



Agricultural Literacy: *Farm and Food Education in Vermont and Beyond*

farm **to** *plate*

A Project of the Farm to Plate Agricultural Literacy Priority Strategy Team. Prepared by Shea Brams.



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PART I. Literature Review

To better understand research into agricultural literacy among the general public and school-aged children in the U.S. and Vermont. To identify trends and patterns, themes, or gaps within existing research on agricultural literacy.

I. Overview

Agricultural literacy refers to an understanding of agriculture and its complexities. The phrase has been used to highlight the imperative of understanding agriculture for economic success, environmental sustainability, and food security. This literature review evaluates the evolving definitions of agricultural literacy in scholarly research. The review explores the relevant components and implications of agricultural literacy for the human relationship with the earth.

II. Evolving Definitions

The term “agricultural literacy” was coined in 1988 by the National Research Council (NRC) in its book *Understanding Agriculture; New Directions for Education*. The NRC claimed that “an agriculturally literate person would understand the food and fiber system and this would include its history and its current economic, social and environmental significance to all Americans.”¹ The NRC separated agricultural literacy from vocational agricultural education – Agricultural literacy was identified as education *about* agriculture while vocational agricultural education was identified as education *in* agriculture.

Other definitions of agricultural literacy have been proposed and cited since the 1990s. Martin Frick’s definition helped shape the Food and Fiber Systems Literacy standards²:

“Agricultural literacy can be defined as possessing knowledge and understanding of the food and fiber system. An individual possessing such knowledge would be able to

¹ *Understanding Agriculture: New Directions for Education*, National Research Council (1988), <https://nap.nationalacademies.org/catalog/766/understanding-agriculture-new-directions-for-education>

² Leising, J., Igo, C., et al, *A guide to Food & Fiber Systems Literacy: A compendium of standards, benchmarks, and instructional materials for grades K–12*, Oklahoma State University (1998)

synthesize, analyze, and communicate basic information about agriculture."³

Frick outlined 11 agricultural literacy subject areas for K-12 schools, including “Relationship with the Environment”, “Agricultural Processing”, “Public Policies”, “Relationship with Natural Resources”, “Animal Products”, “Societal Significance”, “Plant Products”, “Economic Impact”, “Agriculture Marketing”, “Distribution”, and “Global Significance”. Frick claimed that incorporating agricultural literacy initiatives early in life would help citizens’ decision- making about their health, their environment, and their future.

As society becomes increasingly globalized, urbanized, and technology-centric, personal connections to agriculture and food systems are challenged. Thus, individuals may not possess the level of agricultural literacy required to make informed consumer choices regarding consumption, or the ability to decipher misleading information from accurate literature about the agricultural industry.⁴ Definitions of agricultural literacy expanded over the period from 1990 to 2020, further emphasizing the tie between increased agricultural literacy and personal decision making, participation in civic and cultural affairs, and economic productivity.^{5,6,7} A review of studies from 2000-2022 indicated that definitions have evolved from a knowledge of limited aspects of agriculture to a measure of a “deeper understanding of the economic, social, science and technology aspects of the industry coupled with the ability to synthesize and communicate such knowledge.”⁸ An understanding of beliefs and values are included in agricultural literacy, as

³ Frick, M. J, *A definition and the concepts of agricultural literacy: A national study*, Iowa State University, Ames (1990), <https://www.proquest.com/docview/303867817?pq-origsite=gscholar&fromopenview=true>

⁴ David Chapman, & Dave Lindner, *Teacher perception of the Georgia middle school agricultural education curriculum*, American Association of Agricultural Education, Proceedings of the Southern Region Conference, pp. 95-109 (2018), https://etd.auburn.edu/bitstream/handle/10415/6002/David_Chapman_Dissertation.pdf?sequence=2

⁵ Kristin Kovar, & Anna L. Ball, *Two Decades of Agricultural Literacy Research: A Synthesis of Literature*, Journal of Agricultural Education, 54(1), 167-178. (2013), <https://files.eric.ed.gov/fulltext/EJ1122296.pdf>

⁶ Deanna Meischen, & Cary Trexler, *Rural Elementary Students' Understandings of Science and Agricultural Education Benchmarks Related to Meat and Livestock*, Journal of Agricultural Education, 44(1), 43-55 (2003), https://www.researchgate.net/publication/254545424_Rural_Elementary_Students%27_Understandings_Of_Agricultural_And_Science_Education_Benchmarks_Related_To_Meat_And_Livestock

⁷ David Powell, David Agnew, & Cary Trexler, *Agricultural Literacy: Clarifying a Vision for Practical Application*, Journal of Agricultural Education, 49(1), 85-98 (2008), <https://eric.ed.gov/?id=EJ839874>

⁸ Amy Cosby et al, *New Decade, Same Concerns: A Systematic Review of Agricultural Literacy of School Students*, Education Sciences 12, no. 4:235 (2022), <https://doi.org/10.3390/educsci12040235>

an agriculturally literate person would be able to “a) engage in social conversation, b) evaluate the validity of media, c) identify local, national, and international issues, and d) pose and evaluate arguments based on scientific evidence.”⁹ Given their critical awareness of agricultural systems and implications, an agriculturally literate person can “evaluate ‘trade-offs’” relating to agricultural businesses, individuals, and society, thus making “value judgments about the impact of agriculture as an economic and environmental activity and the concurrent societal and political pressures that result from those judgments.”¹⁰ Definitions have evolved in the past several decades, but many still reference the 1988 NRC definition.

III. Measuring Agricultural Literacy

The tools and methods for measuring agricultural literacy have been widely disputed. It is important to distinguish measuring agricultural literacy for school-aged (K-12) youth from measuring agricultural literacy for the general public.

For primary and secondary school-aged (K-12) youth, measurement methods are primarily through age-based benchmarks. The [National Agricultural Learning Outcome](#) establishes benchmarks of knowledge for an agriculturally literate person at the end of a grade level band (K-2, 3-5, 6-8, 9-12), correlating to grade-level national standards. The NALOs are structured on five themes: “Agriculture and the Environment”, “Plants and Animals for Food, Fiber & Energy”, “Food, Health, and Lifestyle”, “Science, Technology, Engineering & Math”, and “Culture, Society, Economy and Geography”.¹¹ Each theme has specific outcome goals for each grade level, separated into three academic content areas: science, social studies, and health. The National Agricultural Learning Outcomes, or NALOs, are used in the U.S. as suggested benchmarks of agricultural knowledge and supported by the [Agricultural Literacy Curriculum Matrix](#) (ALCM) from [National Agricultural in the Classroom](#). The ALCM is a searchable online database with peer-

⁹ Deanna Meischen, & Cary Trexler, *Rural Elementary Students' Understandings of Science and Agricultural Education Benchmarks Related to Meat and Livestock*, *Journal of Agricultural Education*, 44(1), 43-55 (2003), https://www.researchgate.net/publication/254545424_Rural_Elementary_Students%27_Understandings_Of_Agricultural_And_Science_Education_Benchmarks_Related_To_Meat_And_Livestock

¹⁰ David Powell, David Agnew, & Cary Trexler, *Agricultural Literacy: Clarifying a Vision for Practical Application*, *Journal of Agricultural Education*, 49(1), 85-98 (2008), <https://eric.ed.gov/?id=EJ839874>

¹¹ Debra Spielmaker, & James Leising, *National Agricultural Literacy Outcomes*, National Agriculture in the Classroom (2013), <https://cdn.agclassroom.org/nat/data/get/NALObooklet.pdf>

reviewed lesson plans supporting agricultural literacy. Resources in the ALCM align with the NALO academic content areas. Additional suggested benchmarks of measurement exist, such as the [Pillars of Agricultural Literacy Packet](#) created by the [American Farm Bureau Foundation for Agriculture](#). Similar to the NALOs, the Pillars Packet works from early childhood to early adulthood with increasing complexity; levels develop from “Awareness”, “Discovery”, “Knowledge-Building”, “Analysis”, and “Informed Consumers and Voters.”¹² These K-12 educational benchmarks encourage complex understandings of agriculture and its relationship to society. However, while these benchmarks are nationally recognized, they are not enforced through testing at the state or national level.

For the general public, there are no agreed upon methods or indicators for agricultural literacy measurement. Suggestions for direct methods, such as “A National Survey of Agricultural Literacy”, using [USDA’s National Agricultural Statistics Service](#), could help understand gaps in agricultural literacy for the general public.¹³

IV. National Players

The term “agricultural literacy” is most often used by academics, educators, and policymakers invested in food security, farms’ economic and environmental resilience, and a sustained relationship between people and the environment. Several organizations focus primarily on providing resources, research, and learning tools to spread understanding and access to agricultural literacy, including the [National Center for Agricultural Literacy](#) and [National Agriculture in the Classroom](#). Divides exist among agricultural literacy initiatives, as national organizations such as [Growing a Nation](#) and [America's Heartland](#) have reputations of ties to more “neoliberal agendas.”¹⁴ The national non-profit organization, [4-H](#), has been monumental for

¹² *Pillars of Agricultural Literacy*, American Farm Bureau Foundation for Agriculture (2012), <https://www.agfoundation.org/files/PillarsPacketo62016.pdf>

¹³ Stephanie Mercier, *Food and Agricultural Education in the United States*, AGree: Transforming Food & Ag Policy (2015), <https://studylib.net/doc/18802049/food-and-agricultural-education-in-the-united-states>

¹⁴ Cori Brewster, *Toward a Critical Agricultural Literacy*, Reclaiming the Rural: Essays on Literacy, Rhetoric, and Pedagogy (2011), https://books.google.com/books?hl=en&lr=&id=nXfVOX2HFb4C&oi=fnd&pg=PA34&dq=info:789pcFAUIGcJ:scholar.google.com&ots=B2eoeHOtOO&sig=oM_BHfxHymM74cFrZdthMeGe4V8#v=onepage&q&f=false

developing youth agricultural education spaces around the country. 4-H is administered by the United States Department of Agriculture, with its original motives based on farming and farm-homemaking youth development. 4-H has evolved to expand its programs to involve STEM, Environmental Science, Civic Engagement, and Healthy Living. General agricultural awareness and literacy initiatives existing in the U.S. include radio broadcasts, social events, fairs, conventions, advertisements, public lectures, school curricula, TV programs, websites, agritourism, social media, advocacy, and nonprofit work.

V. Future Recommendations

Scholarly research suggests several methods for improving agricultural literacy, primarily focused on clarified vocabulary and widespread curriculum expansion..

For communication, it is important for professionals, agriculturalists, and people doing work in the food system to be clear on the meaning of agricultural literacy, and the distinction between “agricultural literacy” and “agriculturally literate.”¹⁵ Clarity among leaders will better inform the public and prevent misunderstandings about the agricultural industry, agricultural science and social aspects of agriculture.¹⁶ Further, reevaluation of agricultural policy and rhetoric is important, as students and the public are “raced, gendered, faithed, and classed by agricultural policies, practices, and groups”; agricultural rhetoric and communication shapes relationships among the general public, farm owners, farm workers, farming communities, and food.¹⁷

Expansion of agricultural education into school curriculums is recommended for agricultural literacy improvement for both school-aged (K-12) youth and the general public, under the assumption that a majority of people undergo formal education. Integration of agricultural

¹⁵ Chris Clemons, et al, *Spanning the Gap: The Confluence of Agricultural Literacy and Being Agriculturally Literate*, Journal of Agricultural Education, vol. 59, no. 4, pp. 238–52, ERIC (2018), <https://eric.ed.gov/?id=EJ1200341>.

¹⁶ David Chapman, & Dave Lindner, *Teacher perception of the Georgia middle school agricultural education curriculum*, American Association of Agricultural Education, Proceedings of the Southern Region Conference, pp. 95-109 (2018), https://etd.auburn.edu/bitstream/handle/10415/6002/David_Chapman_Dissertation.pdf?sequence=2

¹⁷ Cori Brewster, *Toward a Critical Agricultural Literacy*, Reclaiming the Rural: Essays on Literacy, Rhetoric, and Pedagogy (2011), https://books.google.com/books?hl=en&lr=&id=nXFVQX2HFb4C&oi=fnd&pg=PA34&dq=info:789pcFAUIGcJ:scholar.google.com&ots=B2eoeHOtOO&sig=oM_BHfxHymM74cFrZdthMeGe4V8#v=onepage&q&f=false

education and existing school subjects is suggested (Cosby et al 2022, Mercier 2015, NRC 1988, Hess and Trexler 2011). This integration and connection across multiple subjects, such as economics, geography, and other STEM classes, will strengthen complex systems thinking for students¹⁸ and connect with more students across disciplines.^{19 20} While agricultural literacy is gained through formal and informal experiences, formal agricultural education from schools is vital for students to “understand the full process, overcome negative perceptions and stereotypes, and encourage participation.”²¹ Agricultural education should also be increased for metropolitan schools to increase interest in agriculture careers and connect people with the food system.²² Everyone, regardless of age, interest, or geographic location, should be exposed to, and grappling with, agricultural education. Currently, curriculum expansion and integration is not mandated; however recent science education reform documents, including the [A Framework for K-12 Science Education](#), [Next Generation Science Standards](#), and [Excellence in Environmental Education – Guidelines for Learning](#), have reintroduced agriculture in school curricula to encourage conscientious citizenry and lifelong learners who understand interdisciplinary concepts related to agriculture.

The next section of this report describes the context, initiatives, and implications of agricultural literacy in Vermont.

¹⁸ Alexander Hess, & Cary Trexler, *A Qualitative Study of Agricultural Literacy in Urban Youth: Understanding for Democratic Participation in Renewing the Agri-Food System*, Journal of Agricultural Education, v52 n2 p151-162 (2011), <https://eric.ed.gov/?id=EJ955704>

¹⁹ Stephanie Mercier, *Food and Agricultural Education in the United States*, AGree: Transforming Food & Ag Policy (2015), <https://studylib.net/doc/18802049/food-and-agricultural-education-in-the-united-states>

²⁰ *Understanding Agriculture: New Directions for Education*, National Research Council (1988), <https://nap.nationalacademies.org/catalog/766/understanding-agriculture-new-directions-for-education>

²¹ Amy Cosby et al, *New Decade, Same Concerns: A Systematic Review of Agricultural Literacy of School Students*, Education Sciences 12, no. 4:235 (2022), <https://doi.org/10.3390/educsci12040235>

²² Stephanie Mercier, *Food and Agricultural Education in the United States*, AGree: Transforming Food & Ag Policy (2015), <https://studylib.net/doc/18802049/food-and-agricultural-education-in-the-united-states>

Part II. Agricultural Literacy in Vermont

I. Project Overview

Part Two of this report outlines agricultural literacy in the context of the state of Vermont. This part is based on 26 semi-structured, ~45 minute interviews with Vermont educators, government officials, farmers, and community members whose professional work and personal motives are related to agriculture, food systems, and land. Interviews occurred during June, July, and August 2023, and were recorded and reviewed for themes. Additional information about the interview guide and interviewees' background can be found in the Appendix.

II. Vermont Context

As people seek to understand their food system, agricultural literacy becomes an important concept. However, the agricultural literacy of individuals can vary by geographic, socioeconomic, and political background. Variations in the level and content for agricultural literacy are considerable.

Vermont is a small New England state with approximately 647,000 residents in 256 municipalities, as of 2021²³. Many interviewees conjectured that Vermont agricultural literacy was likely higher than that of the average American.. They pointed to Vermont's small scale farms, resident proximity to farms, historical farming brand, and community-driven culture as reasons for higher agricultural literacy. Erin Buckwalter, engagement director of Northeast Organic Farming Association of Vermont (NOFA-VT), indicated that high resident proximity and exposure to farms was exemplified by Vermont children riding past farms and fields every day on the school bus. Increased proximity and exposure could increase awareness and understanding of farm systems and their importance. According to the 2017 census of agriculture, 19%²⁴ of Vermont land is farmland, which is comparable or less than other states. However, Vermont is the sixth smallest

²³ *QuickFacts Vermont*, U.S. Census Bureau (2022), <https://www.census.gov/quickfacts/fact/table/VT/PST045222>.

²⁴ *2017 Census of Agriculture, Vermont State Profile*, USDA (2017), https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Vermont/cp99050.pdf.

U.S. state geographically and the second least populated U.S. state. So while Vermont is not necessarily a leader in relative farmland area, the State's small size strengthens its community-centered culture, which has supported its high number of agricultural literacy initiatives. As of the 2022 U.S. census, 80% of Americans live in urban areas, while in Vermont, 64.9% of the population lives in rural areas²⁵. The beautiful, rural landscape of the State embeds connection to the land as central to Vermont culture. Vermont's small-scale farms and high levels of rurality increase its potential for farm accessibility and agritourism. Vermont has historically regarded itself as a rural and farm-based region and has consciously driven its brand as rural and agricultural. Similarly, Vermont's reputation as maintaining strong local food networks strengthens its leadership in local food initiatives. Its leadership in local food and agricultural literacy initiatives have encouraged neighboring states to follow its lead. Cynthia Greene, the Farm to Early Childhood Partnership Coordinator for Shelburne Farms, believes that Vermont's small size strengthens its leadership: *"Vermont is potentially in an interesting position where, because we're so small, we could actually be the pilot or test spot that acts like a tiny rural county in another very large state."*

Individuals' agricultural literacy can be "place-specific" based on people's interactions with and views of the type of agriculture with which they are familiar. For Vermont, the content of said literacy may be more diversified due to Vermont's diverse agriculture sector, and Vermont's changing seasons affect farming and crops. Additionally, challenges for farmers can vary by place based on specific elements of climate change, such as warming temperature and extreme precipitation.

Some agricultural literacy content is nonspecific to place, such as general information and understandings of how food production and food systems work. Additionally, certain life skills relating to food and agriculture are relevant to everyone, including cooking, understanding nutrition, and growing a home garden. Some interviewees suggested that agricultural literacy for

²⁵ Kristina Barrett, *Nation's Urban and Rural Populations Shift Following 2020 Census*, US Census Bureau (2022), <https://www.census.gov/newsroom/press-releases/2022/urban-rural-populations.html#:~:text=Vermont%20was%20the%20most%20rural,population%20residing%20in%20rural%20areas>.

everyone, regardless of place, should include certain political implications of the broad American food system, such as its deep reliance on immigrants.

III. Vermont Stakeholders

The primary groups in Vermont interested in agricultural literacy are food system professionals, such as primary, secondary, and post-secondary educators, farm owners, farmers, and agritourism advocates. For school-aged youth, almost all interviewees highlighted the work of [Vermont Farm to School and Early Childhood Network](#) as leaders in agricultural literacy, as well as [Vermont FEED](#) (Food Education Every Day), a Farm to School project of Northeast Organic Farming Association of Vermont and Shelburne Farms. [4-H and Youth](#) is another major stakeholder driving Vermont youth education in food systems, reaching thousands of youth every year with [Youth Farm Safety](#) and other programs exposing students to agriculture. Certain government officials are also interested in agricultural literacy and its influence on children, whose future consumer behavior may be impacted by their agricultural literacy. In 2015, Vermont Secretary of Agriculture, Chuck Ross, drove his support for agricultural literacy initiatives:

“Farm to School programs are a vital tool we can use to promote agricultural literacy in schools so that, from an early age, students understand the value of nutrition, develop healthy eating habits, and appreciate where their food comes from.”²⁶

The [Vermont Farm to Plate](#) Network is a central player for improving agricultural literacy in Vermont through its work to implement Vermont’s 15 Strategic Goals of Vermont’s 2021-2030 food system plan. Goals focus on “Sustainable Economic Development”, “Environmental Sustainability”, “Healthy Local Food for All Vermonters”, and “Racial Equity”, all of which are supported by increased agricultural literacy. The Network includes Vermont farms, food production businesses, specialty food producers, educational institutions, nonprofit organizations, capital providers, and government.

²⁶ Chuck Ross, *Vermont Partners*, National Farm to School Network, <https://docs.google.com/document/d/1WTvXUhbQObA85GD5brbRvbmb-R2aFb6z6SXh9o7ko70/edit>.

The Vermont Farm to Plate Network’s [Agricultural Literacy Priority Strategy Team](#) works to “support and expand existing farm and food education, programming, and convene partners and conduct research to: identify the distinct audiences and goals for various initiatives; determine what types of programming, experiences, or information result in greater levels of behavioral change for those audiences and initiatives; and strategically coordinate efforts.”²⁷ **The team was a strong contributor to this report by providing feedback on the process, the participants, and the content. They continue to support recommendations made within the report, and seek to strengthen the breadth and accessibility of agricultural literacy initiatives for all Vermonters.**

IV. Agricultural Literacy Definitions

Why Define Agricultural Literacy

The term agricultural literacy is used by select groups in Vermont, but there is no existing research on an agreed upon definition for the term. It is important to break down its definition, as understood by Vermont users of the term, to increase the efficacy of initiatives dedicated to expanding agricultural literacy. Further, it is important for professionals, agriculturalists, and people doing work for the food system to be clear on the meaning of agricultural literacy in order to better inform the public, because they are “the front line of explaining the industry, science, and social aspects of agriculture.”²⁸

Agricultural Literacy Definitions

When asked to define and explain agricultural literacy, every interviewee had a unique explanation. Many determined the phrase to be extremely broad, preventing no singular definition or view of it. Breaking it up was deemed important to make it manageable and accessible. The consensus among almost all interviewees was that agricultural literacy referred to consumers’ understanding of where one’s food comes from. Agricultural literacy deepens as individuals

²⁷ Food/Ag Literacy Priority Strategy Team, VT Farm to Plate, <https://www.vtfarmtoplate.com/network/foodag-literacy-priority-strategy-team>.

²⁸ David Chapman, & Dave Lindner, *Teacher perception of the Georgia middle school agricultural education curriculum*, American Association of Agricultural Education, Proceedings of the Southern Region Conference, pp. 95-109 (2018), https://etd.auburn.edu/bitstream/handle/10415/6002/David_Chapman_Dissertation.pdf?sequence=2

understand the how and why of food system processes and networks. Heidi Lynch, executive director of [Vermont Farmers Food Center](#), explained, *“Increasing food education and agricultural education leads to agricultural literacy in the same way that someone becomes literate after they are educated to read and write.”* While people may have exposure to farms, there is a pervasive lack of understanding about farms’ functioning role or challenges. Annie Harlow, local food system consultant, used a bus analogy to explain agricultural literacy: *“If you’re not on the agricultural literacy bus, you might drive by green fields, cows, or fruit and vegetable farms, but you’re not understanding, or getting information, about how those farms operate.”* The specifics of agricultural literacy content is dependent on age, background, income, and experience.

Place-based specifics are critical to agricultural literacy, as farming and food looks different in every place. Interviewees also cited producers as relevant to agricultural literacy in several ways. To begin, farmers’ knowledge about how to connect with and educate consumers about farms is a type of agricultural literacy, and drives the general public’s connection with food and farms. For example, [Northeast Organic Farming Association of Vermont](#) and [Healthy Roots Collaborative](#) support farmers to make their farm stands more accessible. Additionally, workforce development for producers, relating to education for farm careers, support producers’ agricultural literacy. Agricultural literacy should include wider topics than production, such as food access, security, food justice, and culinary school. As Christine Porcaro from Healthy Roots Collaborative explained, *“Farming is not just one thing. More people should have more ownership over all aspects of farming.”*

Popularity of the Term

When asked if they use the term “agricultural literacy”, 68% of interviewees said that they never use the term. Some interviewees who do not use the term were neutral to it. Lynch from [Vermont Farmers Food Center](#), reflected, *“I talk about and see this stuff every day, because I work at a farm and food nonprofit. I just don’t think of it in terms of agricultural literacy.”* Many interviewees who do not use the term voiced concerns with the term as confusing, unclear, and academic, and categorized by many as “jargon”. Betsy Rosenbluth, Farm to School Director at Shelburne Farms, identified that the term creates a feeling that one is “getting graded.” Lynch argued, *“We should*

keep agricultural literacy out of this academic, out of reach realm. We are participating in it one way or another every day, every one of us, even if we have really challenged capacity to think about food choices.” Interviewees who do use the term cited that they used it with certain groups and settings, specifically internally and with Farm to Plate. Those who use the term externally believed that the term legitimizes the value of food and farm education to policymakers or program officers, and formalizes the concept for academic papers and grants. Interviewees cited several alternatives for agricultural literacy, such as food literacy, consumer education, food education, nature-based learning, food systems awareness and knowledge, local food awareness.

V. Resources and Initiatives

Agricultural Literacy resources and initiatives in Vermont include anything that supports Vermonters’ understanding about food systems and farms. According to Lisa Chase, UVM extension professor and director of [Vermont Tourism Research Center](#), *“More than 98% of the people in the US do not work on a farm. And so anything that we're doing that's helping people understand agriculture and the whole food system, I would view as part of agricultural literacy.”* To understand agricultural literacy, Farm to Plate created briefs for K-12 children and the general public. To expand agricultural literacy, Vermont hosts a variety of initiatives, workshops, organizations, and educational tools to support experiential learning, agritourism, and career development. Specific Vermont and National based Agricultural Literacy resources and initiatives are in [Part III](#) of this report.

VI. Why Does Agricultural Literacy Matter?

Impacting Values

As individuals understand and learn more about something, their values related to that thing develop. Interviewees suggested that as agricultural literacy increases, people may value its role in their life and community more. Experiential opportunities that increase agricultural literacy are central to shaping values. Lynch suggested that experiential components dig into the *“spiritual piece, which governs how we do what we do everyday. Part of what moves people is that experience being together and sharing the celebration and understanding of food.”* However, all

agricultural literacy initiatives, experiential or not, may leave a mark on one's values. According to Abby Rhim, deputy director of the Vermont Workforce Development Board, *"With any sort of touch point, even if it's tiny, you get that level of exposure that sits with you and hopefully carries an impact on you."* Interviewees emphasized that school-aged initiatives to strengthen agricultural literacy will have stronger impacts on future values and priorities. Liz Kenton, Youth Agriculture Project Coordinator for VT 4-H, explained, *"Having powerful experiences in nature when you're really small, has a big effect later in life, for how you care about the environment, or taking care of the soil, water, and trees."* Increasing agricultural literacy, and thus increasing the value of farms and farmers opposes conventional images of success. This leaves agricultural literacy initiatives at a disadvantage, fighting an uphill battle to enable consumers to *unlearn* the material-oriented outlooks. Cat Buxton, founder of [Grow More, Waste Less](#), argued:

"Our academic world has been pushing down farmers and pushing industry up for so long that people are raised to think that farming is not a good way to make a living. It doesn't fit into the model of exploitation, success, pocket the money and die."

Another important impact of agricultural literacy is that process of experiential learning strengthens relationships and drives community building. In learning about farms and food, people are learning about farmers and the people that enable the food system that they rely on, thus creating community connections and personalizing agriculture. As people value agriculture more, they are more likely to volunteer for a farm, or participate in an event connected to their local farms.

Impacting Behavior

There is a general consensus that one's values impact their behavior. First, interviewees believed that higher agricultural literacy and higher value in agriculture influences behavior such as voting and policy support, purchasing habits, and career choices. Voting and government is impacted by agricultural literacy through education of the public and policymakers. Rosenbluth described, *"If we're going to change our policies, you have to feel an attachment to the issue in order to take action or change behavior."* Maire Folan from University of Vermont Extension agreed; *"if people value something, then they will preserve it. If having agricultural land here is important, then*

Vermonters will vote to make sure that we're preserving that land, making land available, and having access to it." Second, most interviewees agreed that agricultural literacy impacts purchasing habits. Harlow explained, *"Agricultural literacy is trying to support the local food economy. The economy is commerce and commerce is business and businesses is money and money is made at those levels by decisions that people make when they're shopping."* In theory, understanding the process and background of food increases one's value of local food, thus increasing local food consumption. Melisa Oliva, co-owner of [Ananda Gardens](#) farm, described that customer connection is vital: *"We want them to come see the gardens, learn about farming practices, understand the process, so they can feel more connected to it. And that connection is actually what generates revenue for us."* Some interviewees were skeptical that a higher value for local food causes people to buy the local food, especially if it is more expensive. Third, increased agricultural literacy can impact career choices. Many people hold inaccurate ideas about food system jobs, so it is important to expand people's understanding about the reality of potential agriculture careers. Vermont 4-H works to strengthen youth development in engineering, agriculture, STEM, and more. Sarah Kleinman, director of 4-H, highlighted, *"It's really important that we continue to help people see that agriculture is much more than farming. There are all these careers that are more than just milking a cow."* Christine from Healthy Roots explained that people's wider understanding of the breadth of ag-related careers *"increases the amount and diversity of people that feel like they're welcome into that community."*

Impacting People and the Planet

Behavior change due to increased agricultural literacy has widespread effects on individuals, communities, and the planet. Support for local farms strengthens the local food network and community resilience from environmental and economic challenges. According to Maire Folan, [EFNEP](#) Coordinator for University of Vermont extension, *"The survival of ourselves as a species depends on having really strong food systems networks, and part of that piece is having a strong local food system."* Shared experiences and connections in local food systems strengthens community networks. Increased agricultural literacy also improves health and nutrition equity. Oliva of Ananda Gardens farm, asserted:

“There’s a big part of the agriculture that we are developing that is not helping people’s health because it’s creating chronic metabolic diseases. From kids developing obesity, asthma, skin problems, to the elders who are dying from cardiovascular disease, which is the first cause of death in the state of Vermont.”

Emma Hileman works on the “Food is Medicine”²⁹ program for [Vermont Farmers Food Center](#) in Rutland county, connecting patients referred by healthcare providers with local produce. She explained, *“We need to eat nutritious food to live, keep our bodies happy and healthy, and be good to one another.”* Expanding exposure to local, nutritious food for all Vermonters would increase accessibility of agricultural literacy and target health and nutrition inequities.

Overall, increasing agricultural literacy for school-aged Vermonters and the general public is suspected to influence values and priorities, which shape voting patterns, purchasing behavior and career choices. Behavior changes support community and environmental resilience, as people increase support and empathy for Vermont farmers.

“Agricultural literacy creates more tolerance for farmers and understanding their hard work. It might allow you more patience if you get stuck behind a tractor on the road, or when people are spreading manure. It is important to know and value farmers for the quality that they bring into your lives.” -Theresa Snow, Salvation Farms, Executive Director

Equity of Agricultural Literacy

The agricultural literacy conversation must involve equity and access. Who has access to local food? Who has access to learn about food systems? Qing Ren from Shelburne farm, added, *“Who has the option to go to the farmers market to learn? Who has access to land to grow food? Who has the time and energy to grow food at home, or even cook at home?”*. Every person has some degree of agricultural literacy, but literacy may look different for everyone. Some people may have extensive knowledge about their home garden and cooking their vegetables, while lacking the language to talk about the larger implications of food systems. Several interviewees emphasized the importance of valuing all types of agricultural literacy. Further recommendations for

²⁹ *Farmacy Project*, Vermont Farmers Food Center, https://www.vermontfarmersfoodcenter.org/farmacy_project.

increasing accessibility and equitability of agricultural literacy programs are discussed in the “Recommendations” section of this report.

It is important to note the communities represented in this report. While aiming to represent many food systems’ individuals and groups, “snowball” methodology supported the search for participants, thus narrowing the scope of communities represented. Almost all interviewees were women, with a large majority being white women. We hope to expand the breadth of communities in the agricultural literacy conversation to represent all Vermonters.

VII. The Role of Policy

Opportunities and Limitations

Federal, state, and local policies have potential for strengthening agricultural literacy. Potential opportunities for success could include programs for funding and access expansion for initiatives, as well as building demand for local food, local farms, and food education through financial and nonfinancial incentives. Claire Whitehouse, research specialist at the University of Vermont, would like to see *“more mobilization to build political activism to build more agricultural literacy to support policies that would build a more just food system.”* Disagreements pose potential policy limitations, as compromised opinions could minimize impact and hinder speed and efficacy of policy. For Vermont agricultural literacy and local food economy support, local policy may be more effective in supporting specific programs.

Vermont Agricultural Literacy Policies

Several Vermont policies related to agricultural literacy have passed and been proposed in recent years, exemplifying policy’s potential role in expanding agricultural literacy initiatives.

Act 143, “Accessory on Farm Business”, passed in 2018, allowing farmers to operate an accessory on-farm business in the same location as their farm. This enables farms to “diversify operations and revenue streams and increase their ability to market agricultural products and the agricultural

experience by welcoming the public to their farms”³⁰. This policy gives farmers more flexibility in supporting agritourism, which is a large driver of agricultural literacy. Act 31, “An Act Related to Limiting Liability for Agritourism”³¹, passed in 2021, establishing a limitation on liability for agritourism hosts, thus giving an additional layer of protection for farmers.

Bill H.274, “An Act Relating to Agriculture and Nutrition Education”³², was proposed in February 2023 by Representative Henry Pearl. As proposed, the bill mandated statewide agriculture and nutrition education in curriculums, added agriculture and nutrition education in education quality standards and union wide curriculum, and amended the minimum course of study to include agriculture and nutrition education in the natural sciences field. Pearl intended to support agricultural literacy for school-aged Vermonters through widespread exposure to food and nutrition education. The bill faced numerous opposition testimonials from education and food system organizations, including VT-FEED and the VT Agency of Ed. Opposers argued that the bill would burden teachers with an already overflowing curriculum, and would require more funding than allocated. More effective alternatives to improve agriculture literacy were suggested, primarily being to invest in existing farm to school programs through funding and additional grants. In a phone interview, Representative Pearl discussed bill H.274:

“I knew there would be obstacles because I had been toying with this for years. How do you fit one more thing into a really stressed education system? But I think some good came out of the process because our committee started talking about it. Hopefully in the next session, we will think about how to support existing programs through funding mechanisms and other widespread support for teachers and kids.”

Like many farm educators interviewed, Pearl is passionate about agricultural literacy initiatives in Vermont: “*I like getting to the root of the problem. Food education is an investment for our future.*” As Pearl sees it, agricultural literacy initiatives support a widespread cultural shift toward awareness, appreciation, and protection of farms, food production, and land.

³⁰Alisa Matthews, *Agritourism & Act 143*, VT Agency of Agriculture, Food & Markets, <https://agriculture.vermont.gov/agritourism-act-143>.

³¹*Act 31: An Act Relating to Limiting Liability for Agritourism*, Vermont Legislature, https://www.uvm.edu/sites/default/files/Agriculture/Agritourism/Act_31.pdf.

³²*Bill H.274: An act relating to agriculture and nutrition education*, Vermont Legislature, <https://legislature.vermont.gov/Documents/2024/Docs/BILLS/H-0274/H-0274%20As%20Introduced.pdf>.

VIII. Measuring Agricultural Literacy

When asked about the best way to measure agricultural literacy, interviewees had a hard time composing cohesive, confident answers. There were many conflicting opinions on *how* to measure and *if* to measure agricultural literacy.

Why Measure

Why should we measure agricultural literacy? The motivation for measurement is primarily to gauge progress, or lack thereof, of farm and food understanding. It is important to understand agricultural literacy levels of different populations to learn about what initiatives and programs are effective and ineffective, and where there are knowledge gaps. Gauging agricultural literacy can help policymakers, researchers, and advocates justify the importance of funding for agricultural literacy initiatives and programs to leaders and legislators. Measurement also highlights the influence that knowledge has on individuals' values and behavior, which is critical in trying to shift consumer behavior.

Ways to Measure

There is no universally effective measurement method. The most effective solution may be to combine many methods to create an index, while recognizing the incompleteness of any given method. Mixing qualitative and quantitative methods targets several scales and types of data. Mixing direct methods and indirect indicators increases measurement accuracy. Direct methods vary for school-aged youth and the general public. Overall, determining how to create an accurate index and scale for agricultural literacy may be more difficult than determining measurement methods (surveying versus testing).

Direct measurement includes online and in person polling, surveying, and testing. Leading Vermont organizations support measurement as well. To support goal #13, "All people in Vermont can access the knowledge, skills, and resources to select, grow, hunt, fish, forage, process, store,

and prepare local food”³³, Vermont Farm to Plate suggests an objective that “an assessment tool and metrics to track agricultural literacy will be established.” Since 1990, the [Center for Rural Studies \(CRS\)](#) at the University of Vermont has conducted an annual statewide survey “The Vermonter Poll” with residents across the state to examine public opinion on contemporary issues. Farm to Plate has worked with the CRS in recent years to pose questions to citizens regarding various aspects of Vermont’s food system. In 2023, Farm to Plate and a group of associated agricultural literacy stakeholders collaborated with the CRS to attempt to gauge Vermonter’s agricultural literacy and their perceived importance of agriculture through a series of questions placed in the Vermonter Poll. The team identified existing questions posed over time on the Vermonter Poll and through other research, and developed new questions to build out two indices- one for agricultural literacy and one for perceived importance of agriculture to Vermont. The agricultural literacy question set was designed with a goal of enabling representation of a broad mix of common individual agricultural experiences that might contribute to literacy. The questions centered on local food access, experience growing food, visual identification of vegetables and types of physical farmstead interactions. Answers were scored and scaled on an index to determine levels of “agricultural literacy”. In cross tabulation analyses exploring the interactions between agricultural literacy levels and perceived importance of agricultural factors, researchers found that respondents with “high agricultural literacy” were more likely to place importance on buying agricultural products grown in Vermont than other respondents. On three other agricultural importance factors, no clear relationship between ag literacy level and perceived importance of ag were found. Additional research is necessary to better understand if these findings hold true or perhaps that the indices themselves could be improved. In analyzing literacy by demographic attributes, researchers found that educational attainment and income level may not correlate with agricultural literacy levels. Political affiliation had the greatest correlation, with self identifying libertarians having the highest percentage of high agricultural literacy (64.7%) among the main political affiliations. This pilot program created a basic direct

³³ *Vermont Agricultural and Food System Plan 2021-2030*, Vermont Farm to Plate (2021), https://www.vtfarmtoplate.com/sites/default/files/2022-03/vermont_agriculture_and_food_system_plan_-_without_briefs.pdf.

measurement tool that future years of research can build on. More information about the 2023 Vermonter Poll and agricultural literacy index work can be found in the Appendix B.

Interviewees mentioned several measurement ideas. For the K-12 category, agricultural literacy could be measured through testing in schools. One interviewee wondered why agricultural knowledge should not be required to graduate high school: *“What could be more important for us to understand than the thing that we need every single day in order to survive?”*. Claire Whitehouse from UVM compared expectations for basic civic awareness about government function to basic awareness about local agriculture, its relationship to government, sustainability, and its political and economic implications. Molly Willard, project manager for agricultural training for Vermont Technical College, suggested adding questions into existing state tests already administered by state sbacs testing methods.

Indirect measurement uses statistical indicators to reflect agricultural literacy. These indicators could relate to participation in agricultural literacy initiatives, such as the degree of farm to school integration in K-12 schools, agritourism and CSA (community supported agriculture) participation, and farmers’ market attendance. In 2018, the [Vermont Farm to School and Early Childhood Network](#) exemplified this form of measurement by conducting a “Data Harvest”³⁴ to better understand how many schools have hands-on food system education, and the extent to which food systems education is integrated into the schools’ curriculum, meal programs, and community engagement. Indicators could also relate to behavior, such as the sales of local food, percentage of Vermonters with home gardens, and number of people in food systems’ college degrees. Proximity to farms is another indirect indicator. Indirect indicators require less time and money than direct methods. However, they are sometimes thought to be weaker measurement methods because they are reliant on assumptions about how participation, exposure, or behavior is related to agricultural literacy. For example, people could be buying local food because they believe in supporting local farms, or they could be buying local food due to other factors, such as

³⁴Paul Meddaugh, *Data Harvest*, Vermont Farm to School (2018), https://vermontfarmtoschool.org/sites/default/files/2022-03/2018_VT_FTS_Data_Harvest_Webinar_Slide_Deck.pdf

appearance or availability. Additionally, people could have close proximity to farms without understanding the food system network.

As for measurement content, interviewees were most interested in people's connections within larger systems awareness that ultimately shape values and enable behavioral change. Qing Ren explained that,

"...understanding how the components in the food systems or agriculture systems are connected and how an individual can make a difference. That is probably more important than being able to identify vegetables."

Betsy Rosenbluth concurred, in discussing potential long-term impacts of youth education programming:

"I'm interested if they see themselves as part of the food system and feel like they have some agency for change. That could be changing their buying habits or eating differently or advocating for something, or they see a connection to climate change or preserving land."

Similarly, Gina Clithero, Farm to Institution Program Manager for the Agency of Agriculture, Food and Markets, was interested in the impacts of youth agricultural literacy programs, and whether higher agricultural literacy for young participants drives them to become future environmental stewards.

IX. Conclusion

Why is this Important?

Interviewees were passionate and excited to explain their dedication to increasing Vermonters' agricultural literacy. Popular motivations included helping citizens reconnect with the earth, boost an understanding for the vitality of agriculture, and increase regenerative agriculture and local food to protect the future of the human species and the planet.

Over time, humans have become disconnected from nature and disconnected from food systems. Improving agricultural literacy can help citizens create new visions of regenerative agriculture and sustainable practices.

“We got ourselves to a globalized food system and now we're confronting the really detrimental impacts of that. We need to get ourselves to another way, with a global perspective, but also with a reckoning with its destructiveness. We have finite resources on the planet.” -Heidi Lynch, VT Farmers Food Center, Executive Director

“I would like to help the next generation see themselves as agents of change with society to create a more sustainable world. Food is the best way to get at that, because we all eat and we all have some connection, so it's really easy to understand big concepts of sustainability, climate change, racism, social issues...anything, through food.” -Betsy Rosenbluth, Shelburne Farms

Another prominent motive for increasing agricultural literacy is to help citizens understand the vitality of agriculture and regenerative agriculture for the human species.

“Agricultural literacy is a piece of the answer to our survival. If we're going to live in balance, we need to understand how to work with the environment. And I think agricultural literacy and understanding the production of food in a balanced, healthy way, is a good way for us to understand our position in the ecosystem.” -Theresa Snow, Salvation Farms, Executive Director

“Agriculture is the basis of everything. Everyone eats and we all need to depend on agriculture for essentially everything. It's the foundation of human life and our communities.” -Qing Ren, Shelburne Farms, Evaluation and Program Analyst

“If we don't eat, we don't live. And if we're going to protect our environment, our landscape, and our food, we need to understand them. We need to know that the pollinators and bees are important and we need to know that there's a reason why this farmer is growing this crop.” -Tara Pereira, Vermont Fresh Network

“Our resiliency as a human species is dependent upon agricultural literacy. On a community level, to be able to listen to people, hear people, and care for people...if you're not really caring for your body, or caring for the land, can you really care for each other and the community?” -Emma Hileman, Vermont Farmers Food Center

To many, increasing agricultural literacy is viewed as a foundational step to strengthening local food networks and protecting our planet.

“We only have 30 harvests left on the planet if things keep going this direction. Can agricultural literacy help us get to a shared understanding of what we could be doing and changing to keep going?” - Heidi Lynch, VT Farmers Food Center

Recommendations for Expanding Agricultural Literacy

There are many steps Vermont can take to expand agricultural literacy. Strategies include investment in youth education, support for farmers’ connections with the public, more equitable and widespread programming, and supporting everyone in the conversation.

- 7· Investment in youth education programs in schools and on farms is vital to increasing agricultural literacy. Examples of investment include:
 - a. Supporting existing programs, such as farm to school grants, for all Vermont schools.
 - b. Prioritizing hands-on, experiential learning (farm field trips and school gardens).
 - c. Funding the role of “agriculture education leader” in school districts (Farm to School coordinator, school garden educator, etc).
 - d. Integrating agricultural and food systems education into existing subjects (STEM, art, history), rather than adding separate material, to alleviate the burden for teachers. Providing high quality professional development and lessons to educators.

“There has been some resistance to the term agricultural literacy with educators because it feels like ‘oh, my gosh, I’m already teaching math and science. And now I have to teach

agricultural literacy too'. But, we're not asking you to teach one more thing. We're asking you to consider your approaches within teaching those other content areas, and how might you do that through the lens of a nature based or agricultural setting.” -Cynthia Greene, Shelburne Farms, Farm to Early Childhood Partnership Coordinator

“We must normalize and institutionalize the inclusion of local food awareness and experiential education in the school system.” -Liz Kenton, UVM extension, Youth Agricultural Project Coordinator

“Agricultural literacy must be woven into places where every single kid in a community is already going, instead of just hoping that kids have families who can take them to a farm on the weekend.” -Vera Simon Nobes, Shelburne Farms, Farm Based Educator Network Coordinator

2. Helping farmers connect with customers will increase agricultural literacy for consumers.

Ways to support farmers could include:

- a. Robust, quality farmers’ markets. Funding in farmers’ market organizers and locations. Ensuring that high quality, regional markets are prioritized over a larger quantity of markets to alleviate burden on farmers.

“Farmers markets are vital for people who are never exposed to farmers. They can stop and buy fresh fruits and vegetables. People must go to see it and experience it.” -Kathy Lavoie, Northwest Regional Planning Commission

“When people go to farmers markets, they're exposed to new products and new information. And within a sense of community and a festival-like atmosphere... live music and an ice cream cone goes a long way for increasing literacy and agricultural activity.” -Michael Moser, UVM, Coordinator for the VT State Data Center and CRS Research Project Specialist

- b. Aiding technical assistance, land access, and visibility for farmers. Examining where the resources are going. Technical assistance could include helping people understand farm stands with video explanations, or supporting farmers to expand payment methods. Using newspapers to tell local farmers' stories.

“Who are the farmers? As people, we are such connectors, that when there's a story, we can connect to a person, it's more valuable and meaningful for us as humans. A huge key strategy to expand agricultural literacy is keeping those communications alive and vibrant.” -Maire Folan, UVM Extension, EFNEP Coordinator

“There could be opportunities for farmers to share their journeys and what they're learning with the community. Because it's hard work and a hard career path.” -Melisa Oliva, Ananda Gardens, Co-owner

- c. Providing money and resources from grants and NGOs to help farmers with Agritourism and farm based education.

“How can we create spaces for farm based education? And at the same time have the time for farming and being farmers?” -Melisa Oliva, Ananda Gardens, Co-owner

“Anything that we do to support the farm and food sector, increase visibility, increase market opportunities...it will all end up being in some way connected to education or awareness for consumers.” -Gina Clithero, Agency of Agriculture, Food and Markets

3. Support Vermont workforce development for food systems careers.

- a. Invest in [Career Technical Education \(CTE\)](#) integration and presence in Vermont schools. Restructure the funding formula, so that CTEs have independent funding streams and budgets and are not in competition with sending schools as noted in the [Farm to Plate Labor and Issue Brief](#).
- b. Subsidize vocational training and technical education for food systems careers.

- c. Ensure food systems careers in Vermont provide livable wages, while supporting the Vermont economy.
4. Invest in equitable agricultural literacy programs and initiatives by targeting financial, cultural, and physical barriers. Examples of equitable strategies include:
- a. Integrating more local food in the charitable food system and Vermont food hubs to expand access and exposure to local food.
 - b. In discussing food systems and agriculture, use language that is understood by people at all reading levels.
 - c. Supporting accessible agritourism and agricultural literacy programs to mobility of all types.
 - d. Highlight the work and historical knowledge of BIPOC (black, indigenous, person of color) populations including Abenaki. Find opportunities to support continued expansion of information tied to agricultural literacy amongst all Vermonters.
 - e. Expand the availability of culturally appropriate food as a way of providing opportunities for cooking and experiencing food through different cultural lenses.

“There’s an imbalance in who is benefiting from local agriculture and local purchasing. Who has access to local food and cooking? Who has opportunities to learn about agricultural systems? Who is this work actually gone to reach?” -Qing Ren, Shelburne Farms, Evaluation and Program Analyst

“The goal is regardless of income, or transportation, or whatever barriers people may be experiencing, the hope is that we can develop affordable, accessible, inclusive programs that help people understand agriculture.” -Lisa Chase, Vermont Tourism Research Center, Director

“If a person doesn’t identify themselves with buying local organic, then, even though they might have resources or money to buy local food, they would not do that, because they don’t associate themselves with the culture of buying local.” - Qing Ren, Shelburne Farms, Evaluation and Program Analyst

5. Support widespread agricultural literacy initiatives for more personal connection to the general public.
 - a. Incorporate stories and information about agriculture and local food systems in general media outlets, such as the newspaper, radio, and TV.
 - b. Support advocacy programs that are personal to widespread groups of people, such as campaigns to plant native gardens or “Raise the Blade”³⁵ in backyards. These campaigns connect to people’s personal lawns, kids, and meals, giving them more agency and interest in the topic. Capitalize on Vermont’s small population to expand some agricultural literacy initiatives to every Vermonter.
 - c. Support restaurants and grocery stores in their efforts to inform customers about origins of foods. Explore the ways that increased awareness about ingredient sourcing at restaurants impact consumer habits and purchasing behaviors.

“The more we increase those touch points, the more I think that people have an experience with something, the more they understand something. And the more they feel connected.” -Tara Pereira, Vermont Fresh Network

“There are not a lot of agricultural literacy programs that target adults who are not already out looking for it. For agritourism, if you're a consumer, who is choosing to spend your Saturday on a farm, or choosing to read food journalists, you're probably already interested in food systems.” -Claire Whitehouse, UVM

6. Support each other in the agricultural literacy conversation. Examples of community support include:
 - a. Connecting events among farmers, the public, and people doing work to support farmers.
 - b. Expand the definition and descriptions of *who* is doing agricultural related work, beyond just producers.

³⁵ *Raise the Blade*, Lawn to Lake (2023), <https://lawntolake.org/how-to-help/raise-the-blade/>

- c. Disconnecting morality from certain agriculture practices and behaviors as “bad” and “good”. Helping farmers with solutions that are both ecologically sound and economically viable.
- d. Align and weave together the work of different Vermont agricultural literacy groups, such as the Vermont Farm to School and Early Childhood Network and more traditional organizations, like [4-H](#), [Vermont Farm Bureau](#), and [New England Dairy](#). Find opportunities for common ground among organizations and people doing this work.

Future Research to Explore

This report sought to examine the meaning of agricultural literacy for Vermont food systems professionals and better understand their recommendations for agricultural literacy expansion. Interviewing leaders provoked many new questions and conversations for future research.

1. Is agricultural literacy the best term to use? If not, what alternative terms are supported?
2. How can we make agricultural literacy conversations and programs more accessible and equitable to all Vermonters?
3. How does agricultural literacy impact values and behaviors of Vermonters? How might youth education programs influence future community involvement or purchasing habits?
4. What is the best way to measure agricultural literacy?
5. What types of agricultural literacy initiatives result in the greatest behavioral change?
6. How do people perceive Vermont agriculture?

“The goal is greater levels of behavioral change for those audiences and initiatives. And we know that behavior is very emotionally driven. So exploring the emotions, the belonging, the connections, the relationships, the nostalgia, or the hopes, or the fears around agriculture in the working landscape in Vermont, might be interesting.”

- Liz Kenton, UVM Extension

Vermont Programs

Organization and Resource	Location	Description	Purpose	Audience
4-H and Youth	Statewide	Numerous initiatives related to expanding agricultural literacy for youth. Programs are focused on hands on, experiential learning. Programs related to ag include science and engineering, the Youth Agriculture Project, Youth Farm Safety, nutrition education, robotics, and more.	Experiential Education Opportunities	School Aged
ACORN VT	Addison	ACORN VT oversees the Acorn Food Hub, which works to aggregate, market and distribute local food to the communities in Addison County. Supports "Food is Medicine" program, farm to school for local schools, consumer education, and the local economy. ACORN also hosts Tour de Farms and provides an online local food and farm guide.	Experiential Education Opportunities	General Public
Cedar Circle Farm and Education Center	Orange	In person resources include farm tours, farmers markets, summer camps, CSAs, farm and cooking workshops, field trips, and more. Virtual resources include recipes, cooking tips, gardening tips, storage tips, suggested reading, and a monthly blog.	Experiential Education Opportunities	General Public
Center for An Agricultural Economy	Caledonia	CAE supports place-based and food systems education with Orleans Southwest Supervisory Union, community culinary literacy events, VT Food Venture Center (Food Hub), farm and business advising, and community events.	Experiential Education Opportunities	General Public
Dig in Vermont	Statewide	Interactive online guide from Vermont Fresh Network with information on agricultural and culinary tourism in VT, including events, farms, eateries, inns, featured blogs, and more.	Agritourism	General Public
Digital Dairy in the Classroom (Shelburne Farms)	Statewide	Educational videos about Vermont's Agriculture. Videos include lessons on the importance of farming, cows, dairy products, and dairy farming. There are also videos with tours of three Vermont dairy farms,	Educational Tools	School Aged

		and their instructions on milking, cow care, and manure management.		
Expanded Food and Nutrition Education Program (UVM)	Statewide	Program to help low-income Vermonters with food, nutrition, agricultural, and culinary literacy.	Experiential Education Opportunities	General Public
Farm and Wilderness – Summer Camp	Windsor	Summer Camps for kids aged 4-17 focused on exposure and education to agriculture, animals, and the outdoors.	Experiential Education Opportunities	School Aged
Farm Based Education Network	Statewide	International network of farmers, educators, and community leaders dedicated to strengthening farm-based education. Resources include job listings, workshops, conferences, mentorship, and online resources.	Agritourism	Adult
Farm Share Program Farms	Statewide	List of participating farms in NOFA Farm Share Program.	Agritourism	General Public
Farm to School and Early Childhood Grants (Vermont Agency of Ag)	Statewide	Grants include the Farm to School and Early Childhood Grants, Farm to School Vision Grants, and CSA Grants. Grants address technical assistance, food insecurity, racial justice, and more.	Experiential Education Opportunities	School Aged
Food Connects	Windham	Farm to School for Windham County and regional food hub to act as connection between farmers and consumers.	Experiential Education Opportunities	School Aged
General Ag Literacy Brief (Vermont Farm to Plate)	Statewide	Information about Agricultural and Food Literacy conditions, bottlenecks, opportunities, and recommendations for Vermont's general public.	Understanding Agricultural Literacy	Adult
Green Mountain Farm to School	Essex, Orleans and Caledonia	Programs focus on education and access through Farm to School for the Northeast Kingdom, Green Mountain Farm Direct (regional food hub distributing local food), and lunchbox food truck.	Experiential Education Opportunities	School Aged
Healthy Roots Collaborative	Franklin, Grand Isle	Regional Food Systems program providing Farm and business support and Farm to School and gleaning programming.	Experiential Education Opportunities	School Aged

Intervale	Chittenden	Farm providing CSAs, Farm Business Planning guidance, Food Hub and food access program, and community events.	Agritourism	General Public
Maple CDE (UVM)	Shelburne Farms	CDE (Career Development Event) created by UVM extension and Vermont high school instructors as a competition and test of skill development for students. The Maple CDE seeks to illustrate the range and complexity of subjects required for maple syrup production.	Career Development	Post Secondary
NOFA-VT	Statewide	Supports Vermont farms and communities economically, ecologically, and socially. Resources include Vermont Farmers Market Directory , Agricultural Literacy week, and a large resource library on all things farms, education, policy, and more for different audiences.	Agritourism	General Public
Northwest Vermont Grown	Franklin, Grand Isle	Interactive online guide seeking to connect farm-fresh restaurants, farm stands, and creators in Northwest Vermont to citizens.	Agritourism	General Public
Pick Your Own	Statewide	Compilation of opportunities in Vermont to "pick your own" produce.	Agritourism	General Public
Pollinator Pathways	Statewide	Program to help residents support regenerative land, yard, and garden practices at their own home.	Educational Tools	General Public
Salvation Farms	Morrisville	Organization integrating Vermont's agricultural surplus (edible food that does not make it to people due to barriers) into sites serving vulnerable Vermonters. Engages volunteers in this process of sharing local food with more Vermonters. Leader in gleaning and commodity programs (Vermont Gleaning Collaborative) for partnerships with farms, consumers, organizations, and communities.	Experiential Education Opportunities	General Public
Seven Days – VT Melissa Pasanen News	Statewide	Journalist covering food and agriculture in Vermont.	Agricultural Journalism	Adult
Shelburne Farms Institute for Sustainable Schools	Statewide, National, International	An education nonprofit on a mission to inspire and cultivate learning for a sustainable future through its programs, place, and products. Education for sustainability links knowledge, inquiry, and action while cultivating a sense of joy and wonder for the world around us. Offerings for teachers and for students focus on equity-centered food systems and	Understanding Agricultural Literacy	General Public

		climate change education, community and place-based learning, and youth engagement and action to help learners build healthier communities and a healthier planet, now and in the future.		
Small Bites Newsletter	Statewide	Monthly newsletter from Annie Harlow on topics related to the movement of food through the food system.	Agricultural Journalism	Adult
The Maple 100 (Vermont Agency of Ag)	Statewide	Month long annual promotion of maple activities, adventures, and products across Vermont.	Agritourism	General Public
UVM – Institute for Agroecology	Burlington	Undergraduate and graduate program at UVM for research and study about land, food systems, and the environment.	Career Development	Post Secondary
VerK-12 Ag Literacy Brief (Vermont Farm to Plate)	Statewide	Information about agricultural and food literacy conditions, bottlenecks, opportunities, and recommendations for Vermont's K-12 youth.	Understanding Agricultural Literacy	Adult
Vermont Community Garden Network	Statewide	Networking serves to increase access to gardens in Vermont through grants, partnerships, workshops, and online resources.	Educational Tools	General Public
Vermont Farm and Forest School	Washington	K-5 day school, summer camp, workshops, and events located at the Drift Farmstead.	Experiential Education Opportunities	School Aged
Vermont Farm Bureau	Statewide	Organization seeking to represent all Vermont farmers. Online resources include agricultural literacy worksheets and videos.	Educational Tools	General Public
Vermont Farmers Food Center	Rutland	Resources include Farmecy (Food is Medicine) initiative to improve food access, food hub for local food distribution, educational workshops, farm based experiential learning (FABEL), community gardens, and online access resources.	Experiential Education Opportunities	General Public
Vermont Food Education Every Day (FEED)	Statewide	Programs and resources include Farm to School Institute, Farm to Early Childhood, Agricultural Educators Cohort, Professional Development, Technical Assistance, and Culinary events. Online resources include monthly newsletter, curricular resources, planning toolkits, funding aid, nutrition, and more.	Experiential Education Opportunities	General Public

Vermont Fresh Network	Shelburne Farms	Strengthens connections among the local food system of Vermont chefs, farmers, and food artisans. Resources strengthening agricultural literacy include DigIn VT, education dinner events (Annual Forum Dinner), and the Fresh Feed Newsletter.	Agritourism	General Public
Vermont FTS & EC Network – Online Resource Library	Statewide	Statewide network of educators, school advocates, and practitioners supporting farm to school efforts in Vermont. Large online library includes resources for early childhood to high school aged students about curriculum, nutrition, data, gardens, and farms.	Experiential Education Opportunities	School Aged
Vermont Technical College – Diversified Agriculture	Orange	Associate degree offered by Vermont Tech in Agriculture and Food entrepreneurship, with concentrations in Agriculture & Livestock Production or Food Entrepreneurship.	Career Development	General Public
Vermont Youth Conservation Corps – Food and Farm Program	Chittenden	Initiative to engage young people in organic farming and culinary education and empower youth to address food systems issues.	Experiential Education Opportunities	School Aged
Vital Communities	Orange	Organization in charge of Upper Valley Farm to School, Upper Valley Teaching Place Collaborative, and programs focused on supporting agricultural and ecological education in schools.	Experiential Education Opportunities	School Aged
VT Agricultural Literacy Week Book List (2021)	Statewide	Compiled book list for all ages to spread knowledge and understanding about agriculture and food.	Educational Tools	General Public

National Resources

Organization and Resource	Description	Purpose
American Association for Agricultural Education – Journal of Agricultural Education	Organization driving efforts for agricultural education efforts in U.S. universities. The Journal of Agricultural Education serves as a platform for communication among members of the profession.	Understanding Agricultural Literacy
American Farm Bureau – Pillars of Agricultural Literacy	Report created for educators and planners interested in Agricultural Literacy. The report examines various aspects of agricultural literacy, including foundational knowledge for learners of all ages and expectations of agricultural knowledge for different ages.	Understanding Agricultural Literacy
Center for Ecoliteracy	Builds partnerships with schools and programs to expand place-based connections with food and the environment. Online resources include lessons, videos, articles, and principles for schools, students, the general public, farmers, and organizations. Topics center on ecological education, food and sustainability, and systems change.	Experiential Education Opportunities
Food and Nutrition – Understanding and Promoting Nutrition and Health Equity	Article explaining health equity through a food and nutrition lens.	Educational Tools
FoodCorps	Partners with schools and communities to expand food education and nourishing food in schools to all children. Strategies focus on hands-on food education, nourishing school meals, and advancing equity through food.	Experiential Education Opportunities
Frameworks – Reframing Farming	Detailed report created by Frameworks and the Farming and Food Narrative Project. Report seeks to amplify agricultural voices in communication efforts about farming in ways that respects the environment, farmers, farmworkers, and aims to ensure farming's future as diverse, equitable, and inclusive.	Educational Tools

Global Agritourism Network	Network of agritourism stakeholders aiming to enhance the capacity of agritourism stakeholders worldwide. Events include the World Agritourism Conference, the International Agritourism Workshop, World Agritourism Day, and more online webinars. Stakeholders include farmers and agricultural producers, researchers, educators, community planners, government entities, agricultural service providers, development organizations, tour operators, hospitality operators, event planners, among others.	Agritourism
Greenhorns	Organization in Maine dedicated to supporting and promoting the next generation of farmers through grassroots media production. Programs include libraries, digital magazines, radio, summer workshops, guidebooks, resources, blogs, and more.	Career Development
HEAL Food Alliance	Alliance centered around health, environment, agriculture, and labor while fighting for food and farm justice. Efforts focus on growing community power, developing political leadership, and exposing and limiting corporate control of the food system.	Experiential Education Opportunities
Kids Gardening	Organization dedicated to creating opportunities for kids to play, learn, and grow through gardening, engaging their natural curiosity and wonder. Educators and families are targeted with grant funding, original educational resources, inspiration, and community.	Experiential Education Opportunities
Life Lab	Workshops and consultations for educators on student engagement strategies in gardens and on farms. Experiential learning for all ages includes children's camps, field trips, internships, and teacher workshops.	Experiential Education Opportunities
Local Harvest	Interactive map for farmers' market, family farms, and other sources of sustainability grown food in your area.	Agritourism
Massachusetts Food System Collaborative – Food Literacy In MA: Local Success, Statewide Opportunities	Report published in 2022 evaluating food literacy education programs in Massachusetts, including its importance, its current status, relevant organizations, specific case studies, and recommendations for Massachusetts.	Understanding Agricultural Literacy
Massachusetts Food System Collaborative – Massachusetts Ag Literacy Strategy	Resources and tips for food system education expansion in the classroom.	Understanding Agricultural Literacy

National Agriculture in the Classroom – Logic Model for Agricultural Literacy Programming (2013)	<p>Theoretical framework created for critical agricultural literacy research and program evaluation. Framework was created in 2013 by the National Agriculture in the Classroom Organization, FFA, the American Farm Bureau, Foundation for Agriculture, and the National Institute of Food and Agriculture - USDA.</p>	<p>Understanding Agricultural Literacy</p>
National Center for Agricultural Literacy (NCAL)	<p>Program in collaboration with Utah State University, National Agriculture in the Classroom, and the National Institute of Food and Agriculture. NCAL focuses on arming teachers with curriculums and tools to better understand agricultural literacy and how to expand agricultural education in the classroom.</p>	<p>Educational Tools</p>
National Farm to School	<p>Network supporting farm to school programming across all 50 states, each with their own policies, funding, and partners. Online library of resources covers almost 30 topics related to food systems and nutrition.</p>	<p>Experiential Education Opportunities</p>
New England Dairy	<p>Supports dairy farming and farmers in New England States (VT, NH, MA, RI, CT) in aiming to protect healthy dairy products, cows, land, and communities. Programs include nutrition and environmental education, farmer visibility, and farm to school program development. Online resources provided in English and spanish.</p>	<p>Educational Tools</p>
New Entry Sustainable Farming Project	<p>Supports new farmers to expand accessible and nutritious food for an economically viable, environmentally sustainable, and equitable food system.</p>	<p>Agritourism</p>
School Garden Support Organization Network	<p>Network supporting equitable garden-based education. Resources include professional & leadership development and platforms to connect members serving at a school, district, regional, state, or national level.</p>	<p>Experiential Education Opportunities</p>
Slow Food USA – USA School Garden Network	<p>Connects youth with food by teaching them to grow, cook, and enjoy real food. The network aims to sustain school garden programs by supporting educators, volunteers, and garden leaders. Online resources include Garden to Cafeteria Toolkit, School Garden Guide, and additional curriculum resources.</p>	<p>Experiential Education Opportunities</p>
Soul Fire Farm	<p>Afro-Indigenous centered community farm providing a space for diverse communities to share skills on sustainable agriculture, natural building, spiritual activism, health, and environmental justice. Supports the next generation of activist-farmers while strengthening food sovereignty and community self-determination movements.</p>	<p>Career Development</p>

The Edible Schoolyard Project	<p>Organization dedicated to using organic school gardens, kitchens, and cafeterias to reshape public education. Programs focus on experiential learning to connect students with food, nature, and each other. Programs include campuses in Berkeley and Stockton, CA, collaborative programs with UC Davis, an online resource library of lesson plans, and training for educators, gardeners, chefs, and advocates. The Edible Schoolyard Network connects thousands of programs with states around the U.S. and internationally.</p>	<p>Experiential Education Opportunities</p>
The National FFA Organization	<p>Youth organization dedicated to preparing members for leadership and careers in the agriculture industry. Local FFA Chapters partner with schools and State FFA Associations join chapters together. Programs include state and national conferences, awards, and career and leadership events.</p>	<p>Career Development</p>
US Department of Agriculture	<p>Federal Funds at the state level for agricultural literacy initiatives and programs.</p>	<p>Agritourism</p>

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Appendix A

Interview Guide Questions

General Questions

1. Name?
2. Where do you work?
3. What is your position?
4. What is your connection to Farm to Plate (if any)?

Ag Literacy Questions

5. What does the term agricultural literacy mean to you?
6. Do you use the term agricultural literacy? If not, do you have alternative terms?
7. Farm to Plate is looking into agricultural literacy in Vermont. How do you see agricultural literacy in Vermont as different from somewhere else?
8. What current ag literacy initiatives, if any, are you aware of? (*“Initiatives” can be broad or specific, including county fairs, farm-based summer camps, educational tables at farmers markets, open farm week, etc.*)
9. What current ag literacy initiatives, if any, are you working or teaching on?
10. As a [position], what do you see as your responsibility/role for the future of ag literacy in Vermont?
11. What is the importance of expanding ag literacy in Vermont? Why does this matter?
12. How should ag literacy be measured in Vermont?
13. What are important strategies for expanding and improving ag literacy in Vermont?

Appendix B

2023 Vermonter Poll Agricultural Literacy Index Questions

1. Have you or someone in your household obtained local food in the past year from any of the following ways:
 - Bought local food directly from a farm, farm stand, CSA or farmers' market
 - Bought local food at a restaurant
 - Bought local food at a grocery store or supermarket
 - Bought local food at a convenience store or corner market
 - Hunted to eat
 - Fished to eat
 - Grown vegetables or fruit to eat
 - Foraged vegetables or fruit to eat
 - Raised livestock to eat
 - Bartered local food to eat
 - Received local food from a food shelf, food bank or meals on wheels
 - Received local food through gifting and sharing
 - Scavenged local food through dumpster diving, salvaging roadkill or other activities

2. Have you visited a farm in the past year for any of the following?
 - Pick Your Own produce
 - Overnight farm stay
 - For a meal or tasting
 - Family programs or field trips
 - Farm tour or open house
 - Festival or entertainment event
 - Using farmland trails

3. Visual identification of produce.
 - Beet, Kale, Snap Pea, Chard, Squash

4. Does anyone in your household plant seeds to grow food?

2023 Agricultural Importance Index Questions

5. Please tell us how important you think each of the following are.
 - Agriculture to Vermont's future
 - Children study "food, farms, and nutrition" in school
 - Buying agricultural products grown in Vermont

- Ensure that farming in VT is financially sustainable

For more information about the annual Vermonter Poll hosted by the Center for Rural Studies-
<https://www.uvm.edu/crs/vermonter-poll>

Appendix C

Farm to Plate Summary Documents

[Agricultural Literacy Report Brief](#)

[Vermont Food System Plan Brief: Agricultural Literacy K-12](#)

[Vermont Food System Plan Brief: Agricultural and Food Literacy](#)