



NH FOOD ALLIANCE



Building a climate change resilient food system in NH

This document:

- Summarizes the current risks, challenges, and opportunities posed by climate change to the NH food system;
- Argues that now is the time to develop strong networks and policies at the local, state, and regional levels to contribute to a more resilient and food secure future; and
- Identifies key recommendations for launching this work.

I. Overview

The strength of our local and regional food systems have always been influenced by the prevailing weather patterns, the locally occurring predators and pests, and the demographics of the population. Over time, farmers, fisherman, and ranchers adopt practices best suited to their locale in order to ensure a stable harvest. However, the recent sustained warming of the Earth due to human activities has led to shocks and stressors that add to the existing challenges of maintaining a stable food system. Already, climate impacts on farms and fisheries have been observed locally and globally. As these impacts are projected to increase in scope and scale, and the global population is expected to keep growing, this is a critical time to examine the vulnerabilities of New Hampshire's food system in a changing climate.

By identifying and responding effectively to the opportunities and risks and posed by climate change, New Hampshire, and its neighboring states, will be able to build the resilience necessary to weather these new and unpredictable environmental conditions. The term resilience refers to how well individuals, institutions, or systems are able to adapt to changes and the adverse shocks and stressors they may present. By working together, we can create a resilient food system with thriving local farms and food businesses and ensure food security for all in the Granite State.

II. Background

Our Changing Climate

The last few years have seen record-breaking, climate-related weather extremes. Climate change is already affecting farmers in New Hampshire, and these effects are projected to grow, along with global temperatures.

- NH's average annual temperatures have increased by 2.3 degrees Fahrenheit in the past century, with most of that rise occurring since the 1970s.
- The state has experienced a dramatic increase in extreme and erratic weather including: a 47-week drought in 2016 that caused hundreds of wells in southeastern New Hampshire to go dry; record rainfall and flooding in 2017; three Nor'easters within a three week-period in March 2018; and an early spring thaw followed by a deep freeze left fields covered with ice, delaying green-up in spring in 2019.
- The warmer, wetter climate has enabled new pests and diseases to expand and add additional pressure on producers, such as late blight which is now year round, and from the spotted wing drosophila, a newly introduced fruit fly.

Food System Impacts

Local

While a changing climate may mean opportunities for longer growing seasons and new crops, at this point, the negative effects outweigh benefits, putting all sectors of our food economy at risk.

- **Fruit and Vegetables:** In 2019, in all but two of New Hampshire's counties, farmers saw at least a 30 percent loss of alfalfa, raspberry or blueberry crops. Variability in weather patterns threaten to increase crop losses like these.
- **Seafood:** Rising temperatures threaten New Hampshire's \$35 million seafood industry as species like cod are driven into deeper waters or toward the planet's poles. New, less desirable species are being driven toward our coastline, with unpredictable results.
- **Dairy:** Dairy farms, a \$52 million industry, are already facing considerable challenges to profitability; heat waves, which are expected to become more sustained and more frequent, make dairy cows less fertile, more vulnerable to disease, and less productive.
- **Maple:** Syrup production is at risk through potential shifts in sugar maple habitat, tapping season timing and duration, and the quality of both the trees and sap.

Global

Currently, NH farms produce less than 5% of the amount of food consumed in NH. Most of our food is produced elsewhere, in regions where climate change poses similar if not greater risks to food production.

Our dependence on food that is grown and transported to us from other regions contributes to our vulnerability in the face of climate change, leaving us with few buffers against global disturbances in the availability, quantity, and cost of food.

A Path Forward

Currently, there is no coordinated planning effort to address resilience and food security in the face of climate change in NH. By investing in a resilient food system, New Hampshire will be prepared for future disruptions to global and regional food supplies, and ensure that our communities are thriving and food secure.

Understanding these risks and preparing for them will not only protect the security of our food supply but could also give New Hampshire a competitive advantage, making the state more attractive to companies seeking safer locations.

- New Hampshire residents spend \$4 billion each year on food sourced outside the state.
- In an era in which more and more New Hampshire residents are being urged to eat more fruits and vegetables, sales have declined. Fruit sales peaked at \$34 million in 1973, and now stand at \$13 million. Vegetable sales peaked at \$30 million in 1989, and now have fallen to \$5 million.
- Moreover, a considerable amount of these sales are devoted to customers in Boston, New York, or other metropolitan centers, and do not feed New Hampshire residents.

There is enormous potential for NH producers and businesses to supply more food for NH and the New England region, increasing our food security and spurring economic development. Other states recognize the importance of strengthening our regional food supply as well. Food Solutions New England coordinates and supports a 6-state effort with a vision to increase the amount of local food produced and consumed in New England to 50% by 2060.

Public policy and coordination can help to make this vision of a resilient regional food system a reality, fostering necessary knowledge, tools and partnerships. Legislative policy can support wise stewardship of the state's resources, funneling investments into sectors that lay the groundwork for the change needed to achieve the future we want. Strengthening New Hampshire's community-based food system is pivotal for a food-secure future for New Hampshire.

III. Recommended Actions

During a series of discussions and meetings facilitated by the NH Food Alliance over the past 6 months, the Climate Policy Team identified recommendations intended to coordinate existing climate and food system efforts within the state and identify opportunities for deeper collaborative work and research. These recommendations do not specify particular policies or practices. Instead, they outline a process that will result in a plan for the future and a strong coalition to advance the work. The Climate Policy Team recognized that their conversations were among the state's first steps in addressing this issue and that more work needs to be done with a broader group of stakeholders. As such the recommendations that follow are intended to continue the work of the past year more comprehensively.

The recommendations are listed in an order activity that could followed as a progression. While certain recommendations require others to be completed first, others can be addressed simultaneously by different groups

1. Evaluate the resilience of the current food system in New Hampshire

Numerous efforts, initiatives, programs, and policies already exist to support local food producers and ensure food security in New Hampshire. The fact that climate change has such broad implications for the environment, energy system, and the economy, means that many of these efforts may also address climate change resilience. To understand these relationships, we need to:

- Inventory existing food system programs, policies, and initiatives in NH;
- Assess how these policies, programs, and initiatives relate to climate change and the development of a resilient food system;
- Conduct interviews and/or focus groups with key stakeholders to better understand the risks, opportunities, and needs related to climate change and resilience as well as recommendations for action; and
- Analyze data and create a report that summarizes the current status of food system resiliency in NH according to the adopted framework and research. This report will also include an analysis of needs identified by stakeholders, including: specific research to support adaptive production systems, technical support for farmers and food businesses, etc.

We recommend framing the resiliency inventory using the criteria outlined in *Food Systems Resilience: Concepts & Policy Approaches* (Harris and Spiegel, 2019) published by the Center for Agriculture and Food Systems Policy at VT Law School. These criteria include a specific attention to equity, inclusion and the impact of climate change on food security.

Potential lead entity: The NH Food Alliance, in collaboration with Vital Communities, will host a Sustainability Fellow who will conduct this research from June-August of 2020.

Potential timeframe: June-August 2020

2. Learn from and coordinate with other states and regions working to build a climate resilient food system

Numerous US states as well as other nations around the globe have begun to plan for the impacts of climate change within their borders as well as to other food producing regions in order to prepare for greater food security and food system resilience. In order to benefit from that work, we should:

- Coordinate and communicate with the regional food network, Food Solutions New England (FSNE), to learn about similar efforts in other New England states and to ensure that our work aligns with and leverages collaboration within the region.
- Review the plans and initiatives in other leading states across the country focused on promoting climate resilient food systems.

Potential lead entity: New England Food System Planners Community of Practice, a group coordinated by Vermont Sustainable Jobs Fund, already convenes monthly calls with New England food system network leaders. The current focus of this collaboration is creating a strategic plan to develop a resilient regional food system that works toward increasing local food production and regional supply and distribution channels as well as food security and equity across states.

Potential timeframe: 2020-2022

3. Conduct a comprehensive assessment of the current and projected impacts of climate change on NH's food system

There has been considerable evaluation of the historical and projected impacts of climate change on the state and region's physical environment and to ecosystems, as well as some broad consideration of the impacts to agricultural production and the sustainability of fisheries. To better understand the current and future risks this presents, we need to:

- Assess the current and projected impacts of climate change on NH's agricultural lands, dairy operations, and fisheries.
- Evaluate the risks posed by the secondary and tertiary impacts of those changes on NH's food system (e.g., markets, vulnerable populations).

Potential lead entity: The UNH Sustainability Institute, in collaboration with the Department of Agriculture, Nutrition, and Food Systems, is beginning an effort to convene an interdisciplinary working group to advance collaborative research related to climate change and the food system. This group could spearhead proposal-writing to fund this research.

Potential timeframe: 2021-2022

4. Consider the potential impacts of climate change in food producing regions outside of NH and identify the threats to NH's broader food system

While there is a robust effort to build and maintain a vibrant local food network, it should be recognized that NH relies on the large breadbaskets of the Midwest and West Coast for much of our food. Global supplies and pricing also impact what is available and at what price.

Potential lead entity: The interdisciplinary working group described above could contribute to this research.

Potential timeframe: 2021 and beyond

5. Develop an action plan or strategy to create a resilient food system in NH and identify entities and coalitions responsible for each element of the plan.

The data and analysis obtained from the assessment of NH's food system and the evaluation of food system resilience efforts across the globe should provide the necessary background to develop a plan to address NH's needs while taking advantage of existing resources and opportunities. The mechanisms identified in the plan may range from voluntary actions to those requiring legislation, and from providing education and technical assistance to providing financial assistance. In developing this plan or strategy, care should be taken to:

- Work with stakeholders across the state to ensure broad participation and engagement to generate the external support needed to enable implementation of the plan;
- Ensure that NH efforts align with and help to strengthen the food system of the region. While the emphasis of brief work may be on NH, we recognize that NH will not be food secure without strong regional supply and distribution networks. FSNE is already mobilizing states across the region to increase local food production and coordination; the work in NH should recognize that a successful state strategy will need to be nested, to a degree, within a broader regional strategy; and
- Ensure that the plan is actionable, with clear outcomes, timelines, and food system actors identified in order to enable implementation of the plan.

Potential lead entity: The NH Food Alliance network will work closely with network partners, including UNH Extension, regional food systems organizations like Vital Communities, Resource Conservation Districts, and many others, to identify the appropriate lead organization to coordinate and write the plan.

Potential timeframe: 2021-2022

6. Ensure that there is a viable coordinating entity.

Managing the completion of an inventory, conducting the assessment, and developing a plan will require the collaboration and coordinated action of people, organizations, institutions and businesses across food-system sectors. Based on the experiences of the Climate Policy Team in 2019 and early 2020, the Team recommends a multi-layered approach to manage the collective work required, including dedicated staffing and engagement of participants with broad perspectives. This could include:

- Establishing a Climate Resilient Food System working group that brings together food system perspectives, climate planners, and policy professionals to provide input and direction as the recommendations outlined in this brief are implemented.
- The New Hampshire Food Alliance could serve as the backbone of the effort, with its experience in research, education, network engagement, and identifying funding. The Alliance could also serve as a repository for the work and ensure continuity as participants transition into and out of the Climate Resilient Food System working group.

Potential lead entity: The NH Food Alliance network will work closely with network partners to identify working group participants as well as researchers and other groups interested and capable of carrying out necessary research and planning activities.

Potential timeframe: 2021-2022

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