

Review Report

Contributing Organizations

University of Vermont

Directors

Christopher Callahan (University of Vermont)

Signed

Linda Prokopy (University of Vermont)

Signed

Reviewers

NIFA Reviewer

MALLORY KOENINGS

Division Director Reviewer

JODI WILLIAMS

Executive Summary

Overview

Vermont is a predominantly rural state, approximately 73% forested, and ranks as the second least populated in the United States. About 65% of its 645,570 residents live in rural areas. The state also has one of the oldest populations in the nation, with 19.4% aged 65 and older and an average age of 42.8. By 2030, an estimated one in three Vermonters will be over the age of 60. These demographic realities shape workforce needs, community development priorities, and service delivery across the state.

Workforce and educational trends further underscore these challenges. As of 2021, only 59% of Vermont's working-age population (ages 25-64) holds a credential of value. While Vermont historically maintained one of

the highest high school graduation rates nationally, the rate has declined to 83%, now below the national average. College aspirations among youth have also dropped since 2020, particularly among young men who would be the first in their families to pursue higher education. For low-income students, only one-third report plans to attend college. These trends motivate focused efforts to raise awareness of emerging career pathways, especially in technology and agriculture, and to connect youth to viable educational and workforce opportunities.

Economic stability and quality of life remain closely tied to access to livable wages, safe housing, and nutritious food. Rural residents often face additional barriers, including geographic isolation, limited broadband access, constrained employment opportunities, and reduced access to healthful foods. Housing shortages further compound these challenges; Vermont is estimated to need 30,000 to 40,000 additional year-round homes by 2030. Together, these factors reinforce the importance of rural community development strategies that address workforce development, housing availability, land access for new farmers, and diversified, economically viable agricultural systems.

Agriculture and forestry remain central to Vermont's economy, culture, and identity. The state's forests contribute more than \$1.5 billion annually through timber, recreation, tourism, and ecosystem services. Vermont produces approximately 50% of the nation's maple syrup, and total agricultural sales (led by dairy) exceed those of any other New England state. These outcomes are achieved using just one-fifth of the state's land base. Vermont also leads in local and regional food systems, with more than 1,200 farms producing vegetables and berries, and strong participation in farmers' markets, community-supported agriculture (CSA), and farm-to-school programs.

The long-term viability of these systems depends on both economic sustainability and environmental stewardship. The health of Vermont's food system is inseparable from the stewardship of its natural resources. UVM Extension plays a critical role in advancing water quality improvements in key watersheds, including the Lake Champlain Basin and Connecticut River Valley, which are vital both environmentally and economically.

Extreme weather events are increasing pressures on Vermont communities and agricultural systems. Historic flooding in 2023 and 2024 caused widespread damage to over 150 cities, towns, and villages, resulting in over a billion dollars in damage. In contrast, 2025 brought severe to extreme drought conditions, reducing crop yields, constraining feed and water supplies, and increasing operational costs. These events highlight the urgent need for research-driven and educational approaches to weather variability, risk mitigation, and long-term resilience for farms, businesses, and communities.

Within this context, the University of Vermont's College of Agriculture and Life Sciences (CALs) serves as the state's land-grant hub for integrating top-tier (Carnegie R1) research, education, and Extension. Research conducted through the Vermont Agricultural Experiment Station (AES), together with outreach delivered by UVM Extension (EXT), works in concert to address the needs of Vermont's residents, communities, and industries. Collectively, these efforts support a high quality of life characterized by a healthy natural environment, a vibrant and resilient economy, strong communities, and deep connections to agriculture and food systems. Guided by stakeholder needs and statewide priorities, CALs focuses its research and Extension efforts on seven critical issue areas:

- Animal Health, Production, and Products
- Development and Engagement of Communities
- Foundational and Exploratory Research in Agriculture
- Long-term Viability of Vermont Agriculture, Food, and Forests
- Nutritional Value, Food Security, and Food Safety
- Quality of the Natural Environment
- Resilience of Families and Individuals

Across these areas, AES and EXT conduct research, provide technical assistance, and deliver science-based education to a broad range of audiences. These efforts build knowledge, strengthen skills, and promote the adoption of cost-effective, environmentally sound practices that benefit individuals, communities, and industries statewide.

Looking ahead, we recognize that our priorities and approaches must continue to evolve in response to emerging needs, stakeholder input, and institutional direction. The University of Vermont's Strategic Plan, grounded in four pillars that emphasize academic excellence, student success, research and scholarship, and community engagement, provides an important framework for this evolution. In parallel, a comprehensive CALS strategic alignment process is underway including the development of shared research themes that will help focus investments, strengthen collaboration, and enhance our ability to secure external funding to maximize positive community impact. As these efforts continue, they may further refine how we address the critical issues outlined in this Plan of Work.

At the same time, CALS is advancing a broader, more connected approach to identifying and addressing needs. The Vermont Assessment of Assets, Angles, and Needs (VAAAN) is a two-year, participatory effort using a mixed-methods approach to identify statewide priorities across broad thematic areas, fostering collaboration among organizations and informing programming beyond traditional institutional boundaries. This work complements CALS' engagement in the 2023 *Northeast Agenda*, a collaborative initiative of land-grant universities across the region that identifies shared challenges and opportunities and calls for greater coordination between research and Extension. By aligning with both statewide and regional frameworks, we strengthen our ability to deliver integrated, high-impact solutions that respond to local needs while contributing to broader regional and national priorities.

Critical Issue Additional Information: Animal Health, Production, and Products

Animal health, production, and product systems face ongoing challenges related to disease, efficiency, animal well-being, and the quality and utilization of animal-derived products. These issues affect agricultural sustainability, economic viability, food security, and public trust. Addressing them requires advances in areas such as disease prevention and biosecurity, animal nutrition and physiology, genomic improvement, production efficiency, and the safe and effective use of milk and other animal products, while prioritizing animal welfare.

Focus: Enhance animal health, well-being, and production systems to support a resilient, efficient, and trusted food supply.

Critical Issue Additional Information: Development and Engagement of Communities

Vermont is a small state, with an economy that has been historically driven by agriculture. In the 21st century, Vermont finds itself in a difficult spot. It ranks 34th in per capita GDP and ranks second for the oldest population. Most of the state's 251 towns and cities are rural, characterized by geographic isolation, low-density settlement patterns, dependence on agriculture, continued population loss, and all too often, economic distress.

Internet-based technologies such as telehealth services, online education, precision agriculture technologies, and e-finance bring with them the promise to improve health and productivity of individuals and their communities. As social scientists, farmers, agriculture scientists, medical practitioners, and policymakers explore the use of internet-based technologies and solutions for increasing productivity and resilience, understanding the peculiarities of Vermont (VT) that impact broadband access will be a crucial first step.

Currently, housing is a national concern in the U.S., and Vermont is not immune to the housing crisis. The Vermont Housing Finance Agency estimates that Vermont needs to build 30,000 to 40,000 additional year-round homes by 2030 to meet housing demand. Our communities have long known that they must find common cause and share resources to advance their well-being. Tough economic realities, severe challenges to the agricultural economy (particularly dairy, which is 75% of the sector), and a dispersed and aging population make this increasingly difficult.

Communities must identify their assets and address their challenges. By learning the skills of effective leadership, how to develop the capacity to get things done, and the importance of ensuring a variety of voices are engaged, together we can create community solutions that are comprehensive and serve the public good.

Focus: Engage with communities to support leadership development, capacity building, and decision-making.

Critical Issue Additional Information: Foundational and Exploratory Research in Agriculture

Agricultural systems face increasing uncertainty driven by weather variability, shifting economic conditions, and rapidly emerging opportunities and challenges. A critical need exists for a strong foundation of scientific knowledge to inform decision-making, enable effective adaptation, and sustain long-term agricultural productivity and resilience. Without continued advancement of basic life sciences, the capacity to respond to these dynamics is limited. Strengthening this foundational knowledge base supports the ability to anticipate change, guide innovation, and maintain the vitality and competitiveness of agricultural systems.

Focus: Advance foundational scientific knowledge to strengthen agriculture's capacity to adapt, innovate, and sustain long-term resilience.

Critical Issue Additional Information: Long-term Viability of Vermont Agriculture, Food and Forests

Vermont's agriculture, food, and forest sectors are foundational to the state's rural economy, working landscape, and cultural identity. According to the USDA Census of Agriculture, Vermont's agricultural sector is the largest in New England, with dairy and maple production playing dominant roles. However, persistent low milk prices and broader structural changes in national and global markets continue to erode the financial stability of the dairy industry, contributing to farm loss and consolidation.

At the same time, Vermont's working lands are undergoing a broader economic transition. As the number of dairy farms declines, diversified operations (including specialty crops, vegetables, beef-on-dairy, and grassfed livestock systems) are expanding. These farms increasingly rely on value-added products, agritourism, and innovative business models to remain viable. While Vermont has gained national recognition for leadership in small- and mid-scale, place-based food systems, these operations often face challenges in accessing capital, labor, technology, and markets at a scale that supports long-term success.

Ensuring long-term viability requires strengthening business management capacity, workforce development, and succession planning. Many enterprises face both immediate cash flow constraints and long-term profitability challenges, while an aging operator population increases the urgency of successful transitions to the next generation. Research and Extension support in financial management, strategic planning, and intergenerational transfer remains critical to sustaining working lands and rural economies.

Market access and supply chain limitations further shape viability. Initiatives such as the New England Feeding New England partnership highlight the importance of regional coordination to connect producers with markets, strengthen aggregation and distribution systems, and support more resilient regional food networks. These efforts are particularly important in Vermont, where many producers operate at smaller scales and require innovative pathways to remain competitive.

Producers also face evolving production challenges, including weather-related disruptions, pest and disease pressures, and changing regulatory requirements. Addressing these challenges requires applied research and technical assistance that help farms and forest enterprises maintain productivity and manage risk while remaining economically viable.

Emerging technologies, including artificial intelligence (AI), offer new opportunities to improve efficiency and decision-making. However, disparities in technology access and adoption pose risks for Vermont's predominantly small-scale farms. Supporting equitable access to innovation through applied research, education, and technical assistance, will be essential to ensuring that technological advancements strengthen, rather than widen, gaps in farm and forest viability.

Vermont's forest sector also plays a critical role in the state's economy, supporting jobs, forest products industries, and rural communities. However, it faces ongoing challenges, including workforce shortages, land use pressures, and an aging ownership base. Strengthening this sector requires continued investment in workforce development, active management, and market opportunities for forest products.

Addressing this critical issue requires coordinated research and Extension efforts that support business viability, strengthen market systems, improve workforce and management capacity, and expand access to innovation. These efforts align with USDA NIFA priorities in agricultural sustainability, rural prosperity, and food system resilience.

Focus: Improve the financial and environmental viability, resilience, and adaptive capacity of Vermont's agriculture, food, and forest sectors.

Critical Issue Additional Information: Nutritional Value, Food Security and Food Safety

Food systems face persistent challenges related to nutrition, food security, and food safety that directly impact human health and well-being. Issues such as diet-related disease, unequal access to safe and nutritious foods, and vulnerabilities in the food supply threaten both individual and population health, as well as economic and social stability. Addressing these challenges requires strengthening the capacity to ensure a safe, accessible, and nutritionally adequate food supply, while supporting informed, science-based decision-making. Enhancing the availability, acceptability, and effective use of food is essential to improving health outcomes and meeting food security needs at local, national, and global levels.

Focus: Ensure all Vermonters have access to safe, nutritious, and affordable food that supports lifelong health and well-being.

Critical Issue Additional Information: Quality of the Natural Environment

Vermont's natural environment is a foundational asset for key industries such as agriculture, forestry, and tourism. Maintaining the productivity and resilience of our land and water resources requires ongoing investment in research, innovation, and community engagement. By supporting informed stewardship, we ensure these resources continue to drive economic opportunity and quality of life for all Vermonters.

The natural environment is also key to the quality of life for Vermonters in a broader context. The impacts of extreme heat, cold, precipitation, and drought include more frequent and more intense weather events such as summer flooding in 2023 and 2024, a statewide drought in 2025, and changes in average annual temperatures. These impacts directly affect the welfare, public health, and financial well-being of Vermonters. Hence, attention to long-term solutions, grounded in research and education about extreme weather mitigation, will lead to greater security for all the state's residents.

Finally, Vermont is blessed with a unique natural heritage, which is as unperturbed as that of any state in the region. Our forest and lake ecosystems harbor resources with potential value to public health and human enterprise that remain completely unknown, awaiting discovery through future inquiry. We promote responsible stewardship of natural resources to ensure they contribute to both environmental quality and economic prosperity.

Focus: Integrate business and conservation to improve the quality of the natural environment where Vermonters live, work, and play.

Critical Issue Additional Information: Resilience of Families and Individuals

Geographic isolation, low-density settlement patterns, dependence on agriculture, continued population loss, and economic distress all characterize Vermont's rural communities. According to a 2022 UVM study, two in five people in Vermont experienced food insecurity in the last year. Impoverished individuals and families, who experience the greatest risks related to health, housing, and food, have the least capacity to recover from shocks to their financial security.

Although considerable research and policy attention has focused on problems associated with substance use and abuse in urban settings, studies show that rural youth also are at risk for early onset of substance use and its associated negative consequences. Providing youth with opportunities to build connections to neighbors, schools, community organizations, or activities that support healthy behaviors is central to helping them build a sense of belonging, a necessary ingredient for resilience.

Building that connection is even more critical, however, with a declining population. According to [Advance Vermont](#), as of 2021, only 59% of Vermont's working-age population (ages 25-64) holds a credential of value. Vermonters need to be competent in both life and job skills to be successful and economically stable, yet Vermont has not yet taken significant steps to increase the educational level of its youngest adults.

Focus: Increase the resilience of families and individuals around health, education, and personal and family well-being.

Merit and Scientific Peer Review Process

CALS ADVISORY BOARD

To gain insights from industry leaders, elected officials, students, and Vermonters, the CALS Dean has appointed an advisory board, whose members usually serve three-year terms. The board reviews the college's Strategic Plan and specific programs and initiatives, shares current industry needs, and provides insight on future trends within agriculture and life sciences. The CALS Advisory Board meets twice a year and is an invaluable source of counsel to the Dean, AES, and Extension.

VERMONT AGRICULTURAL EXPERIMENT STATION

Hatch and Hatch Multistate projects provide AES with seed funding and salary support for faculty, staff and graduate students, enabling researchers to initiate and sustain programs and compete for additional extramural funding. CALS uses a peer review process to evaluate proposals based on: 1) the significance of the work in addressing critical issues; 2) scientific and technical feasibility; 3) evidence of past progress and potential for securing extramural support; and 4) scholarly productivity and innovation. Proposals deemed meritorious advance through the USDA NIFA approval process.

In 2026, the CALS Dean convened a task force of AES and Extension representatives to evaluate this approach and develop recommendations for future fund allocations. As a result, updates to the merit review process are anticipated.

UVM EXTENSION

Extension's programmatic investment primarily consists of long-term, foundational funding for faculty and staff across program areas: Capable Communities; Healthy Families; Natural Environment; and Agriculture, Food, and Forests.

Faculty positions are established to address sustained, cross-cutting community issues, with programs leveraging this investment through grants and other funding sources. Program delivery frequently includes additional personnel to support teams. As a result, merit review relies on long-term relationships, advisory structures, and programmatic frameworks. Investments such as 4-H and the Extension Master Gardener Program illustrate nationally connected programs with strong local impact.

Programmatic Direction and Alignment

UVM Extension's programmatic direction is guided by accountability systems, including the Program and Policy Leadership Team (PPLT), Program Area Teams (PATs), the Program Evaluation and Reporting System (PEARS), and Faculty Workload Planning and Review, along with ongoing needs assessment and coordination with CALS leadership.

Program and Policy Leadership Team

The PPLT serves as an internal advisory body to Extension leadership, aiding planning, decision-making, and alignment with community needs, funding, and organizational strategy. It collaborates with CALS leadership on long-term planning, provides program oversight, advises on policies and resource allocation, engages stakeholders, and assesses risks related to compliance and best practices.

Program Area Teams

PATs exist as a framework for Extension's broad and varied work to be organized and coordinated in alignment with our four active programs in NRS:

- Healthy Families
- Capable Communities
- Agriculture, Food and Forests
- Natural Environment

PATs are intended to promote collaboration among program teams, utilizing their specialized expertise to identify cross-program synergies that address community needs aligned with our mission. The following examples illustrate activities PATs may undertake. They may: identify existing educational and operational programs, activities, and funding within the PAT; assess gaps, emerging needs, and factors that may inform program adaptation, expansion, or sunseting; establish PAT-level goals and metrics to evaluate effectiveness, quality, reach, and impact; and align program and activity-level planning, evaluation, and reporting with those goals. In addition to the structures described above, Extension continues to rely on the program development and accountability systems below to ensure continued alignment with our goals.

Program Evaluation and Reporting System

UVM Extension faculty and staff use PEARS to develop program Action Plans. Based on the logic model, plans describe the needs the program aims to address, as well as the activities, audiences, and intended outcomes.

Plans ensure alignment with organizational priorities and are reviewed annually in PEARS.

Faculty Workload Planning and Review

Extension Faculty submit annual reports of professional activities (ARPA) and workload plans (WLP), which inform performance reviews and guide program direction. Together, these systems support responsiveness to current and emerging needs.

STATE-LEVEL ASSESSMENT

Needs assessments have traditionally been conducted at the program level, resulting in strong responsiveness but variable consistency. To address this, UVM Extension initiated the Vermont Assessment of Assets, Angles, and Needs (VAAAN), funded by the UVM Leahy Institute for Rural Partnerships.

This two-year project uses a mixed-methods approach to identify needs beyond Extension, CALS, or UVM, with the goal of informing partners and fostering collaboration. The approach includes the analysis of public meeting data, literature review, and engagement of advisory committees representing community and institutional perspectives.

Outputs include a refined set of themes and a public-facing dashboard to share results. Following Phase I (December 2026), Extension will use findings to assess state needs and align programming. Phase II will focus on outreach, collaboration, and application. The project also serves as a model for statewide needs assessment, with plans for publication to support replication in other states.

Stakeholder Input

Actions to seek stakeholder input that encourage their participation

Stakeholder input involves multiple, layered approaches in support of highly responsive and localized relationships that blend with shared and coordinated strategic planning.

Advisory Boards

Our applied research is informed by the partners with whom we collaborate, including representatives from local, regional, and state government and non-governmental organizations. To gain insight from industry leaders, elected officials, students, and Vermonters, the Dean of the College of Agriculture and Life Sciences (CALS) appoints an advisory board, which provides feedback and advice. Additionally, many UVM Extension programs have advisory committees that provide a sounding board and input on current issues and help prioritize programmatic direction. We are in the process of establishing advisory boards for our AES facilities. This input helps in all aspects of programming, including delivery method, outreach, and content.

Localized Relationships

Faculty and staff working in AES and Extension benefit from high-trust, long-term community relationships. Partnerships with communities, public and private organizations, and businesses are important to reaching and serving clients with appropriate programming. At the most local level, stakeholder input can take the

form of a one-on-one conversation, a phone call, text message, or email from a stakeholder expressing a need, appreciation for work being done, or posing a question that could be the seed for a multi-year research project. These relationships remain a critical part of identifying needs and gaps for Extension programming and AES research.

Needs Assessments

Program teams within CALS often conduct needs assessments and planning based on aggregate experiences stemming from localized relationships. Sometimes this reveals a need for more investment in forming institutional partnerships to bring other skills or resources to an issue. Sometimes it may inform a concept for a grant proposal that leverages capacity funds for deeper or more focused work.

As noted above, Extension is leading a statewide assessment of assets, angles, and needs which is designed to be a living and evolving summary of needs in the state, which can continue to inform the work of CALS through AES and Extension.

Strategic Planning

UVM initiated a university-wide strategic plan process in the fall of 2025. This process emphasized meaningful input through both digital and interpersonal communication to support constructive progress. In alignment with UVM's "Our Common Ground" values and a commitment to transparency, a survey was one of several ways to collect insights, ideas, and reflections from students, faculty, staff, alumni, and community partners.

CALS is in the midst of a strategic alignment process informed by the UVM Strategic Plan, faculty and staff articulation of need, and CALS Board of Advisors review. The outcome of this process will be a CALS-specific strategic plan.

Methods to identify individuals and groups

The CALS Dean, Associate Dean of Research, Director of the AES, and the Director of Extension look at a wide range of expertise when appointing individuals to the CALS Advisory Board. They consider those who have experience in forestry and agriculture supply chains, state legislation, research, finance, and marketing, to name a few. The Extension Advisory Committee is a subset of this larger board and meets a minimum of two times a year. Our current board members can be found on the CALS website at <https://www.uvm.edu/cals/board-advisors>.

CALS faculty and staff identify logical external partners who work closely with their programs and areas of research. Extension program participants are engaged in developing future programs through on-site data collection feedback tools. This includes, but is not limited to, comprehensive needs assessments, focus groups, and surveys.

In a small state, relationships are critical in accessing key individuals with knowledge of current relevant issues for Vermonters. For example, ongoing and regular participation in the Vermont Agricultural Water Quality Partnership (VAWQP) helps us identify and gain access to key partners. Extension faculty also actively participate in the three farmer-led watershed alliances in the state.

EXT and AES work closely with the Leahy Institute for Rural Partnerships (LIRP) and the Office of Engagement

(OoE) to strengthen relationships with communities and organizations. OoE helps us identify challenges, particularly with rural audiences, that Extension and research can help address. LIRP provides additional resources to address rural decline and enables re-engagement with rural citizens in the development of business and livelihood initiatives. Extension provides the necessary partnership building essential to the Institute's goals.

Additional stakeholders currently include leaders from the Vermont League of Cities and Towns; Vermont Agency of Agriculture, Food, and Markets; USDA Rural Development; USDA Farm Service Agency; Vermont Farm Bureau; Vermont Farm to Plate Network; representatives from all three Congressional offices; and other organizations as available or interested.

Methods for collecting stakeholder input

By virtue of the nature of connections between and among Extension, AES, and our communities, we capitalize on opportunities to collect stakeholder input that informs our research, outreach, and extension endeavors. Individuals on the CALS Advisory Board provide information on future trends in agriculture and life sciences. We collect stakeholder input from professional stakeholder groups through targeted focus groups, surveys, and networking events.

UVM Extension and AES engage partners and stakeholders at multiple stages in the design and delivery of their research and outreach programs. Stakeholder activities include facilitating ongoing stakeholder groups (e.g., farmer-led watershed coalitions); program-level advisory groups; inviting stakeholders to programmatic meetings; conducting surveys and evaluations to assess output and impact; collaborative relationships with individuals at partner organizations; and presentations to the Vermont House and Senate Agriculture Committees.

A statement of how the input will be considered

We consider identified trends, issues, and new developments to create and refine research focus and education programs that serve the needs of Vermont's economy, environment, and communities. This may result in the pursuit of new research and outreach topics, changes to the content of research and Extension programs, and/or changes to how information is disseminated. These methodologies are prioritized, and resources are allocated, considering AES and Extension expertise and available funding. We have also used the new Northeast Agenda from NERA (Northeastern Regional Association) and NEED (Northeast Extension Directors) to help guide our strategy for better integration of AES and Extension in Vermont.

Critical Issues

Active

Animal Health, Production, and Products

Initiated on: 11/26/2019

Last Updated: 2026

Term Length: Long-term (>5 years)

Animal health, production, and product systems face ongoing challenges related to disease, efficiency, animal well-being, and the quality and utilization of animal-derived products. These issues affect agricultural sustainability, economic viability, food security, and public trust. Addressing them requires advances in areas such as disease prevention and biosecurity, animal nutrition and physiology, genomic improvement, production efficiency, and the safe and effective use of milk and other animal products, while prioritizing animal welfare.

Focus: Enhance animal health, well-being, and production systems to support a resilient, efficient, and trusted food supply.

Science Emphasis Areas: Food Safety, Sustainable Agricultural Production Systems

Research Projects: 5

Extension Programs: 0

Active

Development and Engagement of Communities

Last Updated: 2026

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Vermont is a small state, with an economy that has been historically driven by agriculture. In the 21st century, Vermont finds itself in a difficult spot. It ranks 34th in per capita GDP and ranks second for the oldest population. Most of the state's 251 towns and cities are rural, characterized by geographic isolation, low-density settlement patterns, dependence on agriculture, continued population loss, and all too often, economic distress.

Internet-based technologies such as telehealth services, online education, precision agriculture technologies, and e-finance bring with them the promise to improve health and productivity of individuals and their communities. As social scientists, farmers, agriculture scientists, medical practitioners, and policymakers explore the use of internet-based technologies and solutions for increasing productivity and resilience, understanding the peculiarities of

Vermont (VT) that impact broadband access will be a crucial first step.

Currently, housing is a national concern in the U.S., and Vermont is not immune to the housing crisis. The Vermont Housing Finance Agency estimates that Vermont needs to build 30,000 to 40,000 additional year-round homes by 2030 to meet housing demand. Our communities have long known that they must find common cause and share resources to advance their well-being. Tough economic realities, severe challenges to the agricultural economy (particularly dairy, which is 75% of the sector), and a dispersed and aging population make this increasingly difficult.

Communities must identify their assets and address their challenges. By learning the skills of effective leadership, how to develop the capacity to get things done, and the importance of ensuring a variety of voices are engaged, together we can create community solutions that are comprehensive and serve the public good.

Focus: Engage with communities to support leadership development, capacity building, and decision-making.

Science Emphasis Areas: Education, Environmental Systems, Family & Consumer Sciences, Food Safety, Human Nutrition, Sustainable Agricultural Production Systems

Research Projects: 6

Extension Programs: 1

Active

Foundational and Exploratory Research in Agriculture

Last Updated: 2026

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Agricultural systems face increasing uncertainty driven by weather variability, shifting economic conditions, and rapidly emerging opportunities and challenges. A critical need exists for a strong foundation of scientific knowledge to inform decision-making, enable effective adaptation, and sustain long-term agricultural productivity and resilience. Without continued advancement of basic life sciences, the capacity to respond to these dynamics is limited.

Strengthening this foundational knowledge base supports the ability to anticipate change, guide innovation, and maintain the vitality and competitiveness of agricultural systems.

Focus: Advance foundational scientific knowledge to strengthen agriculture's capacity to adapt, innovate, and sustain long-term resilience.

Science Emphasis Areas: Bioeconomy, Bioenergy, and Bioproducts, Environmental Systems, Food Safety, Human Nutrition, Meteorology, Sustainable Agricultural Production Systems

Research Projects: 6

Extension Programs: 0

Active

Long-term Viability of Vermont Agriculture, Food and Forests

Last Updated:
2026

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Vermont's agriculture, food, and forest sectors are foundational to the state's rural economy, working landscape, and cultural identity. According to the USDA Census of Agriculture, Vermont's agricultural sector is the largest in New England, with dairy and maple production playing dominant roles. However, persistent low milk prices and broader structural changes in national and global markets continue to erode the financial stability of the dairy industry, contributing to farm loss and consolidation.

At the same time, Vermont's working lands are undergoing a broader economic transition. As the number of dairy farms declines, diversified operations (including specialty crops, vegetables, beef-on-dairy, and grassfed livestock systems) are expanding. These farms increasingly rely on value-added products, agritourism, and innovative business models to remain viable. While Vermont has gained national recognition for leadership in small- and mid-scale, place-based food systems, these operations often face challenges in accessing capital, labor, technology, and markets at a scale that supports long-term success.

Ensuring long-term viability requires strengthening business management

capacity, workforce development, and succession planning. Many enterprises face both immediate cash flow constraints and long-term profitability challenges, while an aging operator population increases the urgency of successful transitions to the next generation. Research and Extension support in financial management, strategic planning, and intergenerational transfer remains critical to sustaining working lands and rural economies.

Market access and supply chain limitations further shape viability. Initiatives such as the New England Feeding New England partnership highlight the importance of regional coordination to connect producers with markets, strengthen aggregation and distribution systems, and support more resilient regional food networks. These efforts are particularly important in Vermont, where many producers operate at smaller scales and require innovative pathways to remain competitive.

Producers also face evolving production challenges, including weather-related disruptions, pest and disease pressures, and changing regulatory requirements. Addressing these challenges requires applied research and technical assistance that help farms and forest enterprises maintain productivity and manage risk while remaining economically viable.

Emerging technologies, including artificial intelligence (AI), offer new opportunities to improve efficiency and decision-making. However, disparities in technology access and adoption pose risks for Vermont's predominantly small-scale farms. Supporting equitable access to innovation through applied research, education, and technical assistance, will be essential to ensuring that technological advancements strengthen, rather than widen, gaps in farm and forest viability.

Vermont's forest sector also plays a critical role in the state's economy, supporting jobs, forest products industries, and rural communities. However, it faces ongoing challenges, including workforce shortages, land use pressures, and an aging ownership base. Strengthening this sector requires continued investment in workforce development, active management, and market opportunities for forest products.

Addressing this critical issue requires coordinated research and Extension efforts that support business viability, strengthen market systems, improve workforce and management capacity, and expand access to innovation. These efforts align with USDA NIFA priorities in agricultural sustainability, rural prosperity, and food system resilience.

Focus: Improve the financial and environmental viability, resilience, and adaptive capacity of Vermont's agriculture, food, and forest sectors.

Science Emphasis Areas: Bioeconomy, Bioenergy, and Bioproducts, Environmental Systems, Food Safety, Meteorology, Sustainable Agricultural Production Systems

Research Projects: 11

Extension Programs: 1

Active

Nutritional Value, Food Security and Food Safety

Last Updated: 2026

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Food systems face persistent challenges related to nutrition, food security, and food safety that directly impact human health and well-being. Issues such as diet-related disease, unequal access to safe and nutritious foods, and vulnerabilities in the food supply threaten both individual and population health, as well as economic and social stability. Addressing these challenges requires strengthening the capacity to ensure a safe, accessible, and nutritionally adequate food supply, while supporting informed, science-based decision-making. Enhancing the availability, acceptability, and effective use of food is essential to improving health outcomes and meeting food security needs at local, national, and global levels.

Focus: Ensure all Vermonters have access to safe, nutritious, and affordable food that supports lifelong health and well-being.

Science Emphasis Areas: Family & Consumer Sciences, Food Safety, Human Nutrition

Research Projects: 7

Extension Programs: 0

Active

Quality of the Natural Environment

Last Updated: 2026

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Vermont's natural environment is a foundational asset for key industries such as agriculture, forestry, and tourism. Maintaining the productivity and resilience of our land and water resources requires ongoing investment in research, innovation, and community engagement. By supporting informed stewardship, we ensure these resources continue to drive economic opportunity and quality of life for all Vermonters.

The natural environment is also key to the quality of life for Vermonters in a broader context. The impacts of extreme heat, cold, precipitation, and drought include more frequent and more intense weather events such as summer flooding in 2023 and 2024, a statewide drought in 2025, and changes in average annual temperatures. These impacts directly affect the welfare, public health, and financial well-being of Vermonters. Hence, attention to long-term solutions, grounded in research and education about extreme weather mitigation, will lead to greater security for all the state's residents.

Finally, Vermont is blessed with a unique natural heritage, which is as unperturbed as that of any state in the region. Our forest and lake ecosystems harbor resources with potential value to public health and human enterprise that remain completely unknown, awaiting discovery through future inquiry. We promote responsible stewardship of natural resources to ensure they contribute to both environmental quality and economic prosperity.

Focus: Integrate business and conservation to improve the quality of the natural environment where Vermonters live, work, and play.

Science Emphasis Areas: Bioeconomy, Bioenergy, and Bioproducts, Environmental Systems, Meteorology, Sustainable Agricultural Production Systems

Research Projects: 4

Extension Programs: 1

Active

Resilience of Families and Individuals

Last Updated: 2026

Initiated on: 11/26/2019

Term Length: Long-term (>5 years)

Geographic isolation, low-density settlement patterns, dependence on agriculture, continued population loss, and economic distress all characterize Vermont's rural communities. According to a 2022 UVM study, two in five people in Vermont experienced food insecurity in the last year. Impoverished individuals and families, who experience the greatest risks related to health, housing, and food, have the least capacity to recover from shocks to their financial security.

Although considerable research and policy attention has focused on problems associated with substance use and abuse in urban settings, studies show that rural youth also are at risk for early onset of substance use and its associated negative consequences. Providing youth with opportunities to build connections to neighbors, schools, community organizations, or activities that support healthy behaviors is central to helping them build a sense of belonging, a necessary ingredient for resilience.

Building that connection is even more critical, however, with a declining population. According to [Advance Vermont](#), as of 2021, only 59% of Vermont's working-age population (ages 25-64) holds a credential of value. Vermonters need to be competent in both life and job skills to be successful and economically stable, yet Vermont has not yet taken significant steps to increase the educational level of its youngest adults.

Focus: Increase the resilience of families and individuals around health, education, and personal and family well-being.

Science Emphasis Areas: Education, Family & Consumer Sciences, Human Nutrition, Youth Development

Research Projects: 0

Extension Programs: 1

