hard and getting harder."

Once farmland is sold to a developer or overtaken by forest, it can be extremely challenging, if not impossible, to return that land to being farmland. Between 1997 and 2022 Massachusetts lost 113,000 acres of farmland.[50] During the last Census period, from 2017 to 2022, Massachusetts lost farmland at twice the national rate, losing approximately 5.5% of its available farmland, or 27,000 acres. Massachusetts' value per acre of land is significantly higher than the national average, at approximately $13,831 per acre compared to $3,846 per acre nationally, contributing to higher taxes, difficulty purchasing new land, and incentivization to sell land to the highest bidder.[51] Without additional investment and policy changes, Massachusetts is estimated to lose 50,000 to 89,000 acres of its remaining farmland by 2040.[52]

When farmland is lost to any type of development, the food production, economic activity, and ecosystem services that these farmlands provide are also lost—threatening agricultural viability, straining food security, and reducing rural vitality.

Urban farming provides a unique opportunity to expand agricultural production throughout the Commonwealth, providing increased access to land ownership and management, greenspace, and fresh, locally produced food for underserved communities.[53] However, barriers including housing development pressures, high land and environmental mitigation costs, and a lack of widespread education regarding the processes and funding sources for creating urban farms restricts the development of urban farms in many areas. Urban farmers face many of the same challenges as their rural and suburban counterparts such as climate change, natural disasters, pests, and high labor costs. However, urban farms must also often overcome large amounts of soil contamination, local pollution and higher temperatures in urban centers, limited water availability, and pests unique to urban areas, in addition to achieving the scale necessary to produce food efficiently and profitably.[54]

2024 Boston Local Food Festival

During the hearing, the Commission heard about the challenges facing community gardens and farms, especially in urban areas. Programs like those hosted by Eastie Farm in East Boston foster farm-to-community relationships and increase access to local produce. This is especially important as many urban areas

face high levels of food insecurity coupled with high land costs and lack of available land for farming and as the Commonwealth tackles the loss of farmland in rural areas.

PYO blueberries at Sobieski's River Valley Farm, Whately

Many farmers in Massachusetts have avoided and/or responded to challenging financial situations by engaging in direct-to-consumer sales and running agritourism ventures. Massachusetts ranks third nationally in direct-to-consumer sales;[55] many farmers across the state participate in wholesale distribution with consumers—propelling Massachusetts to the top of the ranks for farm income derived from direct-to-consumer sales.[56] However, resident buyers may not realize the challenges farms face when conducting and promoting their farm stands and markets. During the Commission's hearing on Economic and Community Development, Mackenzie May, then executive director of Central Mass Grown, testified about these challenges, including town-specific board of health certifications, the financial costs of marketing materials, and the financial and emotional cost of preparing for and conducting these markets.

Agritourism, a form of tourism where farms and ranches provide recreational, educational, or entertainment experiences to the public, offers another way for farmers to supplement or increase their income. However, Massachusetts lags nationally in agritourism[57] and faces challenges, such as educating farmers about how to promote agritourism without allowing it to significantly detract from food production goals, restrictive town-specific regulations and zoning on agritourism activities, and the high cost of land upon which to conduct these activities.

To sustain and grow agriculture in the state, Massachusetts offers farmers a large menu of resources to help them improve crop yields, lower and manage costs, diversify crops and offer higher-value options, incorporate efficiencies, and explore new and diverse markets.

MDAR supports the Massachusetts agricultural economy with a range of grants and financial assistance programs, aiming to support farmers in building climate change mitigation and resilience, food security infrastructure, clean energy production, and more. MDAR also offers webinars and informational sessions to increase farmers' understanding of and access to state grant opportunities.

The state also invests in land conservation and agricultural preservation efforts to protect farms from development. Programs such as the Agricultural Preservation Restriction (APR) Program help maintain farmland and support sustainable farming practices.

Economic and Community Development Problem Statements and Recommendations

Problem Statement: On average, the cost of food production on Massachusetts farms exceeds the value of the goods sold. Farmers must rely on income from other sources, in many cases relying on agritourism to generate additional revenue. In addition to the increased time and administrative burden of running what can amount to be, in-effect, a second business, inconsistent policies among municipalities regarding allowing non-agricultural activities on farms can make it challenging for farmers to maintain successful agritourism ventures.

Recommendations:

1. Enact legislation based on the report of the Legislature's Commission on Agritourism which defines agritourism and specifies that it may be conducted on land which is zoned for agriculture, as well as certain other lands in agricultural use. (Legislation has been filed in the 194th General Court.)

2. Fund MDAR and/or UMass Extension to expand their capacity for technical assistance, education, and marketing for agritourism operations, including enabling them to hire at least one additional permanent staff member. Increased funding should also be provided to the Massachusetts Grown and Fresher program to increase public awareness of local agritourism operations.

Problem Statement: Deer overpopulation is causing significant crop damage and threatens agricultural productivity.

Recommendation:

1. Establish a commission to provide recommendations on how to manage deer overpopulation. (Legislation has been filed in the 194th General Court.)

Problem Statement: High land prices and a declining base of available farmland are barriers for farmers—particularly historically marginalized and beginning farmers—which exacerbate food security risks and restricts agricultural growth.

Recommendations:

1. Increase funding to APR Program and accelerate the state's pace of APR purchases.
2. Provide zero-interest loans for farmland purchases by historically marginalized farmers, linked with protective covenants for sustainable farming.
3. Increase funding to MDAR's Urban Agriculture Program.
4. Consider whether suburban farmers are being adequately served by MDAR's existing programs or whether additional or alternative resources are needed to support and strengthen suburban farming.
5. Pass legislation to establish a grant program to support the conversion of vacant lots and underutilized land in environmental justice communities into urban farms, community gardens, and other agricultural enterprises. (Legislation has been filed in the 194th General Court.)
6. Establish a state-capitalized low-interest working capital loan program to provide short-term affordable loans to farmers with immediate needs that threaten the survival of their farms. Provide funding to couple the loans with business technical assistance.

Problem Statement: State grant programs provide essential support to farms, yet the standard state grant process poses challenges for farmers. Budget timelines often clash with farmers' busy growing season, leaving little time for completing applications. Lengthy reviews and contracts often leave farmers less than six months to complete projects before fiscal year deadlines. Grants are issued on a reimbursement-only basis, creating barriers for smaller farms lacking upfront capital, and funds can't be used for used equipment. Complex legal and financial paperwork is required, yet MDAR staff are prohibited from assisting farmers with applications.

Recommendations:

1. Allow farmers one year from the date of contract, rather than the end of the fiscal year, for project completion.
2. Allow for the purchase of used equipment from Massachusetts sellers through MDAR grant programs. (Legislation has been filed in the 194th General Court.)
3. Allow a portion of awarded funds to be paid on a disbursement basis, e.g.: 50% of funds upon contract execution, with remainder paid upon project completion.
4. Allow applicants' self-labor as an eligible expense or cost-share.
5. Place funds for farmer grants into a trust fund to eliminate the concern about unspent funds reverting at the end of the fiscal year and allow greater flexibility for grant terms.

Food Security

A strong agriculture industry provides a unique opportunity to connect people across the Commonwealth with fresh, local produce. Yet, food insecurity remains a persistent and urgent challenge in Massachusetts. In 2024, the Greater Boston Food Bank reported that more than 1 in 3 Massachusetts households—approximately 2 million adults—reported food insecurity, with the burden falling disproportionately on communities of color and households with LGBTQ+ members. Approximately 46% of Black households, 62% of Hispanic households, and 56% of LGBTQ+ households reported food insecurity.[58]

Food insecurity is further complicated by recent federal funding cuts to critical anti-hunger programs, including, but not limited to, reductions to Supplemental Nutrition Assistance Program (SNAP) benefit levels and increased required state contributions,[59] the elimination of SNAP-Ed, which provides vital nutrition education to low-income families,[60] cuts to the Emergency Food Assistance Program that provides emergency food and nutrition assistance to low-income Americans,[61] and cuts to the Local Food Purchase Assistance Program and the Local Food for Schools Program, both of which helped financially support local farms and delivered nutritious local food to those in need.[62] If and when such federal programs are reduced or eliminated, Massachusetts ahould be prepared with a comprehensive, state-level strategy to ensure that all residents have reliable access to healthy, affordable food.

Many individuals in Massachusetts depend on nutrition programs administered by the state. A substantial number of these individuals rely on SNAP for nutritious and accessible food, with more than $2.6 billion in FY24 distributed through SNAP to families and communities in Massachusetts. Approximately 31% of all Massachusetts households that receive SNAP benefits include children.[63] Massachusetts residents can also participate in the Healthy Incentives Program (HIP) to receive additional money on their SNAP card each month to purchase healthy, local fruits and vegetables from HIP farm vendors.[64]

HIP was piloted in April of 2017 as the nation's first program of its kind. It connects Massachusetts families with local farms to increase the accessibility of healthy, locally produced food, support Massachusetts farmers, and build an economically sustainable food system.

Participation in HIP has increased consistently each year, with over 263,000 individuals having joined the program since 2017.[65] Many farmers attest that HIP is one of the main programs helping their farms survive by bringing in needed revenue and driving demand for local produce.

Massachusetts has specifically targeted child hunger through the universal school meals program which provides free meals for all K-12 students in the Commonwealth.[66] Grants and food service programs, such as the FRESH (Farming Reinforces Education and Student Health) grant program administered through the Department of Elementary and Secondary Education, have simultaneously helped Massachusetts K-12 and early education and care centers expand their local food purchasing and education efforts.[67]

Indian Line Farm at The Great Barrington Farmers Market

Massachusetts is served by four regional food banks: the Greater Boston Food Bank, the Worcester County Food Bank, The Food Bank of Western Massachusetts, and the Merrimack Valley Food Bank.[68] Collectively, these food banks serve over 107 million meals a year to Massachusetts residents.[69-72] Food banks in the Commonwealth receive funding and support through federal and state programs, such as the Massachusetts Emergency Food Assistance Program, the Food Security Infrastructure Grant Program, and the MA SNAP Coalition.[73-75] Food banks have also suffered funding cuts in recent

months; in March 2025 the U.S. Department of Agriculture cancelled $3.3 million worth of food items for Massachusetts food banks.[76]

Opportunities abound to build off the Commonwealth's successful food security programs to increase access to local and nutritious food for all residents. A focus on equity in production, distribution, cost, and location, for both food producers and consumers, is paramount to ensure that financial, racial, and geographic factors do not continue to impact a person's access to both local and non-local produce. At the time of this report, Project Bread has convened the Make Hunger History Coalition with the stated goal of ending hunger in the Commonwealth. Commission members, additional legislators, and advocates sit on the Coalition's Steering Committee.[77] The Coalition's work follows the 2022 White House Conference on Hunger's goal of ending hunger nationally by 2030.[78]

Governor Healey has also an signed an Executive Order creating an Anti-Hunger Task Force that will advise the Governor and make recommendations for how Massachusetts can mitigate President Trump's cuts to food assistance programs and adopt long-term solutions to hunger.[79]

As this report details, a critical part of ensuring food security is the preservation of farmland. Increased agricultural production results in a larger local food supply, which can be distributed directly to community members experiencing food insecurity.[80] Prioritizing the preservation of workable agricultural land will improve the viability of the regional food system, increase access to local and healthy foods, and protect against global and national supply chain disruptions.

Additionally, improving access to local foods through schools, local institutions, and community centers will play a pivotal role in increasing food security throughout the Commonwealth.[81]

Food Security Problem Statements and Recommendations:

Problem statement: Global supply chain issues, global conflicts, and impacts from climate change threaten food security internationally and here in Massachusetts. Simultaneously, continued loss of productive farmland, a changing regional climate, and the siting of renewable energy systems on farmland have all contributed to decreased food production in Massachusetts. New England Feeding New England's (NEFNE) 2023 report "A Regional Approach to Food System Resilience" outlines how the six New England states could meet a goal of supplying 30% of their food from regional sources by 2030.[82] To meet this goal, NEFNE estimates that New England states would need to maximize the use of 401,000 existing underutilized acres of farmland, as well as 588,000 acres of cleared land.[83] New England states would also need to consider and change the types of crops and livestock they produce to increase regional food self-reliance (RSR), or how much food we produce compared to how much food we consume.[84]

Recommendations:

1. Fund implementation of the Farmland Action Plan.
2. Appropriate adequate funding to MDAR to set, track, and report on progress toward farmland protection and statewide food production goals (including quantity and type of produce or product) focused on increasing Massachusetts' acreage of productive farmland and the state's food self-reliance. Use goals to drive policy and investments. (Legislation has been filed in the 194th General Court.)
3. Provide a refundable tax credit of up to $5,000 to farmers based on their annual food production.
4. Amend Article 99 of the Massachusetts Constitution to allow farms smaller than five acres to receive the agricultural tax rate. (Legislation has been filed in the 194th General Court.)
5. Enact legislation to require municipalities to notify MDAR when a parcel of farmland goes up for sale. (Legislation has been filed in the 194th General Court.)
6. Direct the Department of Revenue (DOR) to create a central registry and publicly available map for all land enrolled in Chapter 61A. (Legislation has been filed in the 194th General Court.)

7. Create and fund a new line item in the MDAR operating budget dedicated to farmland acquisition, enabling the state to actively purchase, sell, and protect agricultural land—an authority newly granted to MDAR under Section 17 of Chapter 238 of the Acts of 2024. In addition, establish an accompanying earmark within the Environmental Bond Bill (EBB) to support larger-scale farmland acquisitions and permanent conservation efforts. Together, these funding mechanisms would provide MDAR with the operational and capital resources necessary to safeguard the Commonwealth's agricultural land base for future generations.

Problem Statement: Food insecurity levels across the Commonwealth are high, with more than one in three households reporting that they experience food insecurity.[85] At the same time, food waste accounts for more than one fifth of Massachusetts' trash, with a substantial percentage of waste taking place on farms.[86]

Recommendation:

1. Extend liability protections in existing law to allow for direct donations of food from individuals or organizations and provide a tax credit of up to $25,000 for farmers who donate their excess produce to non-profit organizations which provide food to those in need, helping to both facilitate the donation of food and helping farmers to respond to challenging economic pressures. (Legislation has been filed in the 194th General Court.)

Problem Statement: Federal and state food benefits can rely on inexpensive, non-nutritious, and non-local food products to help feed people who are experiencing food insecurity. At the same time, the Healthy Incentives Program (HIP), for example, has successfully increased access for SNAP participants to healthy, local, produce and products while providing necessary additional income to farmers, helping them to stay viable and even expand their businesses.

Recommendations:

1. Codify a year-round Healthy Incentives Program and fund HIP in the amount needed for the Department of Transitional Assistance (DTA) to maintain at least the incentive levels per household size which were in effect in fiscal year 2023. (Legislation has been filed in the 194th General Court.)
2. Direct MDAR, in collaboration with the four regional food banks, DTA, and the Department of Elementary and Secondary Education, to quantify (in both weight amounts and as a percentage of total food distributed) the amount of local food that is distributed through state feeding programs and offer recommendations on how to increase the amount of local food distributed each year while maintaining affordability for food banks and individuals and fairly valuing local produce and products. (Legislation has been filed in the 194th General Court.)
3. Increase funding to the Food Security Infrastructure Grant (FSIG) Program. FSIG provides grants to organizations that are part of the Massachusetts local food system to help increase the distribution of and equitable access to locally grown food and mitigate food supply and distribution disruptions.

Problem Statement: According to the Greater Boston Food Bank, 1 in 3 households with children in Massachusetts reported child-level food insecurity in 2024,[87] meaning a child went hungry, skipped a meal or didn't eat for an entire day because there wasn't enough money for food, and, according to the Department of Public Health, 1 in 4 children in Massachusetts are either overweight or obese.[88] Massachusetts made universal free school meals permanent in 2022, and almost seven out of ten Massachusetts students now eat school lunch.[89] The Terrific Tray Competition, run through a partnership between the Department of Elementary and Secondary Education and Massachusetts Farm to School, has helped schools source nutritious food from local and regional farms, dairies, and fisheries and has highlighted the opportunities for providing nutritious school meals to school children while supporting the local food system.

Recommendations:

1. Codify the Massachusetts Farm to School Program and increase funding to the program to help schools create infrastructure and programming to help educate students

about agriculture. (Legislation has been filed in the 194th General Court.)

2. Reimburse school food authorities for money spent to purchase food from local farms, fisheries, and producers to improve the quality of universal school meals through local foods. (Legislation has been filed in the 194th General Court.)

Pumpkin Harvest at Ferjulian's Farm, Hudson

PYO INFO:

STATUS:

OPEN

FIELD NOTES:

FAIR

MORE TO RIPEN SOON

Berries are small but sweet!

3 Fields open - Take your time and roam around the rows for best Results.

Section 4: Acknowledgements & Appendices

Acknowledgements

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Appendices

*Bill numbers used in this appendix reference bill numbers from the 193rd General Court (2023-2024).

Full Appendix of Drafting Group Recommendations

Farm Energy

Recommendations from Farm Energy Working Group

1) Problem Statement: A tension exists between the need to expand the state's capacity for renewable energy, and the preservation of farmland soils and agricultural land for production. Farms are in a unique position to contribute to renewable energy deployment, carbon sequestration, and food security, yet there are no clear policies to express how the state wishes to strike that balance.

   a) Recommendation: Develop statewide policy that will guide programs and funding that prioritize siting renewable energy installations on non-productive soil, brownfields, and the built environment before doing so on active or potentially active farmland.

      i) Explore the use of incentives and disincentives, such as mitigation fees when solar installations take agricultural land out of production.

   b) Recommendation: Continue to support farmers who wish to install agrivoltaic projects while minimizing net loss of production of the same types of crops grown on the property prior to installation, by providing the SMART ASTGU (Agricultural Solar Tariff Generating Unit) adder that makes up for loss in electrical generation due to array design and additional cost of materials due to height requirements.

      i) Only support projects that ensure no loss of productive capacity for the intended crops.

      ii) Link program incentive payments to crop production or the amount of shading created by the project, using a sliding scale. Make projects that allow more sunlight (or, in the future, photosynthetic active radiation (PAR)) eligible for higher incentives.

      iii) Prioritize SMART ASTGU projects that support vegetable and fruit production.

      iv) Create a dedicated support program within the SMART framework to assist farmers in transitioning to regenerative agriculture through education, technical assistance, and financial aid.

      v) Identify and implement opportunities for projects to stimulate and encourage regenerative soil and water practices.

      vi) Promote and provide additional incentives for agrivoltaic systems, where solar panels are installed on farmland incorporating regenerative agricultural practices.

   c) Recommendation: Identify and implement opportunities to streamline the application and approval process for SMART ASTGU projects.

      i) Consider appointing a regulatory body of farmers, UMass, and regulators to effectuate the policy and be a sounding board for review.

      ii) Identify and implement opportunities to streamline the application and approval process.

   d) Recommendation: Require that any proposed solar development on unprotected prime and state/local important soils be enrolled in the SMART program unless land is otherwise unsuitable for agriculture.

   e) Recommendation: When considering SMART ASTGU projects, allow the removal of trees in limited circumstances when doing so would permit rightsizing of on-farm solar developments without impacting productive land. Consider allowing tree removal if the landowner can provide evidence that the land was farmed within the past 15 years, trees to be removed are no older than 15 years, and if the soil is prime or locally important.

f) Recommendation: Explore legislation that would allow a farm to install an array on land not suitable for agriculture without having to take it out of Chapter 61A.

2) Problem statement: Building agrivoltaic arrays can be prohibitively expensive, even with the SMART ASTGU. The cost of additional steel required to build solar arrays at 10 feet high is extremely expensive. State grant programs only fund projects that offset on-farm electricity use, and exclude those that generate additional energy for revenue. Additional support is needed to offset these costs.

   a) Recommendation: Review restrictions on the amount of renewable energy generated on APR lands.

   b) Recommendation: Consider making state funding available to pay for Commercial general liability insurance for farmers.

3) Problem statement: There is inadequate research on crop yields under solar installations. Shading, water capture and retention, and other factors can impact productive capacity, thereby reducing farm viability and food security. Without that data, it is difficult to shape a balanced policy on the impacts of co-locating solar systems. This presents challenges for farmers and developers when planning projects to meet the shading requirements of the SMART ASTGU program.

   a) Recommendation: Support research that determines the impact on crops in a range of agrivoltaic shading scenarios.

      i) Allow existing projects to proceed, and evaluate their success.

      ii) Base SMART ASTGU guidelines on evidence-based modeling and science.

      iii) Require farmers who receive incentives to keep records, collect data and/or allow research to be conducted on their farms. Provide support for required record-keeping.

         (1) Allow access for a researcher from UMass or MDAR to take soil samples, weigh samples. Provide assistance for record keeping.

         (2) Analyze the production and economic impact of agrivoltaic installations on crop yields, farm income, land values, and other variables.

         (3) Use findings to prioritize future projects that use practices that will maximize crop production.

      iv) Ensure that the impacts of solar panel installation, operation, and decommissioning do not negatively impact soil health, water resources, or land values.

4) Problem Statement: Farmers have made significant investments in equipment that runs on petroleum-based fuel. Resources supporting on-farm renewable energy are limited and often confusing.

   a) Recommendation: Support more electrification of farm tools - i.e.: cranberry pumps, trucks and delivery vans, and other equipment.

   b) Recommendation: Incentivize switching to the use of renewable resource-generated electricity, where feasible.

      i) Cover the gap between the cost of fossil-fuel based equipment and available electric equipment.

      ii) Incentivize local equipment dealers to make electric-based tools available to Massachusetts farmers through opportunities such as tax credits, municipal policy measures such as rules on equipment use, or a tax on gas-powered equipment.

      iii) Develop clear, consumer-facing resources and technical assistance to support farmers in transitioning to renewable energy use.

      iv) Partner with MassCEC to foster companies that are developing these technologies.

5) Problem Statement: Utility companies are slow to get new projects loaded onto the grid due to extensive backlog and the need to not overload an already strained grid. Uncertain timelines and frequent changes in state policy disincentivize development in Massachusetts. The state needs to create faster and more efficient interconnection of energy projects owned and operated by farms and farmers.

a) Recommendation: Pass siting and permitting legislation being drafted based on the recommendations of the Infrastructure Siting and Permitting Commission that would clarify and set timelines for the permitting and siting process, to allow farmers to better prepare and plan construction projects on their land, conserving time and finances and reducing interruptions to agricultural operations.

   i) Increase grid capacity through construction of new transmission lines and substations to support the speedy construction of renewable energy infrastructure.

   ii) Provide state funds or other incentives to prompt utilities to commit to and fulfill faster interconnection times.

   iii) Create a separate queue for connecting agricultural projects, so they are only competing with other agricultural projects for connections.

   iv) Expedite the approval process through additional staff at state agencies and utilities, and through streamlined processes.

   v) Support legislation and regulation to improve and modernize the grid.

6) Problem statement: The cost of energy has increased dramatically for farms, particularly those with controlled-climate growing facilities.

   a) Recommendation: Incentivize electrification by increasing reimbursement rates for electricity through the Farm Energy Discount Program.

      i) Increase discount from from 10% to 25%.

      ii) Explore the feasibility of establishing other energy discounts for farms (i.e. propane).

   b) Recommendation: Connect more farmers with MassSave program to help make farms more energy efficient through energy audits and discounted improvements.

   c) Recommendation: Provide more funding for MDAR's Agricultural Energy Grant Program that offers funding for energy improvements.

7) Problem statement: Massachusetts' long-term goal of eliminating all organic waste from traditional waste streams will create demand for more food waste management systems.

   a) Recommendation: Support small-scale anaerobic digesters on farms and a distribution network to provide them with feedstocks being diverted from the waste stream.

      i) Ensure that infrastructure for ag energy projects are assessed for excise taxes at agriculture rates.

      ii) Consider authorizing establishment of a program to support non-solar distributed generation resources, such as anaerobic digestion. Consider Senate-approved language from 2018 (S.2608) that would incentivize small-scale non-solar renewable energy projects on farms.

      iii) Provide guidance and support for use of solid and liquid byproducts from anaerobic digestion, both on- and off-farm.

      iv) Prioritize farm-based digesters when diverting organic waste under the Commercial Food Material Disposal Ban.

8) Problem Statement: The transition to renewable energy sources is crucial for meeting the State's climate goals, but many farms lack the necessary infrastructure to store surplus energy effectively. Supporting the development and integration of on-farm battery arrays can ensurethat energy generated from these sources is stored and used efficiently, enhancing the resilience and sustainability of farm operations.

   a) Recommendation: Provide financial incentives such as subsidies or grants to farmers for installing battery storage systems.

   b) Recommendation: Offer tax credits or deductions for investments in on-farm battery storage and renewable energy projects.

   c) Recommendation: Ensure favorable feed-in tariffs and net metering policies that allow farmers to sell excess energy back to the grid at competitive rates.

9) Problem Statement: Forestry and wood products are a significant part of a farm management plans, but current farm energy initiatives do not include sustainable wood production and utilization.

   a) Recommendation: Incentivize wood residue utilization from pruned branches, deadwood, and non-commercial thinning for energy production by providing tax credits for wood residue processing.

   b) Recommendation: Incentivize biochar production through conversion of agricultural and forestry waste with funding for initial setup cost of equipment and infrastructure for biochar projects through the ACRE program.

   c) Recommendation: Include biochar production in the state's Renewable Portfolio Standard.

   d) Recommendation: Fund Extension services and technical assistance programs to help farmers and forest owners adopt sustainable wood product uses.

Climate Change and Natural Disasters

Recommendations from Climate Change and Natural Disasters Working Group

1) Problem Statement: Climate change results in inconsistent and often destructive weather patterns, disrupting food production. Such weather-related disasters are becoming more frequent and more damaging, and one-time, reactive solutions like the 2023 Natural Disaster Recovery Program are not designed to respond quickly or consistently enough. In addition, farms in Massachusetts normally do not qualify for insurance or grant funding through USDA or FEMA following disasters because the level of destruction is too "small." Farmers are usually left to independently address damage and other impacts on their operations following disasters.

   a) Recommendation: Establish a carve-out from the proposed disaster relief fund for farms to ensure equitable support for agriculture. Establish criteria and process for payments as needed.

   b) Recommendation: Support controlled-climate growing infrastructure such as greenhouses, abandoned industrial building reuse, and emerging technologies through MDAR grant programs.

   c) Recommendation: Fund protective equipment for farmers and farmworkers through MDAR grants, to reduce health risks brought about by weather extremes.

   d) Recommendation: Develop communication and coordinated response programs and policies to support farmers during disasters. Coordinate recovery efforts and resources through a case-management style network of providers that includes federal, state, and local assets.

   e) Recommendation: Support federal and private insurance options that would better serve the full range of Massachusetts farmers.

      i) Advocate to federal delegation for changes to policy.

      ii) Explore opportunities for state underwriting of policies.

      iii) Provide a tax incentive to farmers who obtain crop insurance.

      iv) Use state funding to pay a portion of crop insurance premiums.

2) Problem Statement: Farm expenses are increasing as farmers struggle to address the impacts of climate change on their operations. At the same time, farmers play an essential stewardship role in protecting and enhancing natural resources that provide public services and help the state increase climate resilience, but doing so is often more expensive than extractive management practices.

   a) Recommendation: Promote and incentivize healthy soils practices and other management techniques that protect and enhance natural resources.

      i) Provide state funding to cover the costs of UMass Soil and Plant Nutrient Testing Laboratory tests for farmers.

      ii) Fund cover crops and other no-till soil management practices as recommended by the Healthy Soils Action Plan through MDAR grants.

iii) Fund staff to connect increased organic feedstock as a result of the organics waste ban with on-farm composting and anaerobic digestion operations.

iv) Promote and fund municipal composting programs that divert organic waste from the waste stream and create soil amendments for use in Massachusetts.

b) Recommendation: Develop a state payment for ecosystem services (PES) program for farmers, to compensate them for public services such as carbon sequestration, water filtration and retention, soil health enhancement, viewshed improvements, forest management, and others, as called for in the Farmland Action Plan.

i) Evaluate existing PES models in other jurisdictions and design a model for Massachusetts that is scale and need appropriate.

ii) Link state model to Clean Energy and Climate Plan references to a regional carbon market.

iii) Develop formulas for value of calculated carbon capture of a range of management practices including, but not limited to, cover crops, no-till planting, use of equipment that uses renewable energy, etc. Build in monitoring and verification with explicit targets.

c) Recommendation: Provide resources to staff coordination of state and federal grant programs and other resources.

i) Formalize connections between all public agencies supporting farmers so that all are aware of each other's available resources and expertise.

ii) Identify gaps between need and availability of federal funds for conservation and other climate-smart programs and close those gaps with state resources.

d) Recommendation: Catalyze innovative economic development in the agricultural sector by establishing an Office of Agricultural Innovation as a joint venture between MDAR and UMass Extension, to focus on business and finance needs related to agriculture and supportive industries. (Model: https://scagribusiness.com/.)

3) Problem Statement: Climate change can lead to change in agricultural productivity. For example, warmer temperatures may lead to longer growing seasons allowing for longer-maturing crops but higher irrigation costs. Changing weather patterns also lead to additional pressures from invasive flora and fauna. To survive, Massachusetts farmers need education, technical assistance, and funding.

a) Recommendation: Provide resources to UMass Extension to increase staff capacity to conduct research, education, and technical assistance to help farmers employ resilient management practices.

i) Include on-farm engineering services to support growers in resilient practices, such as controlled-climate growing, irrigation, frost protection, etc.

ii) Include business management and planning training and technical assistance to build resilience.

b) Recommendation: Provide additional funding to MDAR grant programs that support resilient management practices such as irrigation, seed drills, deer fencing, invasives management, erosion control, and others.

c) Recommendation: Ensure that MDAR grants are supporting effective and current climate-smart management practices by funding increased MDAR staff capacity in agronomy, climate science, and other related fields.

d) Recommendation: Fund programs at agricultural and other vocational high schools that educate students about climate change and resilient management practices, and that prepares them for careers in agriculture as well as related research and practice fields that support climate smart agriculture.

e) Recommendation: Increase investment for climate resilience investments in agriculture through MDAR's Agricultural Climate Resiliency & Efficiencies (ACRE) and Agricultural Environmental Enhancement Program (AEEP) grants to meet demand.

f) Recommendation: Target other MDAR grant programs, such as the Food Security Infrastructure Grant (FSIG) program, toward applicants with demonstrated interest in sustainable, climate smart practices.

g) Recommendation: Track MDAR grants' contributions toward statewide emission and climate goals, and set benchmarks and goals to measure progress.

h) Recommendation: Build UMass Extension's capacity to function as a hub for the public and private sectors for services and education related to climate resiliency.

i) Recommendation: Incentivize farmers to utilize that knowledge and services by prioritizing MDAR grant funding to those who demonstrate application of best practices.

j) Recommendation: Fully fund and implement recommendations in the Massachusetts Healthy Soils Action Plan.

k) Recommendation: Ensure that grant programs are accessible to all.

i) Since most grant programs are on a reimbursement basis, develop bridge loan opportunities for farmers to use for upfront payments required before grant funds can be released.

ii) Expand resources to assist grant applicants with submitting applications.

iii) Engage municipalities in supporting farms' access to grants.

iv) Ensure that grant levels and purposes are targeted to best support the greatest needs and the most vulnerable farms in the Commonwealth.

4) Problem Statement: Farmland loss threatens the capacity of Massachusetts farms to produce enough food, particularly during crises that result in failures of non-local food systems. As a result of these loses, land prices in Massachusetts are among the highest in the nation, creating a barrier to entry for many farmers, particularly BIPOC and beginning farmers. Farmers who lease, rather than own, land are then further disadvantaged by services and programs that favor farmers who tend leased (rather than owned) parcels of land. They are also limited in their ability to build equity and are at greater risk of losing investments made in infrastructure and soil health due to insecure land tenure.

a) Recommendation: Enact recommendations in the Massachusetts Farmland Action Plan that accelerate the rate of farmland protection and grow the amount of land available for agriculture.

i) Set statewide and in-state regional goals for land protection and develop a statewide method for tracking progress toward those goals.

ii) Fund an economist position at MDAR to carry out this task.

iii) Increase funding to accelerate the progress made by existing tools such as the Agricultural Preservation Restriction program to meet those goals.

iv) Facilitate the use of publicly-held farmland for food production.

v) Require that any public purchase of active farmland keep that land in active agricultural use.

vi) Develop and fund an MDAR program that supports reclamation of marginal or overgrown farmland.

vii) Allow MDAR to purchase farmland to protect it from conversion, as proposed in pending Ag Omnibus bill.

viii) Support farm transfer and succession in ways that enhance access to farmland, particularly for underserved aspiring farmers who have been excluded from the industry due to discrimination and financial exclusion.

ix) Amend Article 99 of the Massachusetts Constitution to allow Chapter 61A and other farmland protection tools to benefit farmland parcels smaller than five acres.

x) Create a new, bond-funded, state Revolving Loan Fund Program to provide zero- or low-interest loans in exchange for permanent agricultural covenants. Prioritize funding for historically underserved farmers and aspiring farmers.

xi) Support covenants that reduce the cost of farmland in exchange for development capacity, and whole-farm approach to protection and programming that includes housing and other infrastructure.

xii) Enhance farmland access opportunities through the Land Licensing Program by working with DCAMM, other state agencies, and municipalities to identify publicly owned land suitable for farming and make it available to aspiring farmers.

b) Recommendation: Set and track progress toward statewide food production goals. Use goals to drive policy and investments.

i) Fund a biennial statewide agricultural census and data analysis, and use collected data to demonstrate impact of state programs, policies, and investments, and course-correct where needed. Include data on economics, land use, crop production, and other indicators.

ii) Fund and staff a full-time economist position at MDAR to maintain and analyze data.

c) Recommendation: Offer a tax credit to beginning farmers based on production, phasing out over five years.

d) Recommendation: Offer zero-interest loans backed by state bonds for farmland purchases by underserved and beginning farmers, and apply protective covenants to farmland purchased through this program.

e) Recommendation: Explore opportunities to partner with conservation groups to support agriculture in suitable land in their portfolios, prioritizing access for BIPOC and beginning farmers.

5) Problem Statement: Preparing and planning for climate-change related disasters is the responsibility of several actors such as state and local governments, however, planning efforts can come at great cost to communities with little additional resources.

a) Recommendation: Provide municipalities with guidance on how the Municipal Vulnerability Preparedness (MVP) program, which provides support to cities and towns to plan for climate change, on ways agriculture can be integrated into planning efforts.

b) Recommendation: Also strengthen the Municipal Vulnerability Preparedness (MVP) program in its responses to threats to agriculture as a result of sea level rise and saltwater intrusion.

6) Problem Statement: Massachusetts is a densely populated state with limited access to open space for farms.

a) Recommendation: Enact a no-net-loss policy for all privately and publicly held agricultural land, mirroring Executive Order 193. Include off-shore aquaculture.

b) Recommendation: Create a central registry and publicly available map for all properties enrolled in 61A, including metric tracking the percentage of all agricultural land enrolled.

c) Recommendation: Increased enrollment in Chapter 61 by allowing parcels smaller than 5 acres to enroll through a constitutional change.

d) Recommendation: Prioritize protection of the whole farm through revision of the APR Program's approach including but not limited to farm family and farm worker housing, infrastructure, and the full range of farm entities and operation, including woodland.

e) Recommendation: Expand MDAR's Urban Agriculture Program.

i) Support "Vacant Lots to Farms" program in Massachusetts cities as referenced in the Resilient Land Initiative. There are 34,000 acres of vacant land (vacant lots) across 45 cities. By turning these lots into farms or community gardens, EJ communities could increase access to local produce and green space. Balance between vacant lot "esque" urban ag and commercial urban ag, high cost of converting urban lots into ag, identify cheaper ways to achieve more acreage, big regs issues and climate change issues (street flooding, sewer overflow)

ii) Increase urban "Green Teams" across cities encouraging creating and maintaining urban gardens and other projects.

iii) Support community farms through an MDAR grant program that supports land acquisition and other needs of existing and beginning community farms and gardens. Prioritize funding in Environmental Justice communities.

iv) Support school garden programs that convert vacant urban lots to educational and food production facilities through gardening programs.

v) Fund soil testing, education about season-extension and indoor growing, and other resources needed to support urban growers.

7) Problem Statement: Climate change has contributed to deer overpopulation, causing hundreds of thousands of dollars of loss for Massachusetts farmers.

a) Recommendation: Establish deer overpopulation commission as proposed in H4387.

b) Recommendation: Better quantify the problem through a reporting process that engages both MDAR and DFW.

c) Recommendation: Develop and implement management practices that decrease pressure on farms.

i) Provide funding for deer fencing through grant programs such as FSIG.

ii) Expand who may hunt on farms with a nuisance permit.

iii) Provide waivers to allow hiring of professional hunters to resolve acute problems.

iv) Incentivize consumption of venison, through models such as the Martha's Vineyard program that provides venison as a protein source for veterans through a food pantry.

8) Problem Statement: Past proper use of soil amendments and other products may have contaminated some farmland soils with PFAS, risking future use for agricultural purposes. Pass S39, which would:

a) Recommendation: Indemnify farmers from legal action brought as a result of PFAS contamination (due to approved practices).

b) Recommendation: Do not assess rollback or conveyance taxes for Chapter 61A land or APR properties removed from production due to regulatory action related to PFAS.

c) Recommendation: Establish a relief fund to support farmers impacted by PFAS contamination.

9) Problem Statement: On average, the cost of food production on Massachusetts farms exceeds the value of the goods sold. Farmers must rely on income from other sources, in many cases relying on agritourism to generate additional revenue. This is challenging for many, since municipalities have inconsistent policies regarding allowing non-agricultural activities on farms.

a) Recommendation: Pass pending legislation (S2469) which offers a definition for agritourism, providing municipalities guidance on how to support these ventures.

b) Recommendation: Educate municipalities of the economic and cultural benefits of supporting agritourism, and about best practices for zoning, planning, regulations, and public services for these enterprises.

c) Recommendation: Establish an agritourism working group, including representatives of MDAR, MOTT, municipalities, and farming, to develop and facilitate implementation of a statewide strategy for supporting the industry.

d) Recommendation: Increase funding for MDAR's agritourism program to provide technical assistance, education, and marketing for farms.

e) Recommendation: Provide resources for programs such as Mass Grown and Fresher, culinary tourism, food export, and marketing for locally processed foods, to better connect producers with markets.

Continued Education and Technical Assistance

Recommendations from Continued Education and Technical Assistance Working Group

Build Understanding of Need and Impact of Interventions to Inform Programs and Investments

1) Problem Statement: Available data about the Commonwealth's agricultural industry is often incomplete, incorrect, or outdated. As a result, programs, policies, and investments may not be targeted correctly.

a) Recommendation: Fund a biennial statewide agricultural census and data analysis, and use collected data to demonstrate impact of state programs, policies, and investments, and course-correct where needed. Include data on economics, land use, crop production, and other indicators.

b) Recommendation: Fund and staff a full-time economist position at MDAR to maintain and analyze data.

Increase Appropriate Educational Resources for Existing and Aspiring Farmers

2) Problem Statement: Educational opportunities for young and beginning farmers are inconsistent and don't always reflect available farming opportunities and market demands.

   a) Recommendation: Fund a survey and analysis of all existing educational opportunities for aspiring farmers, to be conducted by MDAR. Develop and fund over the long-term a one-stop portal maintained by MDAR to amplify the availability of these educational resources through ongoing outreach to farmers and aspiring farmers. Encourage providers to use this resource to identify and fill gaps where additional services are needed. Include vocational high schools, incubator programs, programs that serve farmers of color, commodity organizations, and others.

   b) Recommendation: Support the Next Generation Farmer Fund as proposed in H.4387.

   c) Recommendation: Fund the Climate Service Corps program to build educational capacity through community colleges and skills development through on-farm experiences and educational opportunities.

   d) Recommendation: Fund membership fees for 4-H and FFA members to make these programs more accessible for youth.

3) Problem Statement: Agriculture is often overlooked as a viable career path, with individuals with higher degrees choosing to pursue employment in other fields.

   a) Recommendation: Develop and implement a program to reduce student debt for graduates of UMass and other public agriculture and related education programs who choose to work on or own a Massachusetts farm or agricultural nonprofit, or as a large animal veterinarian, for at least ten years after graduation.

   b) Recommendation: Pass H.4427, which would give 4-H students excused absences for project-based learning.

   c) Recommendation: Pass H558/S243, "An Act establishing farm to school grants to promote healthy eating and strengthen the agricultural economy," which would help schools create infrastructure and programming to help educate students about agriculture.

   d) Recommendation: Fund internship program for farms, commodity organizations, and other support organizations to offer students experiential learning opportunities. Prioritize opportunities for students in BIPOC and other underserved communities.

   e) Recommendation: Strengthen state MassHire Workforce Boards' understanding of agriculture and ability to link job seekers with farmers.

   f) Recommendation: Coordinate with the Executive Office of Economic Development, Rural Affairs and the Business Front Door to support, farmers and agricultural businesses.

Increase Appropriate Educational and Technical Assistance Resources for Existing Farmers

4) Problem Statement: As private organizations have obtained grants and other resources to provide services historically provided by public entities, producers are challenged to evaluate the quality and consistency of technical assistance available to them from different sources, and producers in different geographies have different options, leading to confusion.

   a) Recommendation: Support development of a coordinated network of 'navigators' who use a case management model to work with farmers over a long period of time, building an understanding of their needs in order to better be able to direct them to appropriate services and resources. Resource pool should include education and technical service providers such as government agencies, nonprofits, the UMass system and UMass Extension, the MACC, technical high schools, other private and public educational institutions, regulators, industry associations, and others. Use the network to provide referrals and simplify learning pathways for farmers, to reduce redundancies and improve communication across sectors, and to encourage the work of these groups to be responsive and relevant to the needs of the farming sector. Prioritize availability of services and materials to beginning and BIPOC farmers and non-English speakers. Ensure and fund a network leadership role for UMass Extension and/or MDAR.

b) Recommendation: Contract with NGOs, consultants, and others with the capacity to provide business technical assistance services, including succession planning, to farmer clients. Support restoration of business and risk management education capacity at UMass Extension, including identification of key economic trends affecting farm outcomes.

c) Recommendation: 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.

d) Recommendation: Identify areas of funding overlap and convene federal, state, and private stakeholders to improve coordination of incentive and grant programs and technical assistance capacity with the goal of decreasing paperwork burdens and increasing programmatic synergy and predictability. Include TA providers so that they understand the linkage between their assistance and the funding that producers seek. Consider opportunities for enhancing federal incentives with state add-on payments in cases where the incentive rate is a reason for low participation.

5) Problem Statement: As the rate of change in the farming industry has increased, capacity of UMass Extension has declined, limiting the availability of its essential objective, science-based research, education, and technical assistance, including diagnostic services. As a result, farmers are often unable to support the Commonwealth's economic development, food production, and climate goals as fully as they could.

a) Recommendation: Fund UMass Extension to conduct a needs assessment of agricultural stakeholders including rural, urban and historically underserved producers, commodity groups, and others representing farmer interests, and establish a process by which the assessment will be updated regularly. Assess areas including applied research, technical support and education, diagnostic services, risk and business management, preparedness for climate change, technology adoption, regulatory compliance, environmental protection, and 4-H youth development.

b) Recommendation: Develop a plan to fully staff a revitalized UMass Extension service based on identified needs and priorities, and to invest in relevant applied research and research facilities that maximize competitiveness for available federal resources. Address the challenge of developing reliable funding mechanisms that do not diminish existing UMass, MDAR, or Extension resources. Available mechanisms include "pass-through" appropriations provided to MDAR or other agencies, matching requirements within the UMass line item, a separate line item for UMass Extension, and bond-funded capital projects. Long-term stability should be a priority consideration for investments related to staffing.

c) Recommendation: Fully fund Extension's capacity to meet identified needs and attain a 3:1 ratio of non-federal match, on par with peer states.

d) Recommendation: Expedite hiring process for new staff.

e) Recommendation: Partially or fully subsidize an optimal number of soil tests per farm at the UMass Soil and Plant Nutrient Testing Lab for samples submitted outside of the lab's peak season. Include heavy metal testing for urban and other at-risk farms.

f) Recommendation: Ensure Extension's capacity to provide technical assistance to farmers considering on-farm renewable energy development, to ensure objective consideration of such projects that consider their impact on all resources, Commonwealth priorities, and farm viability.

g) Recommendation: Revise the statutory authority and composition of the UMass Extension Board of Public Overseers to ensure that it reflects the breadth and diversity of the communities served by UMass Extension and UMass Amherst Center for Agriculture, Food, and the Environment, including revisions to the nomination and appointment process for Board representatives. Consider including legislators on the Board, one appointed by the Senate President and one appointed by the Speaker of the House.

Ensure that Grant Programs Meet the Needs of Farmers

6) Problem Statement: The standard state grantmaking process does not work well for farmers in several crucial ways. The state budget cycle results in a mismatch between funding availability and farmers' available time for applying for and implementing projects. The capital and operating budgets are finalized at the height of the growing season, when farmers have limited time to complete applications. The time it takes for the application process, review process, and contracting then means that farmers often have just six months or less to complete funded projects, due to the requirement that funds be spent within the fiscal year. Grant awards are only issued on a reimbursement basis, raising equity concerns for smaller operations without the upfront resources needed to complete the funded project. Farmers are not allowed to purchase used equipment with grant funds. And the process for applying for state funding includes significant legal and fiscal paperwork, but MDAR staff are disallowed from helping farmers with applications.

a) Recommendation: Increase funding for grant programs to ensure sufficient and equitable support for farmers' capital and project needs.

b) Recommendation: Issue RFRs in winter with 'subject to appropriation' caveat, when farmers have more time to complete applications.

c) Recommendation: Allow farmers one year from date of contract, rather than end of fiscal year, for project completion.

d) Recommendation: Place funds for farmer grants into a trust fund to eliminate the concern about unspent funds reverting at the end of the fiscal year and allow greater flexibility for grant terms.

e) Recommendation: Allow for the purchase of used equipment from Massachusetts sellers through grant programs.

f) Recommendation: Allow applicants' self-labor as an eligible expense or cost-share.

g) Recommendation: Allow a portion of awarded funds to be paid on a disbursement basis, e.g.: 50% of funds upon contract execution, with remainder paid upon project completion.

h) Recommendation: Continue to simplify the process, through the development of a standardized online form that connects farmers to all grant programs.

i) Recommendation: Develop and make available a list of service providers that help farmers with grant applications.

j) Recommendation: Build the capacity of entities such as the Buy Local organizations to provide grant writing assistance.

k) Recommendation: Provide adequate resources for language translation for non-English speaking applicants for both RFRs and applications.

Summary of Hearings by Topic

Hearing 1: Commission Overview and Introductions: May 16, 2023

The first hearing of this Special Commission on Agriculture in the Commonwealth in the 21st Century provided an introduction into the current landscape of agriculture within Massachusetts, the commission members, and the commission's goals and charge. Massachusetts is home to over 7,000 individual farms and produces over 475 million dollars in market value produce annually. The Commonwealth has a strong history and culture of agriculture, dating back hundreds of years with colonial settlements and thousands of years of indigenous farming and animal husbandry. Co-chairs Representative Hogan and Senator Gobi introduced the objective of maintaining and strengthening our agricultural industry, and the need to provide farmers support in navigating and mitigating the novel challenges that they face in the 21st century.

During this hearing, commission members discussed one of the greatest challenges facing farmers today: climate change. Farms are the canary in the coal mine: farmers are on the frontline, experiencing the impacts of the climate crisis firsthand. The commission aims to meaningfully bring farmers to the forefront of the state's work to develop strategies to navigate these new challenges. The co-chairs highlighted one of the commission's top priorities, as charged in the authorizing statute, of encouraging the development of renewable energy on farms to mitigate the local impacts of global climate change.

Members of the commission will be involved in the development of policy legislation, analysis of data and current programs, and investigation through both public hearings and smaller, topic-focused subcommittees. Commission members include state senators and representatives, heads of state executive agencies, members of local mission-driven organizations, private farmers, and others. Each member brings a unique and invaluable passion, perspective, and knowledge base to tackl the issues farmers are faced with everyday.

Hearing 2: Commission Overview and Staffing Changes: July 25, 2023

During the second hearing of the Special Commission on Agriculture in the Commonwealth in the 21st Century, Co-chair Hogan introduced Senator Comerford as the commission's new co-chair after Senator Gobi's departure from the State Senate. Senator Comerford expressed her excitement to be part of this special commission and her dedication and gratitude towards each of the dedicated members. Senator Comerford also restated the goals and charge of the commission.

Many of these objectives will be addressed through the use of specialized subcommittees, hereafter known as recommendation drafting groups, or drafting groups. Drafting groups will be composed of commission members with the particular knowledge base or passion required to address their complex assigned topic. During this hearing, the three drafting groups were introduced to address continued education and technical assistance in Massachusetts, energy production and renewable energy on farms, and climate change mitigation and resilience in the face of increasing natural disasters.

The commission will also host public hearings on topics including legislation, economic and community development, food security, agrotourism, natural disasters and climate change, and other essential topics. These hearings and drafting groups will be instrumental in compiling and publishing the commission's final report on the current state of agriculture in the Commonwealth, and policy recommendations to strengthen it.

Hearing 3: Proposed Legislation: September 20, 2023

During the third hearing of the Special Commission on Agriculture in the Commonwealth in the 21st Century, members heard testimony in support of legislation filed in the 193rd General Court Session that would have a significant impact on agriculture. Testimony was provided by commission members, members of the General Court, local farmers, members of non-profit advocacy organizations, and local community members. Testifiers included commission member Representative Paul Schmid, Co-Chair Jo Comerford, Comission Member Executive

Director of the Massachusetts Farm Bureau Federation Karen Schwalbe, Representative Natalie Blais, Equity Policy Network Manager of the Massachusetts Food System Collaborative Norris Guscott, Representative Mindy Domb, Representative Vannah Howard, Representative Hannah Kane, and Representative Smitty Pignatelli.

Representative Paul Schmid testified in support of his bill, H.41/S.13, A Proposal for a legislative amendment to the constitution relative to agricultural and horticultural lands.

Farming provides stable income and nutrition to thousands of families across the commonwealth. Agriculture in Massachusetts is an invaluable industry employing over 25,000 individuals and producing over $475 million annually. This legislation instructs the taxing of farms to further develop and conserve agricultural lands by adjusting the fair market value of land devoted to agriculture or horticulture proportionately to the municipality size.

Co-Chair Senator Jo Comerford testified in support of H.101/S.39, An Act protecting our soil and farms from PFAS contamination, filed by Representative Schmid and Senator Comerford, respectively. Per- and polyfluoroalkyl substances (PFAS) are commonly used in a variety of everyday products from non-stick cookware to cleaning and personal care products, as well as the food we eat.

These “forever chemicals” break down very slowly and persist in the human body and the environment for years, leading to adverse health effects like increased risk of cancer, lower immune system function, and reproductive effects. This legislation requires the testing of products that may be produced with PFAS, labeling of products that contain PFAS, and creates a fund to assist farmers replace their use of products containing PFAS with available alternatives. This legislation will help create progress towards the reduction of PFAS on many of our everyday products and foods. Secretary Stephanie Cooper, Undersecretary for Environment at the Massachusetts Executive Office of Energy & Environmental Affairs, noted that the Massachusetts Department of Environmental Protection (DEP) regulates and issues approvals for entities using biosolids as fertilizer; therefore, a DEP and MDAR partnership would be beneficial in the application of this legislation.

Executive Director of the Massachusetts Farm Bureau Federation Karen Schwalbe discussed the Farm Bureau’s legislative priorities. Executive Director Schwalbe also vocalized her support of the University of Massachusetts Extension and the importance of supporting farmers with funding opportunities and practical aid for agricultural and technical high schools. Commission member Mike Smolak posed the question of how the Commonwealth could better support its farmers. Executive Director Schwalbe responded that increasing the threshold for estate tax exemptions would have a substantial impact on generational farmers, which make up a large percentage of Massachusetts farms.

Representative Natalie Blais testified in support of her bill, H.88, An Act strengthening local food systems. The impacts of the COVID-19 pandemic were compounded by the resulting disruption to the food supply chain, leaving many people vulnerable to both disease and food insecurity. Even now many farmers struggle to reach pre-pandemic production levels. This legislation calls for the development of plans to maintain food production in Massachusetts amidst food chain supply disruptions, increases opportunities for leasing designated agricultural lands, and provides funding workforce development training to increase and strengthen the agricultural industry and local food production in the future.

Equity Policy Network Manager of the Massachusetts Food System Collaborative Norris Guscott testified in support of Representative Blais’ bill, H.87, An Act promoting equity in agriculture. Although farming is prevalent in Massachusetts, various communities have little access to, or have been historically excluded from, the agricultural industry. Although progress has been made, underrepresented groups still struggle for access and resources as those traditionally represented. This legislation establishes a commission to examine data and develop recommendations for investments, policies, and practices to promote equity in Massachusetts agriculture.

Representative Mindy Domb testified in support of her bill, H.91, An Act addressing the impact of climate change on farms and fisheries. The direct impacts of climate change have become clear and immediate through increased storms, raging wildfires, rising sea levels. One of the largest impacts climate change will have is on our agriculture and food production. The changing climate leads to unpredictable rain and droughts, which in turn lead to fewer crops and more pollution in waterways, impacting farms and fisheries. This legislation establishes a fund to help farms and fisheries plan for and mitigate the impacts of climate change to maintain our food system.

Representative Vanna Howard testified in support of H.2852, An Act to promote urban agriculture and horticulture, co-filed by Representative Howard and Representative Hannah Kane. While Massachusetts

has more than 7,000 farms on over 490,000 acres, a majority of these farms are in rural, sparsely populated areas. The imbalance of agricultural production has led to food deserts, communities with little to no direct access to healthy foods, in many of the urban areas throughout the Commonwealth. This legislation provides tax exemptions to agricultural lands in densely populated communities, providing urban farmers the resources necessary to ensure access to fresh, healthy food in more communities.

Representative Kane testified in support of her bill, H.1594, An Act encouraging donation of food to persons in need. Approximately 21% of the total waste generated annually in Massachusetts is food waste (Massachusetts Food System Collaborative).

Additionally, approximately 20% of households in Massachusetts reported food insecurity in July of 2023, increasing drastically from pre-pandemic state levels. This legislation promotes the donation of food by expanding liability protection for individuals and organizations donating food directly to non-profits distributing food to those who need it. This legislation also provides a tax deduction to businesses and farmers who donate food directly to non-profit organizations to simultaneously reduce food waste and food insecurity throughout the commonwealth.

Representative Smitty Pignatelli testified in support of H.93, An Act promoting the growing of hemp and the use of hemp products, co-filed by Representative Pignatelli and Representative Blais. Hemp can be grown and cultivated to produce rope, clothing, food, paper, fuel, and animal feed. With such numerous and diverse uses, hemp provides invaluable opportunities for income and manufacturing. However, the production of hemp is still strictly regulated in Massachusetts, despite it not having the same psychoactive properties as marijuana. While H.93 and its sister bill S.40 both allow farmers to gain licenses from the commonwealth and take advantage of these opportunities by growing hemp and hemp products, H.93 additionally allows the production of Cannabidiol (CBD) products on agricultural lands.

Hearing 4: Economic and Community Development: October 19, 2023

During the fourth hearing of the Special Commission on Agriculture in the Commonwealth in the 21st Century, members and community members provided testimony on the topic of economic and community development in agriculture. Testifiers spoke on the Department of Agricultural Resources (MDAR) grant program, farm stands and farmers markets, urban agriculture, agritourism, the agricultural contribution to the local economy, and equity in economic and community development within agriculture. Testifiers included MDAR Deputy Commissioner Winton Pitcoff, Mackenzie May of Central Mass Grown, Ken Nicewicz of Nicewicz Family Farm in Bolton, House Chair Schmid of the Joint Committee on Agriculture, House Chair Cahill of the Joint Committee on Environment and Natural Resources, Joel Schneider of Eastie Farm in East Boston, Massachusetts Farm Bureau Federation Executive Director Karen Schwalbe, Executive Office of Economic Development Rural Affairs Director Anne Gobi, Chelci Martin of Honey Pot Orchards in Stow, Carmen Mouzon of the Farm School in Athol, and Angie Facey of Breezy Knoll Farm in Pepperell.

Deputy Commissioner Winton Pitcoff testified regarding MDAR's work in supporting the Massachusetts agricultural economy, particularly through grant programs. MDAR offers a range of grants and financial assistance programs, aiming to support farmers in building climate change mitigation and resiliency, food security infrastructure, and clean energy production. MDAR also offers webinars and informational sessions to increase farmers' understanding of and access to state grant opportunities. These sessions are provided to accommodate the seasonal schedule of farmers. Representative Paul Schmid additionally promoted MDAR's booklet on agriculture throughout the Commonwealth as a resource for people to engage with local farmers.

Mackenzie May of Central Mass Grown and Ken Nicewicz of Nicewicz Family Farm in Bolton testified regarding farm stands and farmers markets. According to May, providing opportunities for relationship building with local community members, farm stands, and farmers markets "most impactfully support the profitability of our farms." Farm stands and farmers markets are the most reliable points of contact for consumers and provide an avenue for HIP recipients to access fresh, local produce. However, farms face a variety of challenges in conducting and promoting their farm stands and markets, including town-specific board of health certifications, the financial costs of marketing materials, and the financial and emotional cost of labor to prepare for and conduct these markets. However, testifiers stated that as weather conditions have detrimental impacts on crop yields, state funding programs for disaster relief have supported farms in remaining profitable.

Representative Paul Schmid and Representative Daniel Cahill, and Joel Schneider of Eastie Farm in East Boston testified regarding urban agriculture. Urban farms play an important role in alleviating food insecurity, particularly during the COVID-19 pandemic. However, urban farms face many challenges, including safe rodent control, environmental contamination from pesticide use, effective water collection, the high cost of resources within an urban setting, a lack of space in densely populated communities, and the increased cost of living in cities.

Additionally, all farmers currently face challenges of knowing how to effectively use their land in light of changing climate and weather conditions, as well as limited access to clean and renewable energy technology.

Farm Bureau Executive Director Karen Schwalbe testified regarding agritourism.

Agritourism encompasses activities conducted on agricultural land to promote community engagement with farms, including farm tours, pick-your-own operations, mazes, workshops, hiking, hunting, and more. Massachusetts lags nationally in agritourism, and faces challenges in educating farmers about how to promote agritourism without allowing it to become the farm's primary use, restrictive town-specific regulations on what qualifies as agritourism, and the high cost of land upon which to conduct these activities. To address varying municipal regulations impeding agritourism development, commission member Brian Wick offered consideration of strengthening local "Right to Farm" laws to minimize interference. Deputy Commission Winton Pitcoff also offered support for adopting legislation proposing a universal definition for agritourism throughout the Commonwealth.

Anne Gobi, Director of Rural Affairs in the Executive Office of Economic Development, testified regarding economic development in rural areas. One area in which Massachusetts can improve agricultural and economic development is food tourism, such as offering locally grown products in public areas including highway rest stops and food stands in Logan International Airport. Other states that have implemented these changes, such as New York, have felt substantial economic impacts.

Farmers Chelcie Martin of Honey Pot Orchards in Stow and Angie Facey of Breezy Knoll Farm in Pepperell testified regarding challenges farmers face in promoting economic development on their farms. In addition to the impacts of climate change, farmers also face challenges in the administrative procedures necessary to effectively run farms, such as applying for grant programs, complying with local regulations, and meeting inspection standards. In addition to working 80-plus hours a week on their farms, farmers must also take on the roles of businesspeople, accountants, and more, ultimately detracting from their ability to run the farm. Although state funding programs provide some support, the reimbursement nature of these programs pose a large hurdle for farmers who cannot afford to pay these costs upfront. And while certain additional economic ventures, such as conducting microbusinesses on farms, have provided needed additional revenue, they also require substantial additional work.

Farmer and Strategic Planning Director at the Farm School in Athol, Carmen Mouzon, testified regarding equity in agricultural development and challenges that the Farm School faces in training the next generation of farmers. When promoting agricultural and economic development, it is crucial to recognize the different histories that different communities have with the land, and the historic exclusion of Black, Indigenous, People of Color ("BIPOC") communities from the agricultural industry. Much of the exclusion from land ownership that exists today is rooted in historic regulations, but these regulations can, and should, be changed. The lack of diversity in Massachusetts agriculture, with approximately 97% of Massachusetts farm operators identifying as white, provides an important call to action to work for and serve all people throughout the commonwealth.

Hearing 5: Food Security: November 16, 2023

During the fifth hearing of the Special Commission on Agriculture in the Commonwealth in the 21st Century, commission members and community members provided testimony on the topic of food security in Massachusetts. Testifiers spoke on current federal legislation to curb hunger, efforts of food banks throughout the Commonwealth, and the New England Feeding New England: A Regional Approach to Self-Reliance report. Testifiers included United States Congressman Jim McGovern, Public Policy Manager for the Greater Boston Food Bank (GBFB) Kate Adams, Foodbank of Western Massachusetts (FBWM) Executive Director Andrew Morehouse, and Massachusetts Food System Collaborative (MFSC) Policy Director Rebecca Miller and Interim Executive Director J. Harrison.

Congressman McGovern delivered keynote remarks, speaking about current legislation before the United States Congress, federal programs targeting hunger and nutrition, and the 2022 White House Conference on

Hunger. The Conference on Hunger provides a roadmap for decreasing processing times for SNAP benefits, implementing food and nutrition curriculums in schools, and improving food security on college campuses. Current legislative efforts targeting hunger include the Farm Bill, an omnibus, multiyear law that governs an array of agricultural and food programs, including statewide hunger and nutrition policy and programs. Though the current Farm Bill before Congress expired in September of 2023, Congress passed a one-year extension to cover and promote health and nutrition programs. Additional efforts to target hunger and nutrition include the Gus Schumacher Nutrition Incentive Program from the National Institute of Food and Agriculture, expansion programs to promote cooking healthy meals at home, increasing federal funding and critical assistance for farmers on the frontlines of climate change, and fully funding the Women, Infants, and Children Nutritional Program. Even the current benefits are not sufficient. We need to elevate these issues and not lose focus.

Public Policy Manager for the Greater Boston Food Bank (GBFB) Kate Adams spoke about the issue of food security throughout the Commonwealth and GBFB's work to reduce it. GBFB acquires and distributes over 100 million pounds of food annually with their partners across Massachusetts, serving approximately 600,000 people each month and operating the largest SNAP outreach program in the Commonwealth. Currently 1 in 3 people in Massachusetts struggle with food security. GBFB administers a food rescue program, and they are looking to create more partnerships with local farms and food pantries to increase access to fresh produce. The Massachusetts Emergency Food Assistance Program (MEFAP) is administered by MDAR and assists the 4 food banks in the Commonwealth in purchasing basic resources. Last year MEFAP supported 27 local farms by purchasing locally grown produce directly from farmers.

However, GBFB faces several challenges in providing for communities, such as limitations on the volume, produce, and price points at which local farms are able to produce. Steps that can be taken to address these challenges include expanding foodbank local procurement, coordinating between state agencies to strengthen partnerships and funding opportunities, and supporting legislation to establish the Executive Office of Food Resources and Security.

Foodbank of Western Massachusetts (FBWM) Executive Director Andrew Morehouse spoke on the FBWM's efforts to increase food security. Issues like food security and poverty are influenced by the macro-economy and the global economy. The COVID-19 pandemic and growing post-pandemic inflation have a substantial impact on our ability to reduce hunger throughout Massachusetts and nation-wide. The underlying cause of hunger is poverty. The Federal Inflation Reduction Act supplies federal funding to states which, with the help of MDAR, will be available to preserve farmland for the next generation of farmers, specifically BIPOC farmers. Steps that can be taken right now include providing universal school meals, promoting hunger-free campuses, strengthening the Healthy Incentives Program, improving regional public transportation, and strengthening local farms.

Massachusetts Food System Collaborative (MFSC) Policy Director Rebecca Miller and Interim Executive Director J. Harrison spoke on the New England Food System Planners Partnership's new report, New England Feeding New England: A Regional Approach to Food Self-Reliance. The report outlines our current regional food system and what it will take to reach the goal of 30% regional consumption of regionally produced foods by 2030. Phase 1 of the plan, exploring what it would take to achieve 30% by 2030, has already been completed. Phase 2, convening and collaborating, will be achieved by partnering with MDAR on how to most effectively engage partners. The report is comprised of 4 volumes: 1) If we ate in a more healthy and sustainable way, could regional production yield more resilient eating? 2) Do we have the land base to meet 30% by 2030? 3) Do we have the right mix of industries to ramp up food production? 4) What market channels offer the best sourcing of local foods? The major weaknesses in the Commonwealth toward achieving the goal of 30% by 2030 include low pay for food system workers, substantial inequity and inadequate opportunities for low-income residents to access local and healthy food, the current impacts of climate change, and larger demand than production. However, there are significant opportunities available to the Commonwealth, including the proposed Massachusetts Farmland Action Plan, improved connectivity of farmers to markets to increase direct sale, and increasing food literacy regarding nutrition, food justice, and career opportunities to promote education and greater participation in the food system.

Hearing 6: Climate Change and Natural Disasters: January 23, 2024

During the sixth hearing of the Special Commission on Agriculture in the Commonwealth in the 21st Century, members and subject-matter experts provided testimony on the topic of climate change and natural disasters related to agriculture. Testifiers spoke on the intersections of federal and state programs, state emergency assistance, challenges and opportunities facing farmers, financial resilience, and using farms as a tool to fight climate change. Testifiers included Assistant State Conservationist for the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Rita Thibodeau, Community Involved in Sustaining Agriculture (CISA) Executive Director Phil Korman, Policy Analyst for the National Conference of State Legislatures (NCSL) Emily Sampson, External Affairs Director Rachel Jones and Assistant Secretary of Resource Conservation Hans Schmidt at the Maryland Department of Agriculture, and Managing Director and Head of Planning for the Regenerative Design Group Cooperative Keith Zaltzberg-Drezdahl.

Assistant State Conservationist Rita Thibodeau testified regarding the USDA's work on climate change and how it interfaces with state programs. The NRCS offers technical and financial assistance to farmers through the Environmental Quality Incentives Program, the Conservation Stewardship Program, the Agriculture Management Assistance Program, and the Agricultural Conservation Easement Program. The USDA's programs focus on integrating conservation practices on private lands, incentivizing farmers to expand already existing conservation practices, managing financial risk through diversification, marketing, or natural resource conservation, and partnering with farmers to restore wetlands. USDA/NRCS collaborate with the MDAR in a number of different capacities, including by funding a significant proportion of the Agricultural Preservation Restriction Program, and Thibodeau noted opportunity for more collaboration and better communication to farmers regarding federal and state grant programs.

Community Involved in Sustaining Agriculture (CISA) Executive Director Phil Korman spoke on the impacts of this past summer's floods on local farms and the emergency assistance programs available to farmers. Through partnership with MDAR, the United Way's Farm Resiliency Fund, and the Community Foundation of Western Massachusetts, CISA raised over $2,000,000 for distribution to approximately 220 farms in increments of $1,000. These funds were helpful and critical, but/and farms will need continued support through permanent disaster funds, loan forgiveness programs, marketing to sell remaining harvests, community connection, and changes in practices to increase future resiliency. Changing weather and crop conditions leave experienced farmers unsure of how to effectively plan for future growing seasons. For agriculture to remain viable, businesses need to provide support in conducting financial analysis for farm programs and production. Although most farms need support, smaller and newer farms need increased support because they represent the next generation of growers and producers in Massachusetts.

Policy Analyst for the National Conference of State Legislatures (NCSL) Emily Sampson testified on policy options other states are using to support agricultural disaster resilience. Current policies and policy proposals for agricultural disaster resilience fall into one of three categories: response & recovery, administration & taxes, or mitigation. Response & recovery legislation creates and/or supports permanent resources on which farmers can rely.

Administrative & tax legislation creates offices and positions dedicated to supporting resilience among farmers. Mitigation legislation is enacted to support producers before natural disasters occur through establishing new offices, administration, and funding. Additionally, several states have enacted programs to promote soil health in order to improve yields, increase resiliency to changing conditions, improve drainage, mitigate the impacts of flooding, and reduce farm runoff.

Hans Schmidt, Assistant Secretary of Resource Conservation, and Rachel Jones, External Affairs Director, spoke on Maryland's state programs which promote financial resilience within agriculture. The Maryland Department of Agriculture partners with the NRCS, the Farm Service Agency, and the University of Maryland extension to establish service centers for free technical, conservation, and cost sharing assistance for farmers. Maryland apportions funding into building relationships with farmers through farm advisory committees to receive and implement feedback on program implementation. In addition to these partnerships, the Department of Agriculture started an urban farming program, broadened services to urban areas, and established relationships with community members and organizations in food deserts. The Department offers tax incentive programs for farmers to purchase conservation equipment and promotes financial assistance programs that require farms to comply with nutrient management standards. Training for nutrient management standards is offered free of charge by the University of Maryland. In 2022, Maryland passed the Maryland Climate Change Solutions Now Act, creating the statewide goal to reduce greenhouse

gas emissions by 60% by 2031, and achieve zero greenhouse gas emissions by 2045. Last year, the governor of Maryland raised the goal to 100% clean energy by 2030. The act established the Maryland Climate Change Commission to develop a comprehensive plan for emissions reduction. That act will necessitate reductions in the agricultural sector, and Jones added that siting solar and other renewable energies on active farmland has been a contentious issue.

Keith Zaltzberg-Drezdahl testified regarding the Healthy Soils Action Plan and associated recommendations. The Healthy Soils Action Plan aims to protect and enhance the living soil systems across all land types to support thriving ecosystems and communities in the Commonwealth. The Plan looks at 5 major land covers and provides recommendations in policy and practice for each: wetlands, forest, agriculture, recreational and ornamental landscapes, and impervious areas. The report contains 26 specific agricultural recommendations to increase soil health on farms, increase the ecosystems they provide, and help farmers serve as solutions to climate change. Agriculture represents a relatively small landscape cover in Massachusetts but provides a large benefit to the carbon budget of the Commonwealth. The plan prioritizes healthy soils program management and administration, increased education and technical training, stakeholder engagement, implementing best management practices and climate adaptation, and a healthy soils challenge grant initiative.

Hearing 7: Technical Assistance and Education: March 29, 2024

During the seventh hearing of the Special Commission on Agriculture in the Commonwealth in the 21st Century, commission members and community members provided testimony on the topic of agricultural education and technical assistance in Massachusetts. The University of Massachusetts Amherst graciously hosted this commission hearing on its campus.

Testifiers spoke on the programs that extensions, including the University of Massachusetts at Amherst Extension (UMass Extension), provide to farmers, as well as challenges and opportunities for agriculture, national programs geared towards farmer participation, and how agricultural high schools engage the next generation of agricultural producers. Testifiers included UMass Extension Director Clem Clay, Teagasc Director of Knowledge Transfer Stan Lalor, Rutgers University Cooperative Extension Director Dr. Brian Schilling, United States Department of Agriculture (USDA) State Conservationist for Massachusetts Dan Wright, Executive Director of the Association of Northeast Extension Directors (NEED) Ali Mitchell, Superintendent of Bristol County Agricultural High School Derek Costa, and Chancellor of the University of Massachusetts at Amherst (UMass Amherst) Javier Reyes.

UMass Extension Director Clem Clay testified regarding UMass Extension's work supporting agricultural producers across Massachusetts, and the ways that the Commonwealth can better support farmers and the Massachusetts Extension services. UMass Extension staffs 4 primary programs: 4H Youth Development, Nutritional Education, Clean Energy, and the Agricultural Extension. The Extension is primarily funded through grant programs and the federal Smith-Lever Act, which is allocated for staffing. However, funding remains a challenge for the efficacy of the program. Federal funding has remained steady over time and does not match the growing costs of maintenance and evolving needs. Additionally, the Extension faces a lack of county funding and a difficulty in matching similar rates of local funding as neighboring states. The Extension faces an expanding mandate and desire to meet the changing needs of the farmers; however, limited capacity coupled with an aging infrastructure at UMass research farms has resulted in difficulty sustaining programming. Farming is hard and getting harder due to the destabilizing nature of climate change. UMass Extension wants to play a leading role in the conversation of how to meet the needs of farmers. To increase UMass Extension's presence throughout the Commonwealth and to modernize farms, there needs to be an increase in their capacity and funding.

Teagasc's Director of Knowledge Transfer, Stan Lalor, testified on the technical assistance and education that Ireland provides to its farmers to increase conservation and sustainability in agriculture. Teagasc has 4 research programming areas: animals and grasslands; crops, environment, and land use; rural economy and development; and food processing.

Currently, the average age of Irish farmers is 58 years old, with 1 in 3 farmers over the age of 65 years old. There is a significant push to equalize the gender imbalance of farmers and increase opportunities for women and younger generations in agriculture through knowledge transfer.

Knowledge transfer within Teagasc is focused on 3 pathways: between researchers and specialists; between specialist advisors and teachers; and between research advisors and teachers. For knowledge transfer to be

more effective and sustainable, it must be shifted from a one-way communication from an expert to an everyday user to a two-way exchange with an advisor as a facilitator. Teagasc is also heavily invested in improving the sustainability (and not just in the environmental sense) of agriculture in Ireland. Their priority areas for sustainability moving forward include water quality, climate action, biodiversity, farm viability, and social connection.

Rutgers University's Cooperative Extension Director, Dr. Brian Schilling, testified regarding the importance of extension programs in providing resources and education to local agricultural producers. Despite the challenges facing farmers, Dr. Schilling emphasized that the decline of agriculture is not inevitable. Although New Jersey's agricultural industry is larger than Massachusetts', the two states are comparable in several aspects, including their similar amount of established agricultural land and the land available for use by farmers. Also like Massachusetts, New Jersey agriculture faces high labor costs, high farmland values, a competitive market environment, and a fluctuating concentration of agricultural sales. A small number of farms produce 75% of the state's farm value, which poses a threat to farms' economic viability as farmland loss increases. New Jersey facilitated focus groups of farmers to gather data on their priority issue areas. Priorities arose in farm management, their ability to engage and transition generationally from one crop to another and from one type of production system to another, climate change, and access to technical assistance with business and marketing strategies. New Jersey highlighted several opportunities to address these challenges, including preserving farmland in a way that encourages adaptive management for new practices, technologies, and infrastructure needs, facilitating farm succession through the transfer of land, knowledge, and equity to the next generation of farmers, and increasing extension's ability to engage with and advocate for proposed legislation.

United States Department of Agriculture (USDA) State Conservationist for Massachusetts Dan Wright testified regarding the national programs that are available in Massachusetts for continuing education and farm modernization. The USDA offers several conservation technical assistance plans focusing on providing funding to USDA staff to help farmers and provide support at a local level. Additionally, USDA programs offer base funding to identify and meet farmers' needs, assess resource concerns, and build plans to move forward within existing programs. The Environmental Quality and Incentives Program aims to help producers apply conservation practices on their land. The Agricultural Conservation Easement Program provides a land conservation umbrella program with several specifically tailored programs for farmers. Conservation Innovation Grants provide funding for farmers to "think outside the box" and provide temporary funding until new technology and practices are written into the existing program guidelines. The Regional Conservation Partnership Program offers voluntary conservation practices to find solutions to natural resource challenges. To provide these services, USDA relies heavily on their federal and state partners to help deliver funding directly to farmers.

Executive Director of the Association of Northeast Extension Directors (NEED) Ali Mitchell testified regarding the work NEED engages in to set priorities, link resources, collaborate on new projects, and support an effective extension system. Federal funding for extension programs is distributed based on a specific formula and is matched by state or county funding at a 1:1 rate. This funding is primarily directed towards staffing extensions, and then secondarily towards grants and gifts. The federal capacity funding has not increased past inflation for over 10 years, and there is no indication that this will change. At the same time, extensions' purchasing power has decreased, but the expectations on the services that extension programs offer has increased. Extensions have expanded their missions but have not received a corresponding increase in funding. NEED's region extends from Maine to West Virginia, including diverse agriculture with most farmers growing more than one crop and farmland used for more than one income stream. Successful programs that have been implemented throughout the region include The University of Maine's Agriculture Mediation Program offering conflict resolution support to farmers, the Vermont Bridges to Health Program establishing the only healthcare support system in Vermont for immigrant farmers, The New York Integrated Pest Management Network to help farmers make informed pest management decision, and Massachusetts' Healthy Soils Action Plan, among others.

Superintendent of Bristol County Agricultural High School Derek Costa testified regarding the recent renovations to the Bristol County Agricultural High School and their new programs to prepare young farmers for the evolving challenges and advances within the industry. Bristol County Agricultural High School's recent curriculum innovations focus on workforce development, career readiness, and post-secondary preparation. The school implements an interdisciplinary approach, focusing on research, hands-on experience, and investment directly into classrooms. Students study under the agricultural mechanical program, horticultural sciences, and vet sciences. Anticipating where the agricultural sector is expected to evolve, technological innovations are integrated into both classrooms and the local farming community through partnership with local farms.

UMass Amherst Chancellor Javier Reyes testified regarding the impact of the services that UMass Extension offers and the importance of evolving with the agricultural industry.

Universities and secondary education institutions offer valuable opportunities to conduct research to provide real-world solutions to address food production challenges, particularly in the context of climate change. Agriculture is changing and requires a different type of understanding and educational experience to ensure its sustainability. To meet and address the new challenges facing agriculture, universities must focus on health, climate adaptation, renewable energy, and sustainability. UMass Amherst is at the forefront of this evolution, focusing on critical issues such as climate change, clean energy, the impact of coastal change along the North Shore, research on sustainable lobstering, and supporting urban agriculture. There is much more that could be done with increased funding and resources. Massachusetts is facing a widening of the economic gap and decrease in farmland. Chancellor Reyes committed himself and the university to centering the voices and ideas of those who experience these threats first-hand. Increased encouragement and visibility of the pathway to farming for younger UMass Amherst students will establish a critical pipeline of talent into industries, delivering economic development and innovation.

Hearing 8: Farm Energy: April 30, 2024

During the eighth meeting of the Special Commission on Agriculture in the Commonwealth in the 21st Century, commission members and community members provided testimony on the intersection of farms and energy. Testimony addressed various issues related to agriculture and energy, particularly how farms can benefit from and contribute to energy production through a range of programs and technologies. Testifiers included commission member and CEO of Solar Agricultural Services Ian Ward who was joined by farmer Joe Czajkowski; Liberty Hyde Bailey Professor at Cornell University's School of Plant and Science Soil and Crop Sciences Section Johannes Lehmann joined by farmer Doug Young; Director of University of Massachusetts (UMASS) Clean Energy Extension (CEE) Dwayne Berger; Senior New England Policy Manager for the American Farmland Trust (AFT) Chelsea Gazzillo; and Director of the Division of Agricultural Conservation and Technical Assistance at the Massachusetts Department of Agricultural Resources (MDAR), Gerard Kennedy.

First, commission member and Chair of the Joint Committee on Telecommunications, Utilities, and Energy, Representative Jeffrey Roy, shared his experience with Jordan Dairy Farms in Rutland and Spencer. The farm transforms organic waste to support decarbonization and regenerative agriculture. In partnership with Vanguard Renewables, Jordan Dairy Farms operates an anaerobic digester that converts manure and organic food waste into renewable natural gas. The process uses enzymes and microorganisms to convert sugars, fats, and other compounds into biogas, which produces renewable energy. Prior to using the anaerobic digester, the farm was struggling with energy costs, but now all of their energy costs are covered by the plant, which also produces fertilizer.

Commission member, cranberry grower, and CEO of Solar Agricultural Services Ian Ward, testified on agrivoltaics, which is the combination of agriculture and photovoltaics. The use of agrivoltaics can help support farm viability and prevent the loss of farmland by utilizing land for both solar and agricultural production. Over the next decade, the world's population is expected to reach nine billion people, making it crucial to implement smart, productive land use practices, such as producing food while generating energy. According to Ward, a solution is to use agrivoltaics, which can simultaneously help revitalize farm families as solar power provides farmers with an additional source of income. Farmer Joe Czajkowski explained that growing crops under his solar projects has been successful. However, Czajkowski testified that a significant issue he faces is long delays in projects being "hooked up" by Eversource. This caused his farm to lose a year of generation, despite having paid for the interconnection two years ago. To manage this problem, Ward suggests expediting solar projects on farms with Eversource and National Grid. He also highlights the importance of the legislature maintaining tax protections for agrivoltaic and farm energy projects under 62A. Moreover, Ward encourages reevaluating the energy efficiency levels of agrivoltaics and conventional solar methods while exploring if agrivoltaics can exceed a 200% level of energy production.

In response, Commission member Brian Wick articulated concerns over local zoning, due to varying opinions on renewable energy. Wick believes it may be challenging to work with communities that hold 'not in my backyard' attitudes, which could cause them to oppose implementing agrivoltaics. Representative Schmid offers support for cranberry growers placing solar panels along the edges of their bogs.

Liberty Hyde Bailey Professor at Cornell University's School of Plant and Science Johannes Lehmann testified on energy and digestion. Lehmann is involved in a project that uses pyrolysis bioenergy as part of a dairy manure management system. Pyrolysis, which is the heating of organic material without oxygen, creates solid material and energy, including biochar that is beneficial for soil health. This process can help mitigate waste by using the leftover manure or other materials that a biodigester was unable to break down to produce char and methane for energy. A key question is whether it is possible to use thermochemical conversion in wet waste dairy manure, as the high moisture and low energy content may make it challenging for the conversion to be effective. The process of using a pyrolysis chamber can reduce the mass of manure by over 90% and the volume by around 80%. This reduction allows for lower costs and time for hauling, decreased storage space, and eliminates odors. The next challenge is to recycle the unused heat from this process. For example, farmer Doug Young proposes utilizing the unused heat to preheat the dairy manure before it enters the digester, as it is a necessary energy requirement for the process. While there have been challenges with site adaptation, this process is commercially available and may be leased, making investments less risky.

Director of the UMASS CEE, Dwayne Berger, testified on solar energy, the agricultural system, and pollinator friendly photovoltaics (PVs). The CEE reviews dual-use or agrivoltaic predetermination applications to the Solar Massachusetts Renewable Target (SMART) Program, inspects farm viability plans, and provides recommendations to applicants. Since the start of their reviews, and the SMART program's agrivoltaics adder, there has been a continuous increase in applications for a diverse range of crops, including cranberries, hay, livestock, vegetables, and fruit. The CEE is in its final year of a research project on the impacts of agrivoltaics on crop productivity with the U.S. Department of Energy (DOE), in conjunction with the Agricultural Extension, the university's Cranberry Experiment Station, the Department of Resource Economics, commercial solar developers, and affiliated researchers, including AFT and Solar Ag Services. The project has three site trials. According to Berger, it is necessary to gather several more years of data to determine the effects on crop productivity, as varying soil conditions, designs of agrivoltaic panels, types of crops, and weather variances also impact growing conditions. The federal funding for this project is running out, and Berger requests that the state consider providing additional research funds for further research at the DOE sites. He also suggests that the state restore the pollinator-friendly PV certification adder to the SMART program to attract solar developers. Furthermore, Berger recommends that land dedicated to solar should be pollinator or wildlife friendly.

Senior New England Policy Manager for AFT, Chelsea Gazzillo, testified about AFT's position on land use and energy generation. According to the Massachusetts Farmland Action Plan, about 111,000 acres of farmland in MA were converted or lost between 1985 and 2016. Furthermore, 66% of the farmland that was lost in the state is now fallow, as it was not developed for any other purpose after being abandoned. The Commonwealth generates about 24% of the state's electricity from solar energy, but more solar will be necessary to progress climate and farm viability goals. It is projected that by 2050, ten million acres of U.S. land will need to be utilized for solar energy to reach decarbonization and energy targets, with 83% of new solar development expected to be on farm and ranch land, unless we see significant policy intervention. AFT believes Massachusetts should play a large role in this movement, as the state has been a leader in developing the nation's first agricultural dual-use incentive. AFT recommends building relationships with BIPOC communities through listening sessions and working groups to develop policies that incentivize land access for BIPOC producers. Ethan Winter of AFT cites other states as examples, such as New Jersey, which is working on a 200-megawatt, three-year pilot program for agrivoltaics, and Colorado, which includes research funding in its state budget.

Director of the Division of Agricultural Conservation and Technical Assistance at MDAR, Gerard Kennedy, testified on work the Department is doing, including the Farmland Action Plan and the Local Food Action Plan. The Farmland Action Plan is guided by the Commonwealth's commitment to achieving no net loss of farmland or soil organic carbon through initiatives like the Resilient Lands Initiative, the Healthy Soils Action Plan, and the Decarbonization Pathway. The Local Food Action Plan emphasizes the importance of providing access to healthy food to all residents. MDAR is committed to supporting farmers in contributing to these goals by investing in renewable energy. MDAR developed an agricultural energy grant program that funds applicants up to $50,000 to support implementing energy efficient practices and renewable energy systems. Additionally, MDAR provides funding to the Massachusetts Farm Energy Program to support audits and technical and financial assistance to farms. MDAR recommends increasing opportunities for small-scale anaerobic digesters on farms, reassessing the SMART prohibition on tree removal, incentivizing crop production, and dedicating funding for the Agricultural Energy grant program.

Hearing 9: Recommendation Drafting Group Presentations: July 15, 2024

During the eighth meeting of the Special Commission on Agriculture in the Commonwealth in the 21st Century, commission members reported on the work of each recommendation drafting group: Climate Change and Natural Disasters, Technical Assistance and Continuing Education, and Farm Energy.

Climate Change and Natural Disasters Recommendation Drafting Group

The primary presenters were Representative Paul Schmid and MDAR Deputy Commissioner Winton Pitcoff. Schmid pointed to the New England Feeding New England 2023 Report, which found that only 5% of the food consumed in New England is produced locally, with a proposed goal of increasing the region's food self-reliance to 30% by 2030. Schmid recommended combating food insecurity through increased local food production, setting specific farm preservation targets, and measuring farmland loss. The Greater Boston Food Bank's Fourth Annual Statewide Report found that 34% of households in Massachusetts face food insecurity. This can be addressed by funding biennial agricultural censuses, prioritizing land access for BIPOC and new farmers, adjusting M.G.L. Chapter 61 for land smaller than five acres, and funding an MDAR economist position.

Deputy Commissioner Pitcoff presented several problem statements. First, climate change is disrupting food production with extreme weather. Solutions included disaster relief fund carve-outs, supporting controlled-climate growing infrastructure, MDAR grants for equipment to combat heat stress, coordinated response programs, and various insurance options. Second, despite farmers playing an essential role in protecting natural resources, increasing farm expenses make it difficult for them to address climate impacts. He recommended incentivizing healthy soil practices, creating a state payment for ecosystem services program, improving state and federal grant program coordination, and establishing an Office of Agricultural Innovation. Third, climate change impacts agricultural productivity, with proposed solutions of helping UMass Extension expand research and technical assistance (TA), funding and tracking MDAR grants for resilient and climate-smart management practices, supporting agricultural and vocational schools, implementing the Healthy Soils Action Plan, and making grants accessible. Fourth, farm loss and high land costs threaten food production, particularly for BIPOC and beginning farmers. Pitcoff suggested enacting the Massachusetts Farmland Action Plan, tracking food production goal progress, offering tax credits and zero-interest loans, and partnering with conservation groups. Fifth, state and local governments are responsible for preparing for climate change disasters, but this can be costly for communities. Pitcoff recommended strengthening the Municipal Vulnerability Preparedness program to address threats like sea level rise and saltwater intrusion. Sixth, there is limited access to open space for farms which can be addressed through a no-net-loss policy, a Chapter 61A registry, allowing land that is less than five acres to enroll in Chapter 61, revising the APR program, and expanding MDAR's Urban Agriculture Program.

Additional issues discussed were deer overpopulation, PFAS contamination, and that the cost of food production exceeds farm revenue. Suggestions included forming a deer management commission, establishing a relief fund and indemnifying farmers, passing relevant pending legislation, supporting agritourism, and supporting programs like Mass Grown.

Chair Comerford asked if statutory changes were needed or if recommendations could be implemented through regulation. Pitcoff agreed that considering this would be helpful and that different recommendations could fall under either category. Chair Hogan asked where Massachusetts stands on data collection compared to other states. Pitcoff used Rhode Island's annual surveys as an example of a way to increase collection frequency. Representative Roy wondered whether methane reduction from cattle should be included in the recommendations. Clem Clay acknowledged the relevance but said that the Extension had not yet examined it. John Duke, of the New England Farming Association, raised a concern about the recommendations' lack of consideration for biodiversity.

Technical Assistance and Education Drafting Group

The primary presenter was Clem Clay from the UMass Center for Agriculture, Food, and the Environment and he addressed several problem statements. First, available data is often incomplete or incorrect, which means that programs and investments may not be effectively targeted. Clay recommended funding a biennial agricultural census, using the various data to evaluate state initiatives, and hiring an MDAR economist. Second, educational opportunities for young and beginning farmers are inconsistent. Solutions included analyzing existing opportunities, creating an MDAR portal to address gaps, supporting initiatives like the Next Generation Farmer Fund from H.4387, and funding

4-H and FFA membership fees. Third, agriculture is overlooked as a viable career path. Clay explained that it would be helpful to reduce student debt, pass H.4427 to excuse 4-H student absences, pass H.558/S.243 to support agricultural education, fund internships for BIPOC and underserved students, and improve the MassHire Workforce Board. Fourth, there have been inconsistent and confusing TA options as private organizations replace public entities. To improve communications, Clay proposed implementing a network of navigators, contracting with NGOs to improve TA, restoring UMass Extension's business and risk management program, and identifying funding overlaps. Fifth, the availability of UMass Extension services has declined due to the increased rate of change in the farming industry. Clay recommended identifying priority services, staffing UMass Extension using a 3:1 funding ratio, improving its capacity to provide renewable energy TA, and revising the UMass Extension Board of Public Overseers. Sixth, the state grant process does not align with farmers' seasonal schedules, which can be fixed through issuing RFRs in winter, allowing a year for project completion, placing grant funds into trusts, purchasing used equipment, recognizing self-labor as an expense, awarding some funds on a disbursement basis, supporting Buy Local organizations, and improving language translation. Chair Hogan asked if UMass Extension could handle these responsibilities on its own. Clay answered that while UMass should remain central to agricultural services, other organizations should still contribute. Chair Comerford questioned whether there was enough data for their recommendations. Clay acknowledged that additional clarity was needed for a variety of elements, such as defining eligibility criteria.

Farm Energy Drafting Group

Karen Schwalbe from the Massachusetts Farm Bureau Federation was the primary presenter for the Farm Energy Drafting Group, and she provided several problem statements and recommendations. First, there is tension between expanding renewable energy and preserving farmland as there are no clear policies on how to strike that balance. Schwalbe recommended developing a statewide policy prioritizing renewable energy on non-productive soil, supporting agrivoltaic projects, improving the SMART ASTGU project application process, enrolling solar projects on unprotected soils, and allowing tree removal in limited circumstances. Second, implementing agrivoltaic technology is expensive. Solutions included reviewing the Agricultural Preservation Restrictions and providing state funding for liability insurance costs. Third, there is insufficient research on the impact of solar installations on crop yields, water retention, and soil health. Schwalbe proposed studying agrivoltaic shading scenarios. Fourth, most farm equipment uses fossil fuels, and switching to renewable energy is expensive. Schwalbe suggested incentivizing using renewable resource-generated electricity. Fifth, grid connection issues have caused delays that discourage farm energy projects. The solution was passing legislation from the Infrastructure Siting and Permitting Commission. Sixth, rising energy costs particularly affect farms with climate-controlled facilities. Recommendations included increasing reimbursement rates through the Farm Energy Discount Program, connecting more farmers with MassSave, and funding MDAR's Agricultural Energy Grant Program. Additionally, organic waste goals pose challenges for farm waste management systems, but supporting small scale anaerobic digesters could address this issue. Another concern was the lack of infrastructure for storing surplus renewable energy. Suggestions included creating incentives for farm battery storage systems and renewable energy projects, while ensuring favorable feed-in tariffs and net metering policies.

Finally, renewable energy incentives were criticized for ignoring sustainable wood production, with recommendations of promoting biochar and wood residue use, adding biochar production to the Renewable Portfolio Standard, and incorporating sustainable wood products into Extension services. Chair Hogan asked whether farmers are prepared for these recommendations. Brian Wick, of the Cape Cod Cranberry Growers Association, responded that there is a disconnect regarding existing programs, but the Farm Bureau will act as a guide. Another question addressed the tension between energy and food production. Schwalbe and Iain Ward, of New England Consulting Services, explained that the balance both to ensure farms remain viable while implementing renewable energy. Chair Comerford raised concerns about the cost of transitioning to electric equipment, especially following recent investments in fuel powered tools.

Hearing 10: Final Commission Meeting and Report Vote: July 22, 2025

During the tenth and final hearing of the Special Commission on Agriculture in the Commonwealth in the 21st Century, commission members gathered to formally adopt the Commission's final report. Co-Chairs Representative Kate Hogan and Senator Jo Comerford opened the hearing by reflecting on the Commission's multi-year process, emphasizing its extensive public engagement, research, and collaboration. The final report centers farmers' voices, advances equity, and outlines recommendations in areas such as climate resilience, farmland access, and workforce development.

Commission members expressed gratitude to the co-chairs, staff, and subcommittee leaders for their leadership and dedication. Testifiers highlighted the Commission's responsiveness to farmers' needs and its honest assessment of challenges including land access, labor shortages, rising costs, and farm viability. Members underscored that the report provides a pathway to strengthen agriculture in Massachusetts for the next generation.

Senator Michael Barrett proposed edits, noting issues with terminology, outdated references, and the omission of suburban agriculture. Other members, including Representative Natalie Blais, Senator Anne Gobi, Senator Becca Rausch, Karen Schwalbe of the Farm Bureau, Iain Ward, Commissioner Ashley Randle, and Brian Wick, offered reflections on the Commission's collaborative work and the importance of sustaining agriculture statewide.

Senator Comerford noted that the Commission held nine public hearings, including an in-person session and field visit at UMass Amherst, and that three subject-matter drafting groups produced hundreds of recommendations that were refined into the final report. Subcommittee leaders Winton Pitcoff, Clem Clay, and Karen Schwalbe were recognized for their expertise and leadership.

Following discussion, the Commission proceeded with a roll call vote and unanimously adopted the final report. Co-Chairs Hogan and Comerford announced that the finalized report will be published online in the fall. The report's recommendations are expected to guide legislation and policy in the current and upcoming session, reinforcing the Commonwealth's commitment to supporting farmers and strengthening the agricultural sector in the 21st century.

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Klein, Tom "Seafood Throwdown chef, Boston Local Food Festival" September 2024

Corcoran-Hunt, Elizabeth "Apples" Russell Orchards, Ipswich, MA October 2018

Gwydyr Farm "Caroline Halladay & Lamb" Gwydry Farm, Southampton, MA April 2025

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