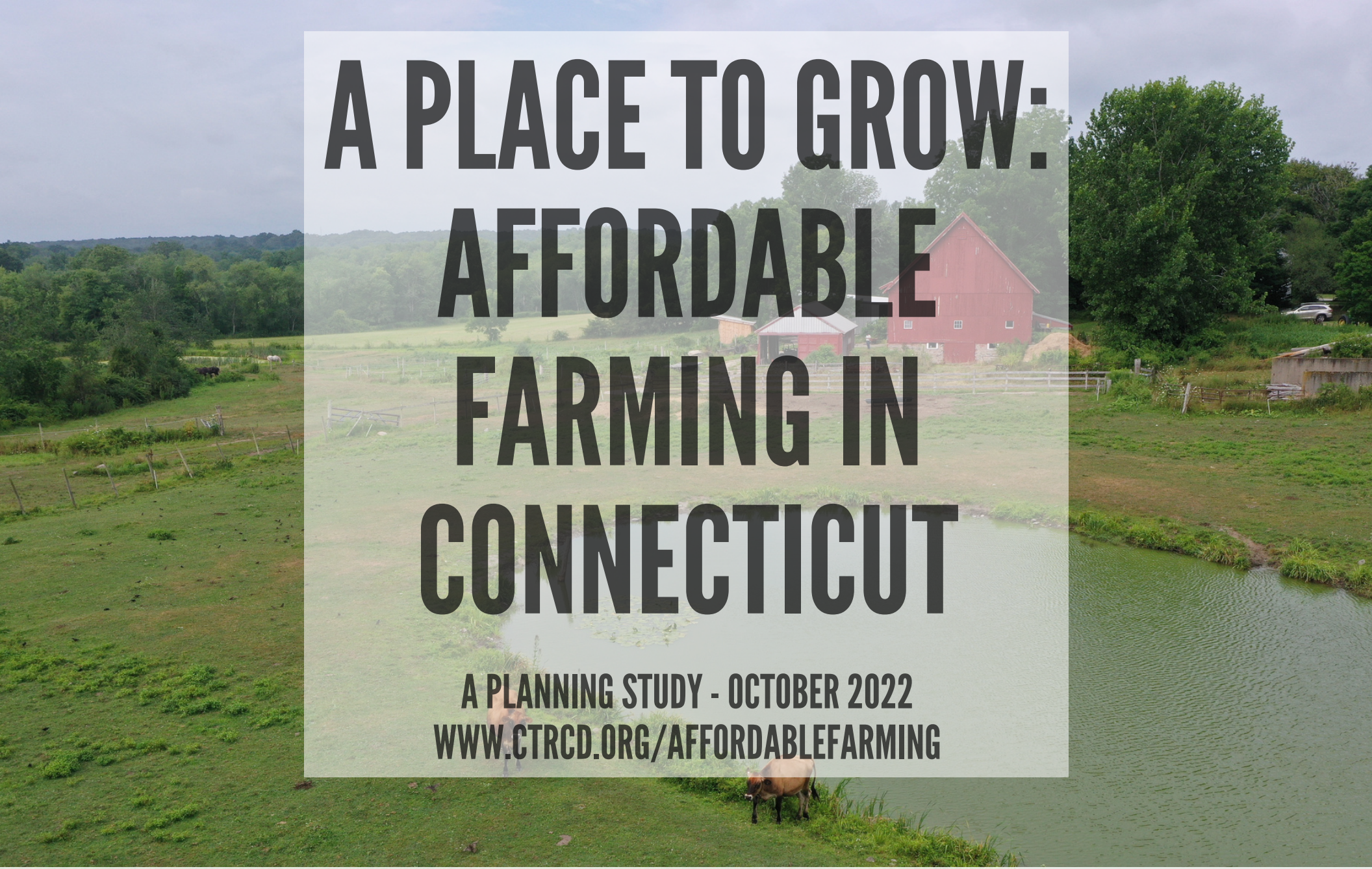


A PLACE TO GROW: AFFORDABLE FARMING IN CONNECTICUT

A PLANNING STUDY - OCTOBER 2022

WWW.CTRCD.ORG/AFFORDABLEFARMING

Connecticut Resource Conservation & Development

CT DEPARTMENT OF AGRICULTURE

THE GREAT SEAL OF THE TOWN OF LEBANON CONNECTICUT

ACKNOWLEDGEMENTS

In 2018, Lebanon Town Planner Phil Chester raised an idea with me about bridging lack of affordable housing with lack of access to farmland, both in short supply for new farmers. Lebanon was seeking to support new farmers, including affordability for housing as well as farmland access. Lebanon has been an inspiration leader in agriculture, leading the state and New England with new initiatives. So began a partnership to explore the questions and answers of creating affordable farming opportunities, including housing for Connecticut farmers. The Connecticut Department of Agriculture reviewed and approved our application for grant funding in 2019.

It has been an amazing research process, involving a great team of consultants, farmers, educators, planners, and town commission members. A Place to Grow would not have been possible without generous financial support from the Connecticut Department of Agriculture through the Agriculture Viability Grant Program. The Town of Lebanon contributed part of the matching funds as well as staff time and valued insights. This project is possible due to the time and contributions of Ty Krause and Marilu, Colleen as well as the other members of the Randall and we are grateful.

Geoff Picard, Lyman High School educator and his students gave us such insights of students pursuing a career in agriculture. Additional funding to match the project was provided by Connecticut Resource Conservation and Development's Environmental Review Team and contributions by our ERT team members, Randy Steinen, Charlotte Pyle, Hank Gruner, Ann Kilpatrick and Joe Cassone of CTDEEP and Jean Pillo of the Eastern Connecticut Conservation District which were critical to property access evaluation.

Thank you, Jim Hyde (NRCS), Hannah Huber and Ben Roosa for support just when we need critical input from NRCS and to John Guszkowski, AICP, who provided us with valued affordable housing perspective.C. J. Lammer of the Conway School help guide us through the application at the Conway School and supported us in the faculty selection process with many visits and insights.

Jason Nowosad, Robert Chang and Charlotte Ross, thank you for the perspective of new farmers and the hurdles they face creating sustained Connecticut grown food for residents. Rachael LaPorte and Mary Buchanan, you moved on to other ventures but your insights at the first meetings were critical in understanding demand and supply for farm produce. CT RC&D staff were vital to completing this report and took time from their other projects to help.

Lastly, thank to the project team who went above and beyond their contractual obligations with ongoing discussion, resources, and insights.

Jeanne Davies, AICP_ Project Planner
Executive Director, CT RC&D

REPORT CONTENTS

A INTRODUCTION

A 2021 report published by the American Farmland Trust in cooperation with the Department of Agriculture, “FARMLAND NEEDED How Connecticut Can Help Farmers Access the Land They Need to Succeed” was introduced as the “first land access report released by the Connecticut Department of Agriculture that provides a detailed overview as to the challenges and barriers farmers face in gaining access to land and those looking at exiting farming. The report also outlines how the Connecticut Department of Agriculture and service providers can work together to strengthen land access opportunities across the board.”

This report incorporates the tenets of research and recommendations by Connecticut’s agriculture leaders and outlines a template process to build a cooperative agriculture center, including housing for six to ten farmer families and associated farm workers. The overarching project goal is to outline the building blocks to create an agriculture center for new and emerging farmers that will ensure sustainable and long term growth, investment and potentially build farmer equity toward the purchase of an existing agriculture business or land for an owner occupied farm.

Connecticut Resource Conservation and Development (CT RC&D) has partnered with the Town of Lebanon to design a planning study toward evaluating the process and building a template for an affordable farming pilot project in the Town of Lebanon. The process evaluated two farms, Krause Farm and Our Acres (Randall) Farm in Lebanon. The report has been designed to assist other Connecticut municipalities or sponsors who want to support or invest in a project of this type.

AFFORDABLE FARMING ACCESS IS DEFINED AS A WORKABLE CORRELATION BETWEEN THE FOLLOWING:

- **Real estate**: Access to land through donation or purchase
- **Housing:** Provide access or construction of low-cost housing for farmers, either on site or nearby
- **Infrastructure:** Quality of land and existing structures for farm operations
- **Economics:** Strength of supply and market demand for associated agriculture products/produce
- **Fiscal:** Management toward sustainable return on investment and building of equity
- **Mentorship:** Management to support and build farmer skillsets via apprenticeships, cooperative sharing and/or organizational guidance and grant funding opportunities

PLANNING

Connecticut's landscape involves a matrix of crisscrossing or overlapping boundaries, both geographic and governmental, which can either promote or hinder collaborative innovation toward problem solving for farmers. For young and emerging farmers, including underserved populations, seeking to invest their time toward practicing and perfecting the business of farming, the process to fund, find land, do a business plan is challenging at best.

Successful models of agriculture centers which encompass large acreage of more than 100 acres to support a cooperative of one farmer per twenty acres have been built in neighboring New England states.

This planning initiative delves into constructs of successful agriculture centers and explores draft concepts as well as methods to plan for farmland access for new, underserved, and emerging farmers in Connecticut.

Ideally, this report will provide a template toward best planning practices as well as examples to creating affordable farming opportunities as a template for Connecticut to recruit and grow new farmers.

B PROJECT TASKS

- Analyze two (2) sample properties in the Town of Lebanon (one preserved farmland and one unpreserved farmland) and select one farm to design a template for implementing and constructing an affordable farm to include housing.
- Design the template toward highest and best farming practice, including but not exceeding the following: innovation, equity, conservation soil health, renewable farm energy, farm product processing, management offices, building infrastructure, public space for fundraising, access and visibility for marketing and proximity to a commercial kitchen and rural maker space either on the property or at a nearby location like the CLiCK facility.
- Review the needs and issues of new and emerging farmers in Lebanon.
- Hire a landscape designer to draft a template for a cooperative farm support center on the selected farm and evaluate the size and scope needed to support 6-10 farmers with affordable housing on site.
- Identify business and management models and describe successful examples for agriculture centers built in the Northeast.
- Evaluate the management of a cooperative agriculture center team/office for the selected farm toward implementation.
- Create an educational video with project highlights to explain the need for affordable farming in Connecticut and inform municipal leadership as well as potential project sponsors or investors toward crucial planning components in establishing a project of this type in Connecticut.

C

PROJECT PLANNING TEAM & CONTRIBUTING PARTNERS

Connecticut Department of Agriculture

Funding for this report was provided in part by the Connecticut Department of Agriculture (CTDOAG). CTDOAG provides ongoing support and funding to farmers and stakeholder organizations to promote the industry of agriculture in Connecticut.

This project was funded in part by the Connecticut Department of Agriculture's Farm Viability Grant established by the Community Investment Act (C.G.S. Sec. 22-26j).

CT DEPARTMENT OF AGRICULTURE

Connecticut Resource Conservation & Development

CT RC&D is an organization that has cultivated efficiency in programming between partner organizations and stakeholders for over fifty years. While agriculture, land use, conservation innovation, and collaborative solutions are a prime mission for CT RC&D, the overall goal is to coordinate with other organizations that bring a new perspective to solutions.

Connecticut Resource Conservation & Development

The Town of Lebanon

Lebanon is a municipal pioneer in agriculture in Connecticut, forging toward innovation in agriculture preservation and recognizing the importance of agriculture as an economic engine of job creation, food sustainability, and preservation of critical land infrastructure that will sustain Connecticut into the future. In 2015, Lebanon was awarded Community of the Year by the CT Chapter of the American Planning Association "in recognition of its on-going efforts to preserve its agricultural-based economy and town character."

The project team contributed diverse knowledge of affordable access to farming, farmland assessment, nonprofit management, farmer support services, and agriculture center design. The planning process has incorporated individual analysis of building blocks required for a project of this type and recommendations in the design of an affordable farm for the Town of Lebanon. The overarching mission for the team was to guide those who seek to support, sponsor, or build a project of this type. The team meetings raised and explored issues, potential hurdles, and solutions that an emerging or new farmer and a sponsoring organization/ investor might encounter.

Project Team Members site visit at Krause Farm (left to right): Tom Meyer, Phil Chester, Bob Bernstein, Kip Kolesinskas, Mary Buchanan, Jillian Shea, CJ Lammers, Rachael LaPorte, Joanne Sheehan, Amanda Fargo Johnson, Mike Burns

PROJECT PLANNING TEAM

Mike Burns, BWB Solutions, LLC
Mike is principal in a consulting firm that specializes in nonprofit management that works with cross-sector partnerships to multi-funder initiatives and leverages experience in nonprofit, private and public sectors to bring projects and people together. Project Task: provide options toward management and fiscal structures to determine an optimal solution for an affordable farming project. https://bwbsolutions.com/

Kip Kolesinskas, Consulting Farmland Scientist
Kip is a leader in Connecticut's organizational support for agriculture and farmers. He works closely with established and new farmers to optimize solutions in farmland management and participates on numerous state and organization committees such as Working Lands Alliance and the Farmland Land Access Working Group. Project Task: evaluate soils and farmland infrastructure on the two sites toward recommendations for optimal layout and best management agriculture practices.

Bob Bernstein & Matt Hunger, Consultants for Equitable Farm Access, LLC
Bob and Matt cumulatively have extensive experience, leveraging funding, obtaining farmland, managing and operating agriculture centers in several New England states and New York. Project Task: Identify methods and opportunities for creating an agriculture center on one or both identified farmland properties in Lebanon. https://equitablefarmaccess.com/

Leigh Duffy, CLiCK (Cooperative Licensed Commercial Kitchen)
Leigh has experience with the market side of farming and support of local farmers with opportunities to process and market products made from local produce. This includes how to connect with entrepreneur chefs and culinary artists at CLiCK. Project Task: Provide an overview of alternatives available to on-farm processing home production, selling produce their produce to market chains, training, collective marketing alternatives, and the structure of a community kitchen. https://clickwillimantic.com/

Joanne Sheehan, Southeastern Connecticut Community Land Trust
Joanne provides an understanding of the mission of community land trusts including holding land for the development and stewardship of permanently affordable housing, land for food production, green space, and facilities for community organizations. Project Task: Provide an overview of community land trust structure as an alternative for an affordable farming project. https://sectclt.org/

PROJECT PLANNING TEAM

Jeanne Davies, AICP, Connecticut Resource Conservation & Development (CT RC&D)
Jeanne has over 35 years experience working to build collaborative planning across organizations and government agencies. Project Task: Project management and team coordination including final plan draft and contributions of statistical data, transportation access, grant funding resources, and infrastructure overview. https://ctrcd.org/

Amanda Fargo Johnson, CT RC&D Farm Energy Program
Amanda is the CT RC&D Agricultural Programs Director working for over 14 years with agriculture producers through a variety of programs, including assisting farmers with installing energy efficient and renewable energy projects. She also manages the FarmUP & Veteran FarmUP programs which provide support to new and emerging farmers with assistance on navigating support services and funding. Project Task: Provide overview of cost saving energy and equipment sharing options in Connecticut to foster cost efficient options in building an affordable farming project. https://ctfarmenergy.org/

Dorothy Kinney-Landis & Rachel Tanzer, Conway School of Landscape Design
Dorothy and Rachel are graduate students at the school who dedicated a term project to research, analysis, and design of a template for an agriculture center at Our Acres Farm. Project Task: Create a dynamic design and report on the optimal conservation based farm and building layout and management alternatives for Our Acres Farm. https://csld.edu/

Emily Deluca, Crosscourt Media
Emily, an award winning filmmaker, has created and produced education films for agriculture and conservation innovation with CT RC&D for the last four years. Project Task: Produce an engaging educational short film with numerous interviews toward a message of the importance of support for affordable farming in Connecticut. https://crosscourtmedia.com/

Pauline Galezowski, Marketing Design Consultant
Pauline brings experience from her design and outreach work with university based advocacy programs. Project Task: Work with CTRC&D staff to layout design and post to social media and website.

CONTRIBUTING PARTNERS

- **Town of Lebanon** https://www.lebanonct.gov/about-lebanon/pages/lebanon-farms
- **The Randall Family** (Marilu & Colleen), Our Acres Farm
- **Ty and John Krause,** Krause Farm
- **Lyman High School** – Geoffrey Picard, faculty and students: https://www.lebanonct.org/o/lmhs
- **Natural Resources Conservation Service**: James Hyde, State Agronomist https://www.nrcs.usda.gov/wps/portal/nrcs/site/ct/home/
- **CT RC&D Job Jump Start Program**: Ben Roosa, Hannah Huber (Nutrient Management Planners)
- **John Guszkowski,** Tyche Planning and Policy Group https://www.tycheplans.com/
- **Charlotte Ross & Jonathan Janeway,** Sweet Acre Farm, Lebanon, CT https://www.sweetacrefarm.com/
- **Jason Nowosad,** Aries Farm, Lebanon, CT https://ariescrossing.blogspot.com/?fbclid=IwAR1b6Igc2ndo8ZVLK1ozoVq3onhGrMdLHEpw5ieACiiW8kndgqC-oKoDo5g
- **Robert Chang,** Echo Farm, Woodstock, CT https://echofarmct.com/
- **Rachael LaPorte,** Chef and Food Systems Analyst
- **C.J. Lammers,** Program Manager, Conway School of Landscape Design
- **Mary Buchanan**, Community Resilience Planner, CIRCA
- **Jillian Shea,** Youth Education and Outreach, CT RC&D

D PROJECT FOUNDATION

CONNECTICUT'S NEED FOR AFFORDABLE FARMING

Factors to be considered when investing and supporting Connecticut's and New England's agriculture future include an understanding of emerging patterns of agriculture practice nationwide. From wildfires, drought, changes in weather patterns, water supply, and flash flooding, changing conditions with climate may hasten the need for Connecticut along with other New England states and New York to proactively increase agriculture production in creative ways. In 2021, Connecticut agriculture industry hosted an estimated 5,500 farming operations on over 380,000 acres dedicated to agriculture and livestock.

As a region New England states and New York have a comparable land area and farm operations equal to California, a major national agriculture producer. While current crop variety is less diverse in New England and New York, there is an opportunity to promote diversification and cost effective sustainable local agriculture in Connecticut and New England.

Connecticut is part of a regional consortium of agriculture innovation that can adapt to new technologies and farming methods. As an example, a New Hampshire project was recently awarded a $25 million USDA grant toward hydroponic production that is expected to help reduce shipping times to eight hours to the grocer's shelf, compared to seven to 10 days from the western United States or Mexico. The company, a subsidiary of Boston-based American Ag Energy, has the interest of supermarkets, a restaurant distributor, and some universities. A similar project is moving forward in Bellingham, Massachusetts.

The U.S. Department of Agriculture notes that hydroponics, or growing plants using mineral nutrient solutions in water, without soil, is a growing area of commercial food production. The largest in New England, Backyard Farms in Madison, Maine, produces upward of 30 million tomatoes each year for supermarkets regionally. There's a new one in Loudon, New Hampshire, that can produce up to 3,000 pounds (1,361 kilograms) of salad greens a day.

University of Connecticut Analysis of Agriculture's Economic Positive Growth

"A 2015 analysis reveals that depending on the model used, the total impact of Connecticut's agricultural industry on the state economy was between $3.3 and $4.0 billion, measuring the value of agricultural output as statewide sales generated directly from the industry and through spillover effects on other industries.

- **The estimated output impact translates into nearly $1,127 in sales per Connecticut resident.**
- **Every dollar in sales in the agricultural industry generates an additional two dollars in the state economy. In addition, the Connecticut agricultural industry generates between 20,007 and 21,696 jobs statewide, contributing from $759 to $899 million in wages.**
- **Every million dollars of the agricultural production sector's direct sales generate 7 to 32 jobs. Overall, the agricultural industry in the state generates more jobs per million dollars of sales than nearly any other sector in the rest of the state economy.**
- **Agricultural production is more labor intensive than agricultural processing, generating two thirds of the industry's jobs.**
- **In sum, the agricultural industry has a critical and significant impact on the economy of Connecticut in output, jobs, and quality of life: up to $4.0 billion in output, 21,696 jobs, and significant social and environmental benefits." https://are.uconn.edu/wp-content/uploads/sites/2327/2018/03/economic_impact.pdf**

New England agriculture remains a significant contributor in the production of agricultural commodities, ranking number one in organic farm sales and nationally raining in the top ten for variety of commodities. in 2020, USDA and our local state agriculture communities have focused on supporting our producers and farmers to weather these challenging times and to overcome obstacles to assure that our food supply is safe and abundant. New England Annual Bulletin 2020 (United States Department of Agriculture National Agricultural Statistics Service New England Field Office) https://rifb.org/wp-content/uploads/2021/04/New-England-Annual-Bulletin-2020.pdf

Land Access and Farming Affordability

A major hindrance to innovation in agriculture resilience and autonomy in New England is the cost of land and housing, the age of existing farmers, and recruitment of new farmers. Affordable farming solutions, including access to on-site or nearby affordable housing can optimize opportunities for new farmers.

To sustain Connecticut's agriculture business sector, creating affordability as defined in this report, is crucial to transfer of generational farms and creation of new farms. Farming affordability is achieved by prudent business planning, equity investment and support services. What may seem a simple process of cooperatively acquiring land, or indoor or aquatic space to bring new or mid-life farmers is a process yet to be fully analyzed. This report provides a start toward future research and policy initiatives, by exploring the complexities inherent in a cooperative venture for a group of farmers.

Connecticut municipalities as well as state agencies, non-governmental agriculture, affordable housing, and business advocacy organizations as well as universities can support initiatives of the Connecticut Department of Agriculture to ensure new farmers who seek to build an agriculture business in Connecticut have affordable farming alternatives. Concepts of innovation, cooperative cost sharing, and fiscally sound business planning are critical to sustaining new farmers in Connecticut. Land access alone will not ensure continuity of fiscal success for the new farmer. While this report analyzes a land based farming operation for affordability, new avenues both rural, suburban, and urban require further analysis for innovation and affordability.

This report offers a sample template of a rural based agriculture cooperative on existing farmland property of a size to support five to eight farmers. The pilot project for Our Acres Farm in Lebanon, a generational farm in Lebanon, provides one method used by our project team to analyze the property toward building an agriculture center to host six to seven farm families and associated farm workers. The Town of Lebanon generated the concept for merging farmland access with affordable farmer housing and seeks a sponsor to build a project of this type in the town. Therefore, the farm and project concepts were centered and researched in Lebanon.

KEEPING FARMERS ON THE LAND AMERICAN FARMLAND TRUST

• Over 92% of Connecticut's 1,892 senior farmers donot have a young (under 45) farm operator working with them. While this does not mean that these farmers don't have a succession plan, it suggests that the future of many of these farms is uncertain.

• This subset of seniors farming without young farm operators owns a collective $1.4 billion in farmland and buildings and manages 123,000 acres of land in farms. How and to whom these assets transfer will impact agriculture for generations to come.

•Twenty-three percent of principal farm operators in Connecticut have farmed for 10 years or less. These beginning operators produced 7% of the total market value of agricultural products in 2012.

• More than two-thirds of beginners (68%) are 45 and older. These older beginners are often coming to farming as a second or "retirement" career; many are bringing assets to agriculture and will need to plan their own succession soon.

• There are 10% fewer young farm operators (under 45) now than in 2002. There is a particular dearth of young farm operators in some sectors, including fruits, nursery/greenhouse, hay and maple. For senior farmers in these sectors, this shortage of young farmers may prove especially problematic.

https://s30428.pcdn.co/wp-content/uploads/sites/2/2019/09/AFT_CT-FS_F_GainingInsight_GainingAccess.pdf

The goal of this project is to help you, the reader, the sponsor or organizer, understand the steps to consider in building an affordable farming project.

Collaboration between American Farmland Trust and Department of Agriculture: Farmland Access

"The working lands that sustain us are at the crux of our agricultural systems. Without access to secure land tenure, the future of farming remains uncertain for young and beginning famers who wish to invest in Connecticut's agricultural sector. The average age of a Connecticut farmer continues to rise, and many farmers find themselves land rich and cash poor. Developing new ways to incentivize these farmers to pass their working lands down to the next generation of farmers, or those wishing to expand their farming operations, is critical to the future of our agricultural sector. Farmland Needed: How Connecticut Can Help Farmers Access the Land They Need to Succeed is the first land access report released by the Connecticut Department of Agriculture that provides a detailed overview as to the challenges and barriers farmers face in gaining access to land and those looking at exiting farming. The report also outlines how the Connecticut Department of Agriculture and service providers can work together to strengthen land access opportunities across the board." Bryan Hurlburt, CT Department of Agriculture, January 2021

https://portal.ct.gov/-/media/DOAG/publications/Farmland-Needed---How-Connecticut-Can-Help-Farmers-Access-the-Land-They-Need-to-Succeed.pdf

E BUILDING AN AFFORDABLE FARM PROJECT

- **Geography:** *Location, Community, Zoning, Farmland Soils, Transportation, Energy*
- **Housing:** *Real Estate Market, Relative Location to Farmland, Design and Spacing*
- **Fiscal:** Methods of Financing and Ensuring Long Term Fiscal Stability
- **Management:** Options for Fiscal Oversight, Conflict Arbitrator, Funding Solutions, Infrastructure
- **Marketing:** Business, Production, Outreach, Public Relations
- **Cultural:** Cooperative Living, Diversity, Equity, Access, Farmer Selection

Affordability of farmland in Connecticut where real estate values per acre exceed other areas of New England or the United States (USDA NASS August 2022 Report) is a hindrance to growing new farmers in Connecticut. There is a recent initiative by the Land Access Working Group, a partnership initiative of the Connecticut Department of Agriculture, stakeholder organizations, and farmers. The goal is to develop policy, funding, and implementation toward affordable farmland access in Connecticut. With progress on farmland access in place, the next step for the prospective sponsor is land analysis for soil suitability and crop yield as well as town zoning codes and support of agriculture.

"Competition for available farmland in Connecticut is stiff. Aspiring, beginning, and established farmers compete with each other and against developers seeking land for residential, commercial, industrial and, increasingly, renewable energy development. This competition has intensified as farmland conversion in Connecticut continues. According to American Farmland Trust's 2020 "Farms Under Threat: The State of the States" report, 23,000 acres of Connecticut farmland were converted to urban development or low-density residential land use between 2001 and 2016, putting Connecticut in the top three states nationally for the percent of farmland developed or compromised. Conversion and competition continue to cause farmland prices to rise: the 2019 National Agricultural Statistics Service Agricultural Land survey found that the average price of an acre of farmland in Connecticut was $12,200"

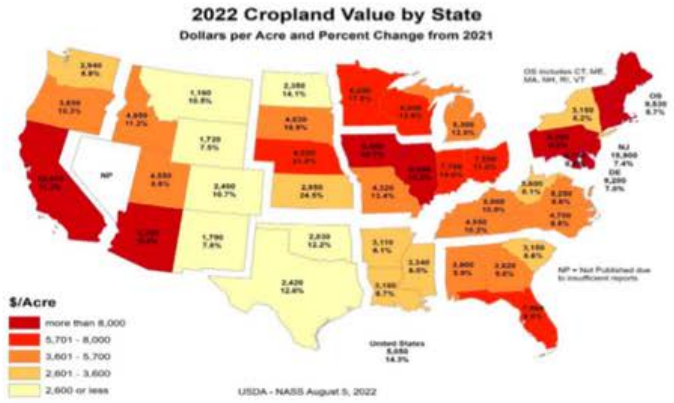
FARMLAND NEEDED REPORT
American Farmland Trust and CTDOAG 2021

FINDINGS OF THE FARMLAND NEEDED REPORT

1. Farmland is unaffordable for many new and beginning farmers.
2. Inhospitable local zoning bylaws and interpretations of Public Act 490 limit the availability and viability of farmland in many communities.
3. Access to more capital is needed to purchase farmland in Connecticut.
4. Insecure farmland tenure impedes efforts to establish/grow a farm business.
5. Barriers to farmland access and land ownership are even higher for Black, Indigenous, People of Color (BIPOC), and refugee farmers.
6. Farmland seekers see conversion of farmland, especially to residential and solar development, as a direct threat to their ability to access farmland.
7. Climate change is affecting growing seasons and farm viability making it harder to invest in farm businesses without access to secure land tenure.

Farm Real Estate Average Value per Acre – Regions, States, and United States: 2018-2022

Region and State	2018	2019	2020	2021	2022
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Northeast	5,550	5,690	5,710	6,000	6,490
Connecticut	12,300	12,200	12,000	12,500	13,700
Delaware	8,410	8,950	8,950	9,300	9,800
Maine	2,370	2,410	2,490	2,600	2,860
Maryland	7,860	8,060	8,080	8,670	9,700
Massachusetts	10,900	11,100	11,300	13,700	15,200
New Hampshire	4,900	4,980	5,000	5,050	5,350
New Jersey	13,500	13,500	13,600	14,400	15,400
New York	3,230	3,250	3,150	3,270	3,450
Pennsylvania	6,250	6,470	6,600	6,800	7,350
Rhode Island	15,200	15,600	16,000	16,400	17,500
Vermont	3,540	3,630	3,550	3,900	4,200



AGRICULTURE CENTER MODEL FOR AFFORDABLE FARMING ACCESS

Project team looking at soil samples at the Krause Farm

Agriculture Center Model for Affordable Farming Access

Through the project, the agriculture center model implemented in neighboring states and New York appears to be an optimal model for creating affordable farming opportunities for new and emerging farmers in Connecticut. This model, which has been constructed in other Northeast states provides a fiscally prudent option for sponsors seeking to support affordable farming which also includes housing access and sustainable farmer growth. The model is based on cooperative use of large tracts of farmland, either with conservation easement or through direct purchase. The following sections outline the process for evaluating the process for building an agriculture center: analyzing the land, the community, fiscal and management.

Assessing a Property for a Farming Project

Agriculture in Connecticut is diverse both in potential—crops, business concepts, customers, markets—and in needs for land, infrastructure, equipment, labor, housing, support businesses, and technical, financial, and community support.

Agriculture already exists in all 169 towns in Connecticut. It has the potential to grow and expand local and regional food access, diversify our economy, provide jobs, recreation, scenic vistas, and protect cultural resources, as well as ecosystem services such as managing water quality and quantity, wildlife habitat, and carbon sequestration.

Agriculture has a significant role to play in climate change mitigation, adaptation and resiliency for food systems for Connecticut residents. It can be at a variety of scales from indoor production of microgreens in a residential home, to hundreds of acres of row crops or hay.

GEOGRAPHY

SOIL ASSESSMENT

Consider the soils first

A property that will support the highest diversity of forms of agriculture and produce the greatest yield with the fewest inputs and least potential for negative natural resource impacts will be dominated by soils that are well drained, loamy textured, and nearly level to gently sloping (0-8% slopes). That said, other soils may produce high yields and be appropriate for agriculture use but may need special management (conservation practices) or only be suitable for certain uses. Some soils, especially in urban and suburban communities may require extensive restoration due to contamination, soils disturbed by human activity (cutting and filling), shallow depth, surface stones, etc. In addition, Connecticut has many areas of high-quality soils that have grown back to invasives, forbs, shrubs, and even forest. These land covers can also be successfully cleared or managed for agricultural products.

To evaluate the soils and their suitability, a great place to start is the Soil Survey of Connecticut, which is an inventory of the soil resources of CT displayed as an aerial image base with soil polygons shown, corresponding interpretations, and physical and chemical data for the over 100 different soils mapped in the state. Completed by the USDA Natural Resources Conservation Service (NRCS) in cooperation with the National Cooperative Soil Survey, it can best be accessed through the Web Soil Survey; a free online tool; Web Soil Survey - Home (usda.gov) . Data can also be obtained for download to GIS systems, and a number of interpretive maps made from this data can be found on the CT ECO website; www.cteco.ucnn.edu . One of the soil interpretations that provides a useful “snapshot” of a parcel’s agricultural potential is the USDA Land Capability Classification which rates the different soils shown on the map from 1 to 8; 1 being soils with the fewest limitations. Subclasses that note the soil limitation, such as wetness, or stoniness are also shown. The map analysis can be created in the Web Soil Survey.

These soil maps are a great resource but are only to be used as a planning tool; they are not a substitute for an onsite investigation by a trained soil scientist. Soils are changing all the time due to excavation, land use changes, drainage, etc. In addition, Connecticut’s soils are very complex, so there is always the possibility for small areas of both better (or worse) soils existing within a mapped area (called inclusions) that couldn’t be shown on the map due to scale. Assistance with using the web soil maps can be obtained from CT NRCS; https://www.nrcs.usda.gov/wps/portal/nrcs/site/ct/home offices or Connecticut’s five soil and water conservation districts; www.conservect.org.

Farmland Assessment Insights for Our Acres (Randall) Farm

Soil Resources

The parcel is dominated by complex soil landscapes. Kip Kolesinskas concentrated on the 194 acres of the property that is protected with a State of Connecticut Farmland Preservation Easement, with the property still being privately owned. It offers a wide variety of soils which would be valuable in providing the flexibility needed to support a wide variety of agricultural businesses, and provide resiliency from the effects of climate change. The farm contains approximately 100 acres of soils capable of producing high yields under sustainable practices as well as provide significant areas of wetlands, watercourses, and forest best suited to habitat, passive recreation, forest products, and foraging. I offer this analysis to display the insights that can be gained from the NRCS Soil Survey information. The Soil Survey information, obtained from the USDA Natural Resources Conservation Service's Web Soil Survey https://websoilsurvey.nrcs.usda.gov , is an excellent planning tool, on site investigations are essential before decisions are to be made for business or conservation planning. I have not included the soil Map Unit descriptions for each soil polygon shown on the map, these descriptions provide an overview of significant soil features and properties. They can be downloaded with the soil reports from the Web Soil Survey data.

The eastern side of the parcel, and the northern side along Rt 207 are dominated by glacial till soils formed in dense glacial till. The large open field (approx. 41 acres) is dominated by gently sloping moderately well drained Woodbridge soils (45B) on 3-8% slopes. These soils are capable of producing high yields of many crops, the major limitation is the seasonal high water table that can impact planting and harvesting, especially in a wet year. An onsite investigation showed that there are some unmapped areas of better drained Paxton soils on the highest convex portion of the landscape. In addition, the area mapped as very stony Woodbridge soils (46B) has been sufficiently cleared of surface stones, and has been in silage corn. Without subsurface drainage, the soils in this field maybe too wet for tree fruits, vineyards, or hops. Areas in hay or pasture east of the farm buildings are mapped as moderately well drained Sutton soils (50B, 51B) but would be better mapped as non-stony Woodbridge soils. In addition, there are inclusions of wetter poorly drained soils.

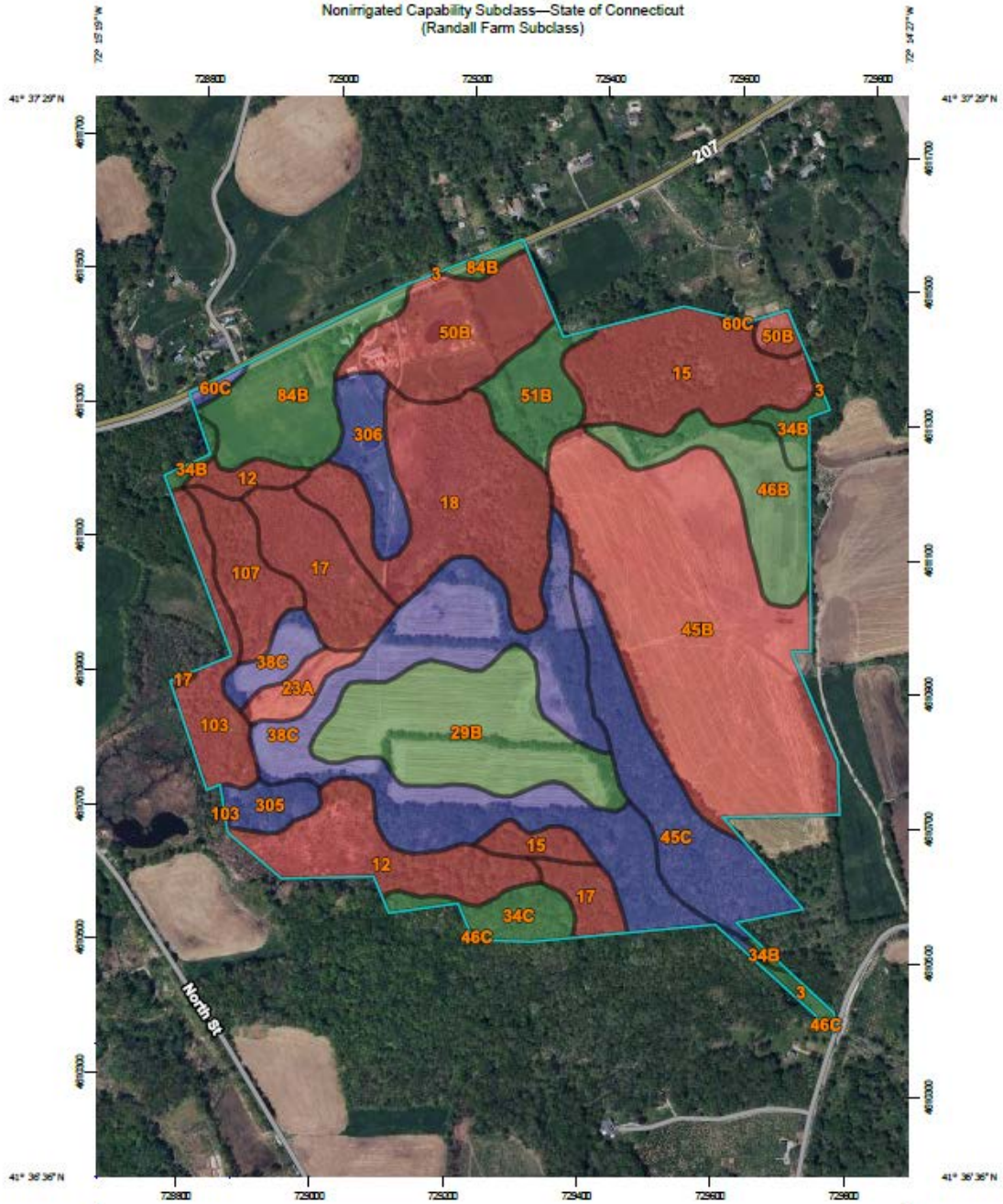
The other significant area of open cropland (approx. 30 acres) is south of one of the wetland complexes and west of the largest cropland field just described. These landscapes are dominated by soils formed in sand and gravel deposits with a loamy to sandy cap deposited by glacial meltwaters. Areas mapped as gently sloping well drained Agawam soils on 3-8% slopes (29B) have excellent potential for a wide variety of crops and forage. The sandier textures and deeper water table warm up early in the spring and can be farmed sooner after rain events. They can be droughty and may require irrigation for the high intensity production of fruits and vegetables. A gravellier than typical plow layer can interfere with planting small seeds. Areas mapped as excessively drained Hinckley soils on 3-15% slopes (38C) are also formed in sand and gravel deposits. An onsite investigation showed that they would be better mapped as the sandier somewhat excessively drained Merrimac soils. The undulating and variable slope can make the farming operations more challenging to layout rows and prevent erosion. A few small wet areas in depressions would also be challenging. In general, these soils have good potential for many crops, an irrigation source would be needed in dry periods. A few small areas have been previously mined for sand and gravel and then restored and revegetated. They are mapped as Udorthents, Pits, Complex (305) and Udorthents- Urban land complex (306).

Most of the wooded portions of the farm are dominated by poorly drained and very poorly drained soils formed in glacial till, sand and gravel deposits, floodplain sediments, and swamp organic deposits (map units 3, 12, 15, 17, 18,103, 107). These soils are dominantly wetland soils and not suited for clearing for more intense agricultural use. They are best managed as habitat, passive recreation, forest, and forest products. Edge areas could be planted to wetness tolerant plants such as elderberry, or that can be harvested for floricultural products, such as winterberry, red stem dogwood, and pussy willows. Some of the wooded areas are dominated by excessively drained to moderately well drained soils (29B, 38C, 45C). These areas could be cleared or managed for more intensive production such as row crops and forage, thinned for silvopasture, managed as habitat, foraging, or forest products.

The portion of the property that includes the farmstead is typical of most house-barn-outbuilding complexes. It contains a mix of natural soils and soils highly disturbed by the cutting and filling of past human activities. The soils appear to be dominated by well drained and moderately well drained soils formed in glacial till. A seasonal high water table and slow permeability rates are expected, and would be limitations to any additional homes with basements or septic systems. Subsurface drainage systems and engineered septic systems can often be used to overcome these limitations. No soil examinations were made in this area. Detailed onsite investigations are necessary as part of determining the best location for structures and understanding soil limitations.

The field just west of the farmstead complex and south of Rt 207 was mapped as well drained Paxton soils (84B). The onsite investigation reveled a more complex landscape. According to the landowner a portion of the field had been blasted, cut and filled to remove some shallow bedrock exposure, and the restored area would be considered Udorthents soils. There were few areas of Paxton soils, much of the slope is better mapped as well drained Charlton soils on 8-15% slopes (60C), and the flatter areas as well drained Agawam soils (29B). Both of these soils are better suited to onsite septic systems should this be needed for septic systems for additional housing or processing, and should the terms of the easement allow it.

Nonirrigated Capability Subclass—State of Connecticut
(Randall Farm Subclass)



Map Scale: 1:7,840 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Erosion
- Soil limitation within the rooting zone
- Excess water
- Climate condition
- Not rated or not available

Soil Rating Lines
- Erosion
- Soil limitation within the rooting zone
- Excess water
- Climate condition
- Not rated or not available

Soil Rating Points
- Erosion
- Soil limitation within the rooting zone
- Excess water
- Climate condition
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

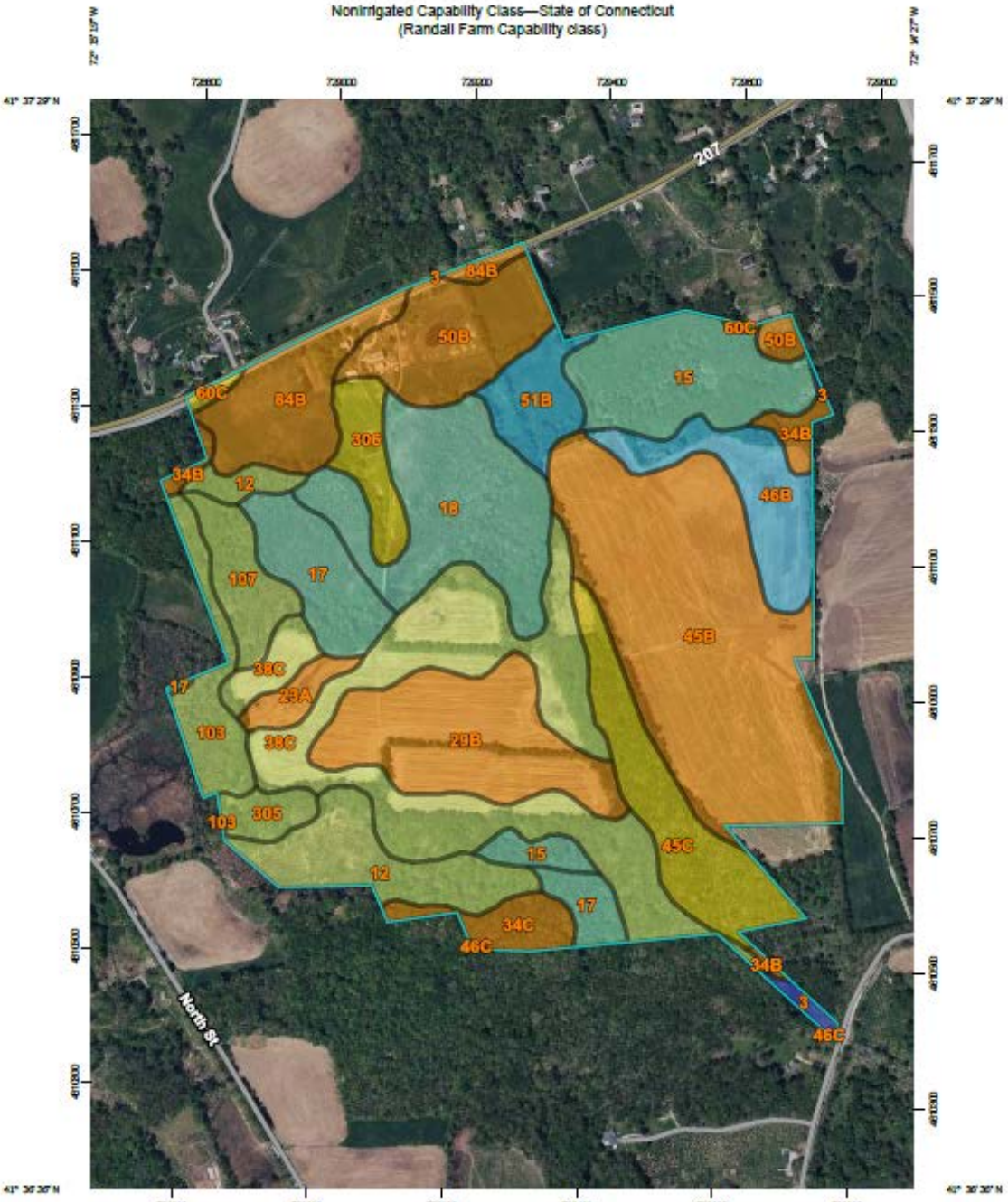
Soil Survey Area: State of Connecticut
Survey Area Data: Version 22, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Nonirrigated Capability Class—State of Connecticut
(Randall Farm Capability class)



Map Scale: 1:7,840 if printed on A portrait (8.5" x 11") sheet.
Meters 0 100 200 400 600
Feet 0 350 700 1400 2100
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

Soil Rating Lines

- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

Soil Rating Points

- Capability Class - I
- Capability Class - II
- Capability Class - III
- Capability Class - IV
- Capability Class - V
- Capability Class - VI
- Capability Class - VII
- Capability Class - VIII
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

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Soil Map—State of Connecticut
(Randall Farm Soil Map)
207
North St
3
84B
50B
60C
15
51B
306
34B
12
18
46B
107
17
45B
38C
23A
103
29B
305
45C
34C
46C
Map Scale: 1:7,840 if printed on A portrait (8.5" x 11") sheet.
Meters
Feet
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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Web Soil Survey URL:
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Infrastructure Needs for Our Acres (Randall) Farm

The majority of the crop fields are a distance form the house and barns. High-quality year-round farm roads are necessary for moving people, crops, animals, materials, and for safety/security. There are a number of farm roads on the property, many are in need of repair and upgrades where they cross wet soils and slopes. The two main farm roads to access the larger fields have sections in fair to good condition, with portions in need of repair. The north-south road that connects directly from the farmstead to the field has been repaired since it was washed out from beaver activity and a storm. With proper engineering design, open botton culverts, or a bridge may provide a more aquatic habitat friendly stream crossing to the fields. The north-south road on the eastern border of the farm needs less improvement, specifically in several low areas with wet soils and undersize culverts. Depending on the future farm enterprises and activities additional farm roads may be needed.

Without access to the house or barns or other outbuildings to evaluate their utility or structural integrity, an assessment by tradespeople and perhaps a structural engineer would be advised. Often older farm building requires extensive upgrades to plumping, electrical service, roofs, doors, and structural support to meet the needs of todays equipment, animals, and the requirements for processing, product storage, retail, and event space. The location (south of busy Rte 207) is conducive to a farm stand or agro-eco tourism business.

Perimeter fencing for livestock is present in some fields closer to the farmstead. Additional fencing would be needed for more animal agriculture, or to protect crops from deer and other wildlife. Our changing climate includes periods of short-term intense droughts. A reliable water source is critical to a farm's success. There are wells currently on the property but their yield and other details have not been evaluated and are unknown. The presence of sand and gravel deposits would indicate the potential for a new high yielding well on portions of the property. Although there are ponds and streams on the property, they would not supply the potable water needed for washing/processing, and surface waters can be a source of contaminates and disease for livestock and crops.

Natural Resource Concerns for Our Acres (Randall) Farm

Currently the larger fields on Randall Farm are leased for dairy support land and are producing hay and silage corn. It appears that reduced or no till planting techniques are being used. A cover crop was present which had been killed by a light herbicide application prior to planting. There was evidence of compaction in the fields in some areas, most likely due to planting and harvesting on wet soils in the unusually wet 2021 growing season. Continued use of reduced/no till and use of cover crops mixes that include tillage radish will help restore soil structure. No soil tests for nutrients were available for review. There was evidence of soil erosion in the large field on the eastern side of the farm. The long slope and preferential flow off of the farm access road were contributing causes. Conservation practices would be important to managing this field, changes in row orientation, road improvements, and perhaps a waterway would be needed. Subsurface drainage may be needed for some crops due to seasonal wetness. There are several ponds on the property. It is typically advised to fence livestock out of wetlands and watercourses, and maintain adequate vegetated buffers.

Some of the fields are difficult to farm due to size and configuration, narrow laneways, and tree cover and invasive species that have filled in field edges. Removal of invasives, branches, and dead trees could make these files more useable and productive. Invasive trees and shrubs, and dead trees are present in the wetlands and woods as well. Control and management would improve forest health and management. Conservation plans that could include forest management, nutrient management, habitat management, water management, grazing management, and energy management all provide important tools, practices, and assistance to keep farm operations economical viable and sustainable. Technical and financial assistance are available from USDA Natural Resources Conservation Service, USDA Farm Service Agency, USDA Rural Development, CT Dept of Agriculture, UConn Extension, and Conservation Districts.

Other Soil Survey Interpretive Maps of Value

Land Capability Classification System: See the included the maps on pagefrom the Soil Survey data that were used to create maps and analysis of an easy-to-understand interpretive tool, the USDA Land Capability Classification System. Key soil physical, chemical, and landscape properties are used to designate a rating from 1 to 8 on the soil's potential for agriculture, forestry, and wildlife. Subclasses reveal the reason for any limitations, such as stoniness, hazard of erosion, etc. This can provide a visual map easily understood by non-soil scientists.
Important Farmland Soils- The Soil Survey information is also used to develop ratings and interpretation of the soil map units for purposes of Federal, State, and Local planning. A common use is for the Federal Farmland Policy Protection Act (FPPA), and criteria for federal, state, and local farmland protection programs such as the USDA NRCS ACEP-ALE, and the Connecticut Farmland Preservation Program. The Web Soil Survey data at this time does not include Farmland Soils of Local Importance, which is completed on a town-by-town basis in Connecticut. Information on which soil map units are considered of Local Importance (and how to request a determination) can be obtained from USDA NRCS CT at:
https://www.nrcs.usda.gov/wps/portal/nrcs/site/ct/home. Maps of Important Farmland Soils can also be viewed and downloaded from CTECO at:
www.cteco.uconn.edu

Again, it is important to realize that the soil maps are a snap shot in time, land use changes and land restoration can change a designation. An onsite investigation is always advised before a decision is made.

Other Soil Survey Interpretive Maps of Value

Land Capability Classification System

Maps depicted on pages 23 and 25 from the Soil Survey data are an analysis of an easy-to-understand interpretive tool, the USDA Land Capability Classification System. Key soil physical, chemical, and landscape properties are used to designate a rating from 1 to 8 on the soil's potential for agriculture, forestry, and wildlife. Subclasses reveal the reason for any limitations, such as stoniness, hazard of erosion, etc. This can provide a visual map easily understood by non-soil scientists.

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Private consulting soil scientists that can be hired to pursue onsite investigations to verify the USDA-NRCS mapping, identify important inclusions of different soils, and evaluate test pits and flag wetland boundaries for any planned farm infrastructure. I list of many of these professionals can be found at; https://www.facebook.com/SoilSNE

Evaluate the history, land cover and land uses. Connecticut has a long and varied history of human habitation, and these impacts can affect the suitability for future agricultural use. Due diligence is required. Reviewing historical records, maps, and photos can identify the location of old buildings, orchards, dump sites, roads, drainage systems, etc. This can help prioritize future areas for an onsite investigation. For example, old buildings may be a source of soil contamination from lead paint or a buried storage tank. Connecticut is fortunate to have significant records of aerial photography and digital imaging.

They can be found at CT ECO and the Connecticut State Library; https://libguides.ctstatelibrary.org/hg/aerialphotos

Potential sources of soil and water contamination can be found at EPA and CT DEEP websites which maintain a record of known contaminated sites as well as the surface and groundwater quality rating Department of Energy and Environmental Protection. If an area has been identified as possibly being contaminated, it doesn't mean it can't be used for agriculture. Knowing the level of contamination is necessary to knowing the risks, remediation strategies, and costs. For example, the University of CT Soil Testing lab analysis provides lead testing. Many private labs do as well. Many urban sites have high lead levels; covering the soil and developing raised beds filled with clean soil material is a common restoration strategy.

The past land cover and land use (forested, farmland) influence the soil heath and quality as well. A former crop field may become compacted, or a lack of fertilizer application may show significant nutrient deficiencies that would need to be corrected. An onsite investigation by a conservation professional can identify some of these issues. A soil test for nutrients will be needed once a project is moving forward and crops have been identified. The University of Connecticut Soils Testing Lab; https://soiltesting.cahnr.uconn.edu , the CT Ag Experiment Station, https://portal.ct.gov/CAES/Soil-Office/Soil-Office/ and private labs can perform these tests.

Understanding the current historic land cover or land use of a property is important but should not be a barrier to changing the location of production areas or infrastructure. For example, many barns were located next to watercourses and wetlands to serve as a source of livestock water, springhouses for cooling milk and butter, and even a way to flush manure and wastewater. We know these are no longer suitable practices or needs. A barn may no longer be in an appropriate location for livestock, and animals should be fenced out of riparian areas. Small, narrow fields and farm lanes may be a barrier to current equipment and farming methods. A resource inventory for the parcel can identify critical habitats, areas of high sensitivity for cultural resources, and existing natural resource concerns such as erosion or extensive infestations of invasives. Checking the CT Natural Diversity Database NDDB is also helpful for identifying possible impacts to threated and endangered species.

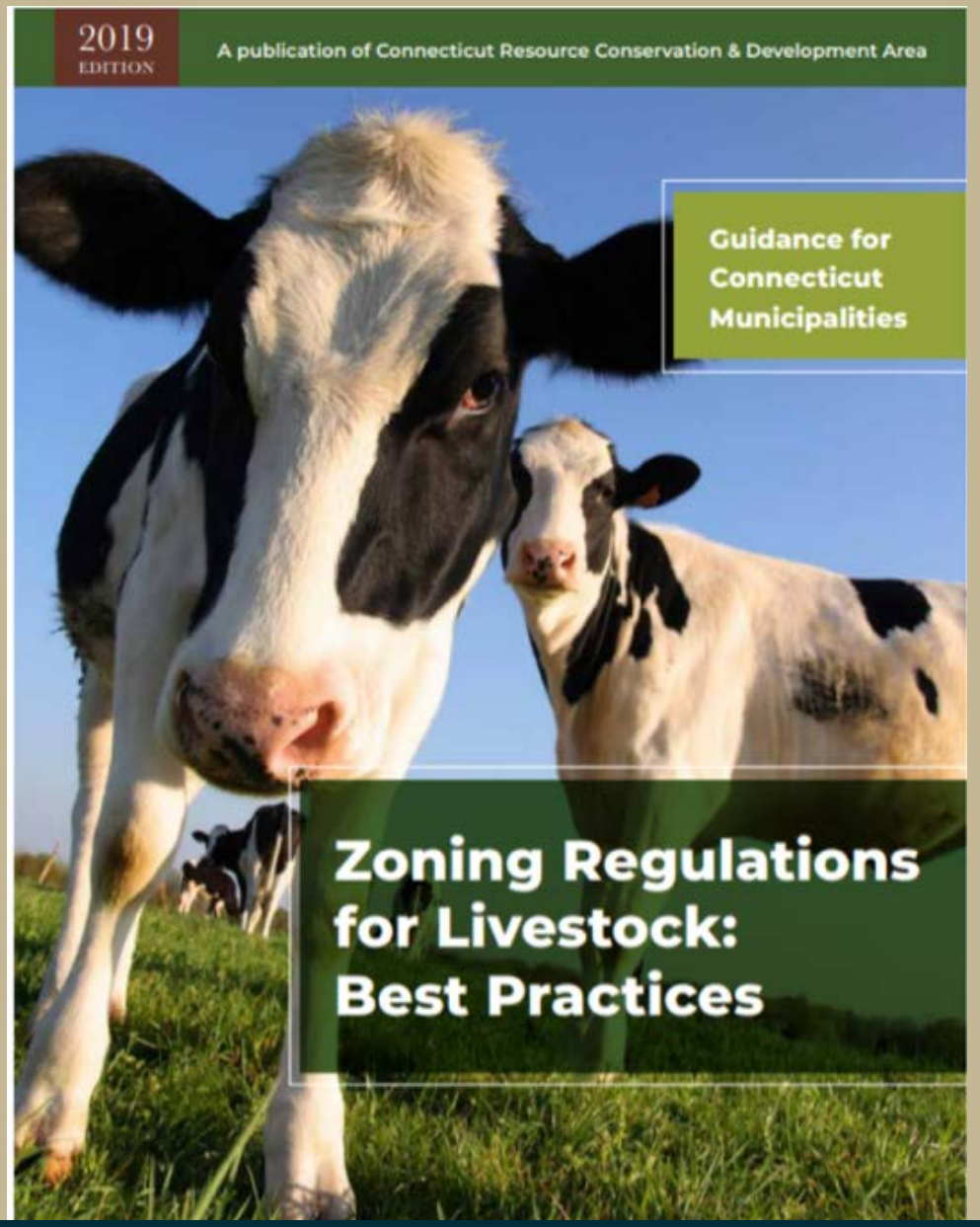
Consider the setting. There are many parcel properties that can facilitate agriculture's success or create significant barriers. What are the surrounding land uses? Homes right up against active fields may result in nuisance complaints from noisy farm equipment and early and late work hours during harvesting and planting. Adjacent forest land often brings devastating deer crop damage; deer fencing, and deer damage hunting permits may be necessary. Having to traverse busy suburban roads with farm equipment to reach fields can be dangerous. Low lying fields can be frost pockets that restrict early or late planting. Runoff from town or state roads can cause erosion and wetness problems. Cell phone coverage or internet access is spotty in portions of many towns and is an important tool for farm businesses.

Farm infrastructure. The diversity of agriculture in CT requires a wide variety of farm infrastructures. The need for affordable housing, onsite or in the vicinity, is well addressed in this report. Climate change has resulted in greater variability and extremes in temperature, moisture, wind, pests, and disease pressure. The result is the need for more farm infrastructure such as high tunnels, greenhouses, storage, wells, better access roads, and structural conservation practices such as diversions and compost and waste storage. The trend toward agritourism, direct sales, creating and processing added value products, and farm stands/stores has also resulted in the need for increased farm infrastructure. Parcels with older existing buildings, wells, roads, fences, may not meet current agriculture needs, or require extensive retrofitting to make them suitable for a different kind of agriculture. A historic barn may not fit modern equipment or have the necessary electrical or plumbing service. Consultations with structural engineers, tradespeople and agricultural professionals are recommended to understand the limitations and costs. In many cases, new building infrastructure may be needed to support the farm business(es). For example, we recommend a reliable irrigation water source for anyone developing a fruit or vegetable operation. Potable water is required for food safety. An old existing dug well is unlikely to meet these needs.

Planning and Zoning

Municipal zoning regulations can support and advocate for innovation and design for modern small farm agriculture. The success of agriculture on a parcel is tied to allowed uses, building location, and other requirements. Connecticut land use staff and municipal leaders and the residents can access numerous resources to learn about the need for agriculture. Connecticut has agricultural professionals who can assist with writing and revising regulations.

The development and support of municipal agriculture commissions is an important tool for creating a farm friendly and well-informed government. Common regulatory considerations may include: animal agriculture structure setbacks, fencing, farm markets and stands, signage, events, housing, and taxing of farm structures, parking for farm stands and land assessment. There are some recent publications that can assist municipalities in developing farm-friendly regulations: CT Planning for Agriculture Guide https://farmlandinfo.org/publications/connecticut-planning-for-agriculture-2020/ The CT Resource Conservation and Development CT Livestock Guide Connecticut Livestock Guide 2nd Edition



Utilize existing tools and expertise

Farmland Assessment Checklists:
UVM- https://www.uvm.edu/newfarmer/land/checklist.pdf

Land for Good- LFG-Farm-Evaluation-Checklist (1).pdf (ctfarmlink.org)

UConn Farm Risk Management Video's on Farm Assessment and using the Web Soil Survey- Soil Health & Farm Evaluation Videos | Farm Risk Management (uconn.edu)

Municipal of Land Trust properties that are being considered for lease or sale to a farmer(s) can receive assistance through the CT Farmlink; www.ctfarmlink.org , a program provided by the CT Dept. of Agriculture through the Connecticut Farmland Trust; www.ctfarmlandtrust.org .

- A basic, easy to use assessment tool especially designed for smaller urban and suburban properties being assessed for school community gardens and farms was developed by USDA-NRCS CT; Connecticut - Instruction Packet (PDF, 140KB) and Soil Quality Cards (PDF, 130KB), 01/2002

Farmers can request the development of a conservation plan through USDA-NRCS, CT;
https://www.nrcs.usda.gov/wps/portal/nrcs/site/ct/home
which includes an assessment of existing conditions and helps develop strategies for addressing natural resources issues compatible with the farm operation. Existing farm infrastructure and conservation practices are typically evaluated as well.

In summary, a thorough soil site assessment and a resource inventory are critical to the future success of farm businesses. Understanding the soil resources' potential and limitations is an important first step. The historic land covers and land use can identify challenges and opportunities. Farm infrastructure is critical, and often expensive to maintain or improve and requires careful evaluation as consideration of the future farm business plan and capabilities and needs. Local regulations can either support or prohibit a farmer's economic viability.

- For urban or areas of redevelopment, contaminant analysis and brownfields assessment would be a critical first step to ensure that produce grown and harvested is free of contaminants. NRCS and USDA are helpful partners in a project of this type with specialized equipment.

Lyman Hall High School
Agriculture Program: Greenhouse

Access and Transportation

Depending on the type of facility and the type of public interaction or access desired by the farmer(s), the property should be evaluated for access. If the site plans to support a farmstand or event center, workers will be needed to support the center. Understand your parking needs and egress to the public road, permits required for driveways, and layout so that the least favorable soils to farming are used for parking. Farm workers may also be required for planting and harvesting, construction. If the workers are not living on the property, research the public transit system in the area and whether on-demand stops are provided near the farm.

Connections to Education- Training- Agriculture Schools

There are numerous agriculture programs in high schools and schools of higher learning throughout Connecticut. Interviewing students and understanding their future goals provides insights into their needs and aspirations. What do they want to farm? Are they planning on staying in Connecticut to farm? What are the hurdles they anticipate to farm in Connecticut? How can they been a source of support and inspiration for your project. http://ctffa.org/index.html

LISTENING TO THE COMMUNITY FOR INNOVATION FARMING

A coalition of residents in Minneapolis' East Phillips neighborhood wants to turn city land close to the Midtown Greenway into aquaponics farms, affordable housing and a neighborhood-run bike shop Residents and local politicians said the potential development project is a step in the right direction in a neighborhood that has been fighting to rid itself of industrial plants and pollution. But city staff said they have to further study the city's needs to determine if the neighborhood group's plan could work at the property where a public works expansion is in the works and cafe.

Star Tribune NOVEMBER 28, 2017

https://www.startribune.com/neighborhood-group-wants-aquaponics-farms-bike-shop-and-cafe-at-east-phillips-site/460628423/

Energy Options for Farms

Saving energy means saving money. For farms and rural small businesses saving every dollar counts. When energy loads are reduced it also means improved air quality and public health for the community and by reducing greenhouse gas emissions it also mitigates climate change. That is why Connecticut businesses (farms included) should seek out ways to make energy efficiency improvements and implement renewable energy as part of their operations. By reducing energy needs you reduce energy waste and lower the demand on the grid which drives utility costs. There are no and low costs ways that farms in the state can reduce their energy consumption, and for those who install renewable energy systems they are sustainably leveling out their energy costs for years to come.

The Connecticut Farm Energy Program (CFEP) is a program of the Connecticut Resource Conservation & Development that began in 2009. CFEP provides technical assistance to farms and agriculturally based rural small businesses by raising awareness about energy conservation and efficiency, while promoting alternative and renewable forms of energy in Connecticut. There are various state and federal programs available in Connecticut for agricultural producers and rural small businesses who want to implement energy efficiency and renewable energy projects as well.

In working with partners, the CT Farm Energy Program has produced and updated several editions of the CT Farm Energy BMP guide [1]. The guide provides suggested practices to conserve and reduce the use of energy based on the type of farm through the implementation of energy efficiency measures. To assist agricultural producers with energy efficiency measures there are financial incentives and grants available from Energize CT (administered by Eversource and UIL), USDA NRCS through EQIP, and USDA Rural Development through the REAP program. Specifically, the USDA REAP program currently offers a grant of up to 25% and a guaranteed loan option as well for those who are eligible applicants with projects that are also eligible. When looking at a cooperative farm model some of the available programs on the federal, state, and local level may or may not be eligible for assistance depending on the structure of the ownership of the land, buildings, and business. Each situation should be evaluated accordingly to ensure eligibility.

Those not located in an Eversource or UIL service area but are serviced by municipal power companies should contact their utility directly before considering an energy efficiency project as each offers their own level of energy efficiency incentives. For example, the town of Lebanon, CT is serviced by both Eversource Energy and Bozrah Light and Power. In the case of Lebanon approximately 2,2200 properties or 2/3 of the town is serviced by Eversource and the other 1/3 is serviced by BLP. It's best to contact the CT Farm Energy Program or the utility program administrators directly to see if your farm or business and project are eligible for assistance.

Why does efficiency matter?

In 2021 Connecticut's energy efficiency programs through Energize CT generated 62.1 million dollars in energy savings. The state has a history of ranking as one of the top 10 states in the country for energy efficiency by the American Council for an Energy-Efficient Economy (ACEEE) since 2000 [2]. The best dollar spent on energy is the one not spent at all, and energy efficiency improvements can do just that along with providing good ROIs (return on investment). Some farms see the costs of upgrades paid off in just a few years or less depending on the level of incentives received combined with the energy cost savings as a result of making energy efficiency improvements.

Once an operation is efficient the next step is to consider implementing renewable energy to offset usage and costs. Typically, in CT the dominant form of renewable energy used is solar PV installations either placed on rooftops or as ground mounts. Additionally, other forms of renewable energy in the state can include geothermal, anerobic digesters, renewable natural gas, biomass, compost heat recover, wind, and hydro-electric installations. As a result of a farm energy geothermal pilot program administered by the CT Farm Energy an Agriculture guide to geothermal is available when considering this type of renewable energy [3]. When a farm is considering installing renewable energy for on-farm energy use they should consider current and future needs. A third-party review from a program like the Connecticut Renewable Energy Assessment and Assistance Program (CTREAA) would provide information and assist with the siting and projected costs for a particular location and energy load could be a good option, especially if it is for a cooperative farm that may have several different farm types and needs on a property. A cooperative farm could have a large system that feeds all the on-site farm operations, or each farm could individually install their own energy system again this will depend on the overarching structure of the cooperative farm ownership model. Once the planning piece has been considered it is best to get 2-3 quotes from installers in order to compare equipment being offered, warranty information, and level of assistance in applying for some of the state and federal programs offered.

There are some innovative ways to implement energy efficiency and renewable energy on farms. One example in recent years was a pilot project that the CT Farm Energy Program hosted in partnership with CT DEEP and US DOE on a CT dairy farm where a compost heat recovery system was sited. The farm already had a compost business operation in addition to their dairy farm. By installing an automated compost aeration system and heat recovery equipment from Agrilab Technologies Inc. the farm was able to save time, space, and costs by reducing labor and utilizing captured renewable heat for process water and building space to the dairy operation. In addition, the system enabled the farm to more efficient and quickly produce a composted product. From using solar to pump water in remote fields for livestock, to using cow manure to produce electricity and biogas there are numerous ways farms can innovatively implement renewable energy on their farms.

In recent years there has also been a lot of interest around creating large solar fields in order to deploy clean energy to meet state renewable energy goals. These ambitious goals include Connecticut recently committing to a goal of getting 100% of all energy from zero carbon sources by 2040 supplied to electric customers in the state [4]. While this demonstrates Connecticut's commitment to decarbonizing the electric sector it also means there is a need to expand renewable energy capacity. Furthermore, at a national level the goal is to cut U.S. greenhouse gas pollution by at least half (from 2005 levels) by 2030 and achieve net-zero emissions in the electricity sector by 2035 [5]. If both the nation and state of Connecticut is to meet these targets, solar power is going to play not only a large but important role in the coming years. One way to increase renewable energy on the grid is by siting large solar fields around the state. There is concern over these projects being sited on prime farmland and core forest.

If a farm or business is considering installing a large-scale solar field project for production of power to the grid, there are several things to consider. Such as the land being used, tax liability for the property use, what happens after the system reaches the end of its useful life, long term use of the land, and the level of income that may be received from leasing the land to a developer for such projects. Currently other states and around the world are more actively installing and incentivizing Agrivoltaic systems for the dual use of farmland. What is Agrivoltaics? Agrivoltaics uses the land for agriculture while also siting solar PV. Typically, these dual use systems require higher costs compared to a conventional ground mounted system due to racking height costs, spacing in order to accommodate growing crops or having livestock on the land, specialized panels and placement in order to accommodate this type of installation. Currently Agrivoltaics are not commonly seen in Connecticut as farms do not have the additional funds it takes to install these specialized systems that utilize the land by combining dual uses. Consideration of siting an Agrivoltaic system on a cooperative affordable farm where multiple farms would benefit from the offset of energy costs would be a way to utilize the land while generating income. It would also serve as a demonstration site to show the feasibility of such system types in Connecticut.

Solar is regulated at the local level as well as by the CT Siting Council. Any system 1 MW or larger is under the purview of the Connecticut Siting Council, any system less than 1 MW is reviewed at the local level by the municipalities planning & zoning regulations. CT Department of Energy and Environmental Protection (DEEP) does not encourage systems to be sited on core forest and has developed the Forestland Habitat Map for use in siting arrays. Any project that is 2 MWs or greater and impacts core forest, must be reviewed by CT DEEP and a letter indicating impacts is sent to the CT Siting Council. Similarly, an application for placement of a solar installation of 2 MW or greater on certain agricultural soils is reviewed by the Connecticut Department of Agriculture, who also submits findings to the CT Siting Council [6].

Towns can be proactive in reviewing their current zoning guidelines for installations in order to ensure a clear and streamlined process for farms and ag based rural small businesses seeking to install renewable energy projects for on-farm and on-site usage.

By installing renewable energy systems farms not only offset their energy bill but may be eligible to generate RECs (Renewable Energy Certificate) as a way to generate additional funds by measuring and tracking the production of clean energy that the system owner is then compensated for. In Connecticut Eversource and UIL customers have the option to bid into these programs. In 2022 a new Energy Tariff Program was launched that was established by PURA in 2021 in place of the existing net metering, residential solar incentive program, and LREC/ZREC programs. The new programs are based on size, the Residential Renewable Energy Solutions Program capacity limit is 25 kW [7]. The other program based on size is the Non-Residential Renewable Energy Solutions Program offers small projects less than or equal to 200kW incentive agreements on a first-come, first-served basis at a fixed price as determined by the Public Utilities Regulatory Authority (PURA). Large projects greater than 200 to 2,000kW are awarded incentive agreements through a competitive solicitation process. Both programs offer a Buy-All or Netting Incentive to choose from. More information about Clean Energy Options and incentives can be found at Eversource's website here: https://www.eversource.com/content/ct-c/business/save-money-energy/clean-energy-options and UIL's website here: https://www.uinet.com/wps/portal/uinet/smartenergy/innovation/distributed_generation/?WCM_GLOBAL_CONTEXT=/UINETAGR_Navigation/Header/SmartEnergy/Innovation/Distributed_Generation

Farms generally want to be efficient as possible in their operations and that includes energy usage. Utilizing current programs and incentives is one way to reduce business expenses for farms of all types. By reducing the energy load of a farm, it also benefits the grid and ratepayers while contributing to health and environmental benefits. Farms should be encouraged and assisted in this process. Looking at ways to encourage farms to implement energy efficiency and renewable energy measures is an example of climate smart agriculture practices that will be needed in order to reach energy goals both at the state level and nationally. Farms can play an important part in attaining these energy goals that benefit their community while keeping their operations sustainable for generations to come. For more information or assistance pertaining to the topics covered in this report visit https://ctfarmenergy.org.

References

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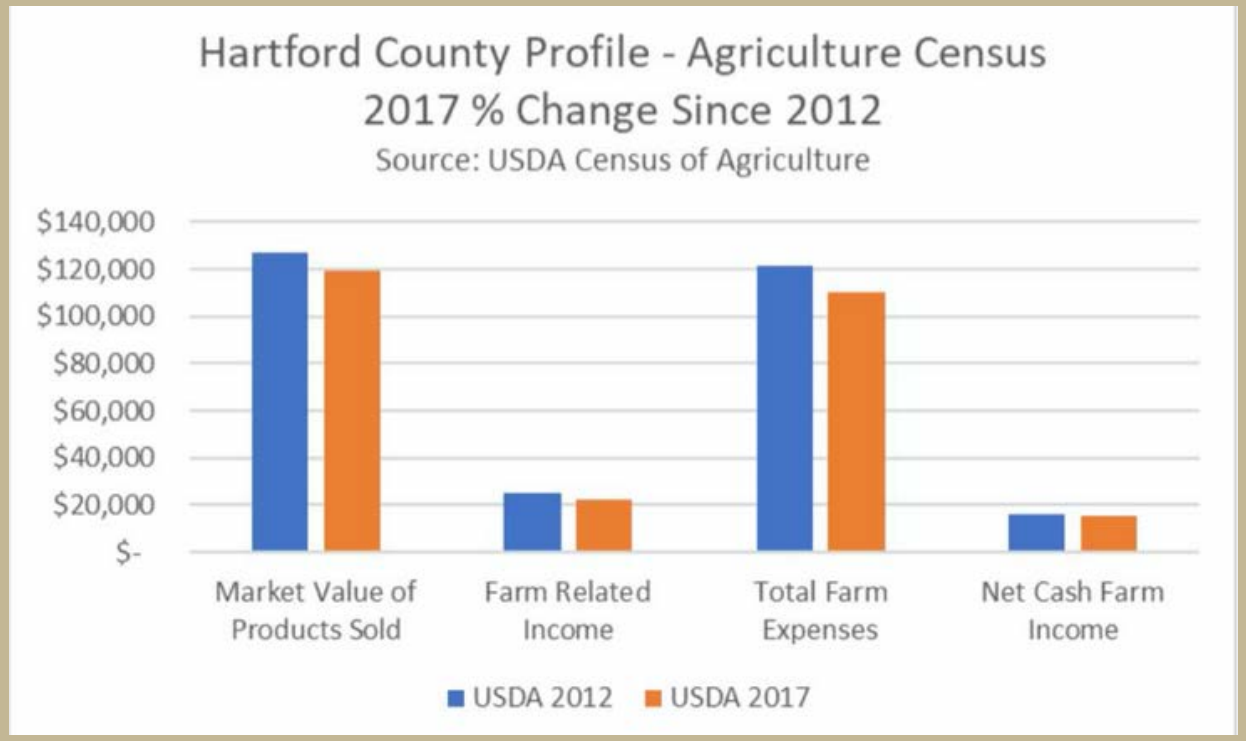
[3] http://ctfarmenergy.org/wp-content/uploads/2018/11/CT-Geothermal-Brochure-2018-1.pdf
[4] https://www.cga.ct.gov/2022/ACT/PA/PDF/2022PA-00005-R00SB-00010-PA.PDF
[5] https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies
[6] https://portal.ct.gov/-/media/DEEP/energy/IRP/2020-IRP/Appendix-A5--Siting-Solar-Fact-Sheet.pdf
[7] Joint FAQ from Eversource, United Illuminating, and The Connecticut Green Bank, pg. 1

HOUSING

This report focuses on land acquisition and housing. Factors to create affordability for farmland and housing point to a cooperative housing model. Attainable, affordable housing is highly competitive in the expensive New England real estate market. There are avenues of innovation emerging in various sectors that could enhance competitiveness for new farmers.

On average, nationally a new farmer's median household income ranges from $24,000/yr for small acreage farmers to potentially $69,000 for larger acreage farmers (especially those who specialize in high demand produce or products, such as silage, landscaping plants, forestry, dairy or poultry). The chart below notes the differentiation between the value of products sold and the net cash farm income remaining for household income and savings. Compared with the ALICE summary chart for Southeastern Connecticut, the new farmer who is vital to sustaining Connecticut's agriculture business sector is categorized as subsisting on a household survival budget. Buying farmland and associated housing is not an easy option for new and emerging farmers in Connecticut.



UNITED WAY 2020 ALICE REPORT FOR SOUTHEASTERN CONNECTICUT

Household Survival Budget

	SINGLE ADULT	2 ADULTS, 1 INFANT, 1 PRESCHOOLER
Monthly Costs		
Housing	$904	$1,291
Child Care	$–	$1,604
Food	$307	$929
Transportation	$357	$826
Health Care	$222	$742
Technology	$55	$75
Miscellaneous	$222	$649
Taxes	$370	$1,023
Monthly Total	$2,437	$7,139
ANNUAL TOTAL	$29,244	$85,668
Hourly Wage	*$14.62*	*$42.83*

Sources: AAA, 2018; Agency for Healthcare Research and Quality, 2018; American Community Survey, 2018; Bureau of Labor Statistics, 2018—Consumer Expenditure Surveys; Bureau of Labor Statistics, 2019—Consumer Expenditure Survey; Bureau of Labor Statistics, 2018—Occupational Employment Statistics; Centers for Medicare & Medicaid Services, 2016—Medicare Current Beneficiary Survey; Centers for Medicare & Medicaid Services, 2019; Centers for Medicare & Medicaid Services, 2019— Medicare - Chronic Conditions; Connecticut Office of Early Childhood, 2018; Federal Highway Administration, 2017; Feeding America, 2019; Fowler, 2019; Internal Revenue Service, 2020; Internal Revenue Service—FICA, 2020; Medicare.gov; Scarboro, 2018; The Zebra, 2018; U.S. Department of Agriculture, 2018—Official USDA Food Plans; U.S. Department of Housing and Urban Development, 2018—Fair Market Rents; Walczak, 2019.

Home value you can afford

$166,540.25

$40,000/Annual Salary - $19.23/Hour – 40 Hour Week

Loan Amount	$156,540.25	Monthly Payment	$933.00
Down Payment	$10,000	Principal + Interest payment	$655.77
Down Payment percent	6.00%	Taxes and Insurance	$208.18
		Monthly PMI	$69.39

USDA Definition of Co-op

Agricultural producers, suppliers, traders form cooperatives to get access to more supplies and markets at a reasonable cost. Their goal is to reduce cost by increasing the scale of their economies. In other words, the more agro-producers combine their efforts in a co-op, the cheaper the total cost of production becomes. Similarly, the traders united under a cooperative can compete in an open market with large industrial corporations in a fair way.

Federal Housing Definition of Co-op *(Eligibility for HUD Loans)*

Affordable home ownership, critical financial benefits such as equity accumulation and a more stable and vibrant community. In summary, co-ops offer:

- Stable and affordable housing costs
- Member ownership, removing the third-party profit motive
- Transaction costs that are lower than those for a conventional mortgage
- Member control, motivating members to be better stewards of the co-op's assets
- Development of resident leadership skills

USDA

USDA works with public and nonprofit organizations to provide housing developers with loans and grants to construct and renovate rural multi-family housing complexes. Eligible organizations include local and state governments, nonprofit groups, associations, nonprofit private corporations and cooperatives, and Native American groups.

- Farm Labor Housing Direct Loans and Grants
- Housing Preservation Grants
- Multi-Family Housing Direct Loans
- Mutual Self-Help Housing Technical Assistance Grants
- Rural Housing Site Loans

APARTMENTS OVER EQUIPMENT GARAGE
KRAUSE FARM

ON-SITE HISTORIC FARM COTTAGES
KRAUSE FARM

ENERGY SAVING-CLUSTERED COTTAGES
UNITY BUILDERS, NH

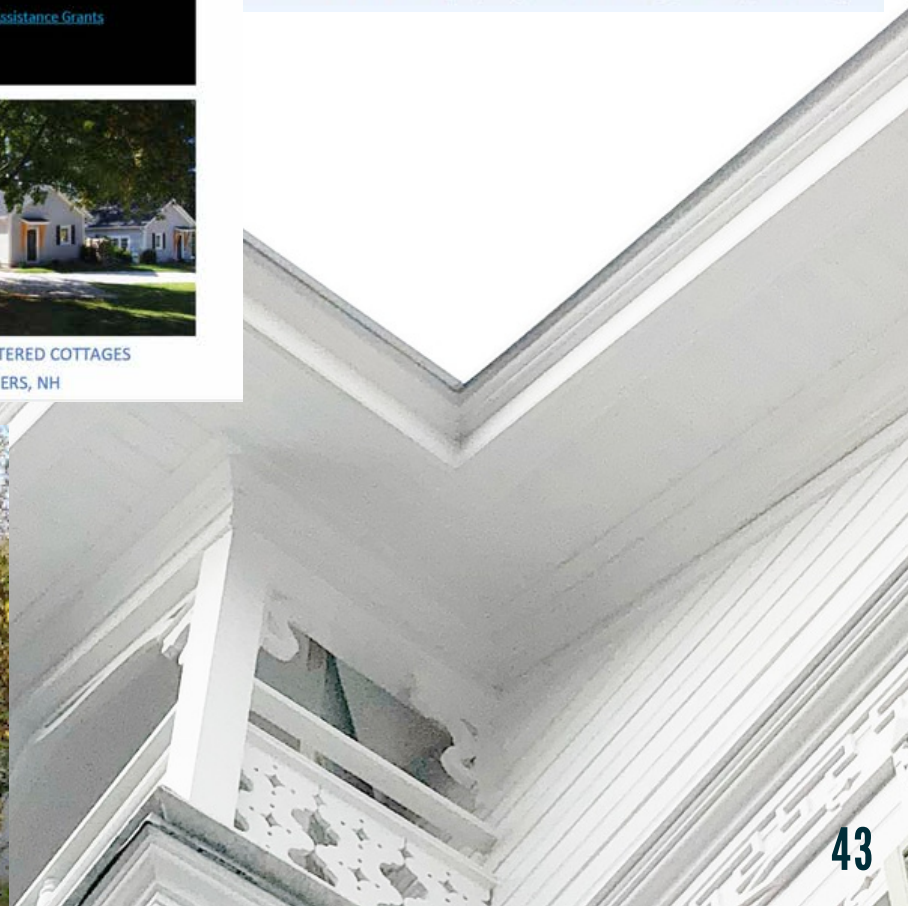
HOUSING

Property Value

$279,700	$275,400
2020 MEDIAN	2019 MEDIAN
± $1,296	± $972

In 2020, the median property value in Connecticut grew to to $279,700 from the previous year's value of $275,400.

The following charts display, first, the property values in Connecticut compared to it's parent and neighbor geographies and, second, owner-occupied housing units distributed between a series of property value buckets compared to the national averages for each bucket. In Connecticut the largest share of households have a property value in the $300k - $400k range.



FISCAL

A project that seeks to foster access to affordable farmland and housing requires a business plan. A well-designed business plan which can take a six month to a year to create guides each stage of starting and managing the project. Fiscal sustainability for both the investor and the farmer is vital to building resilience in Connecticut's agriculture economic sector. This is especially important when the goal is to jumpstart new farmers who will build equity and ultimately take ownership of Connecticut's larger agriculture operations such as dairy and livestock or large acreage produce farms. The business plan serves as a roadmap for how to structure, run, and grow the project It's a way to think through the key elements of your business.

Business plans can help you get funding or bring on new business partners. Investors want to feel confident they'll see a return on their investment. Your business plan is the tool you'll use to convince people that working with you — or investing in your company — is a smart choice.

Understand the Market Demand

- Toward sustained fiscal operations and continuity, local agriculture, especially small farms required certain conditions:
  - Physical land conditions that must exist to meet the requirements of local agricultural production.
  - Certain supply and demand dynamics (i.e., market conditions) must exist for local agriculture to be successful.

Affordability

- As to how to keep it affordable (free or below market rate)
  - Town owned land with the solution
  - Farmland conservation easement on property
  - Foundation or investment sponsors to purchase the land
  - Acquire via eligible nonprofit with USDA and CT State grants and/or loans

Farm to Fork Report

"Each tier of fiscal research informs the next, attempting to create a holistic view of the region's local agricultural potential while answering key questions throughout the process, such as whether the capacity of local food production would be sufficient to support regional food demand and whether consumers in the region show reasonable willingness to pay for the local foods. In this article we take steps to

(1) understand the growing physical potential of the region to meet the needs of local consumers using vegetables and melons as examples,

(2) investigate local supplier constraints and perspectives about expanding local production in fruit and vegetable categories,

(3) survey local consumers on their perceptions and willingness to pay for local produce, applying choice models and selected vegetable bundles, and

(4) identify the role of intermediary markets such as restaurants in increasing consumers' access to local options."

Source: Werner, S., Lemos, S., McLeod, A., Halstead, J., Gabe, T., Huang, J., . . . McConnon, J. (2019). Prospects for New England Agriculture: Farm to Fork. Agricultural and Resource Economics Review, 48(3), 473-504. doi:10.1017/age.2019.33

https://www.cambridge.org/core/journals/agricultural-and-resource-economics-review/article/prospects-for-new-england-agriculture-farm-to-fork/D4F32F297AA83C374F316B9F1A05FB3D

FISCAL RESOURCES

When researching options, its important to look which financial options provide funding for farmland and operation, housing or a combination of both.

- American Society of Farm Managers & Rural Appraisers https://www.asfmra.org/blogs/asfmra-press/2021/07/01/land-loans-equity-crowdfunding-and-beyond-know-you) : offers a couple of unique farm financing options incl. Crowdfunding, but I think all these options presume solo practitioner or for-profit: https://www.asfmra.org/blogs/asfmra-press/2021/07/01/land-loans-equity-crowdfunding-and-beyond-know-you

- Veteran loans; LISC financing; CHFA financing, USDA (rural) financing; Cooperative Fund of NorthEast https://cooperativefund.org/ ; Cooperative Fund of New England https://community-wealth.org/content/cooperative-fund-new-england-0

- Security and Liability – Insurance – liability can be reduced through a nonprofit or some alternative corporate – for overview of corporate structural options; CT Farm Bureau https://www.cfba.org/ is the natural go-to source for insurance and approaches to reduce liability pf the operation. https://www.legalzoom.com/business/business-formation/compare.html

Rocky Corner Cohousing is a terrific Connecticut example of how a cooperative community can be structured.

In this example, the housing is the primary mission rather than the farm. Thirty three acres is supportive to the collective community, but not a production farm for growing farmers.

Tax Structure Options

TRADITIONAL/HIERARCHICAL NONPROFIT (TRUST)

The “owner” specifies parameters on legal and financial investment matters and selects manager or management team to oversee day-to-day & operations BUT can set terms for these matters as well. The organization Is fully accountable to funders/revenues in terms of reporting. Nonprofits have the option to earn revenue but accrued revenue may not be used to profit any one or more individuals. Nonprofits have flexibility to apply for and leverage grant funding for multiple operations and can provide housing as well as can set-up businesses that in-turn benefit the farmers while profits must be returned to the nonprofit for mission purposes.

There is an accountability factor from the farmer collective (LLC) to the sponsoring nonprofit as it is not uncommon for both to file a consolidated financial statement that includes the finances of the subsidiary. As noted, nonprofits can certainly pursue and qualify for a state and municipal bond as there is no expectation for the bond amount to be returned to the state or municipality.
Note that nonprofits alone are not appealing entities to investors, lenders or others who might expect a return on their investment as income is generally viewed when origination is from restricted grants. Donors tend not to favor their dollars being used for paying off debt. Finally, boards are not enthused about debt unless of course they have identified a clear product/service offering that may generate revenue and to pay against debt. This set of expectations explains why a subsidiary, particularly a for-profit, may be more appealing to a nonprofit structure.

The biggest challenge for nonprofits is the ability to borrow from conventional sources with the exception of bonds. The key question is whether Connecticut is predisposed toward funding nonprofits via bonds or loans to build agriculture centers to house new farmers (no cost and no pay-back loans)
One conventional source is: https://farmloans.com/farm-loans/connecticut-farm-loans/ to provide one perspective. One large exception for borrowing by nonprofits is bridge loans which have a set time limit to repay and begin with a plan to raise capital. Trusts on the other hand tend to be nonprofits that begin with a “pot” of money and can borrow against that money presuming a plan for generating revenues that do not drain the pot in the long-term.

CO-OP/COOPERATIVE

This is a multi-family piece of real estate in which a business holds the title to the property. The residents gain equity in the building by buying shares in that business. Co-op residents own a share of the property, but not the deed to the property itself.) Co-ops are self-governed with a 501(c)12 tax status and a board usually comprised of the “members” who bear individual tax liability for value of their share. Because the members are members aka owners, borrowing from conventional sources is possible.

MUTUAL MULTI-UNIT HOMEOWNERSHIP DEVELOPMENT

This model allows each resident a vested financial interest that has a determinable market value, is divisible and gives the owner an exclusive right to occupy a designated unit for an indefinite period.) No board and the residents generally select an overseer/management that approves fiduciary matters. Mutual Housing corporations are 501 (3) organizations and could be subsidiaries of a nonprofit particularly to gain reduced cost overhead and otherwise access to funding sources. For more info: https://www.chfa.org/compliance-and-reporting/mutual-housing-program/ Conventional lending sources are also more accessible because of the shared ownership structure by individual residents.

SHARED OWNERSHIP

This scenario is situation in which an agreement formalizes the co-residence of two or more-family units within the same housing unit. There is no board, rather independent owners with rights and responsibilities defined by agreement. Ownership is essentially shared. Expenses like mortgage or other costs are distributed according to shared agreement. Arrangements could include one owner/buyer making legal arrangements with one or more individuals who contribute to costs as agreed e.g., help pay the mortgage.
For additional info: https://www.sharedhousinginstitute.com/ . Conventional lenders are accessible with this model because there is at least one identifiable borrower who has a demonstrated plan for paying-back debt.

B CORPORATION

This an option that combines nonprofit missions with for-profit structure including shareholders (which helps to ensure pursuit of mission). It might be a good structure as a subsidiary of a nonprofit to gain reduced cost overhead and otherwise access to funding sources. On their own, B Corporations are attractive investment/shareholder options that would be unavailable to nonprofits. Lenders and those who might be shareholders or equity investors or even offer a line of credit will find this model more appealing because the organizational structure, as a for-profit, makes borrowing with a prospective return feasible.

MANAGEMENT

In a business plan to support several new farmers working together on one parcel of land, management must be specifically and clearly defined. The roles and responsibility for management and the farmer can be constructed numerous ways, like tax structures noted above, but overall, the mission should focus on growing the farmer, allowing them the autonomy to innovate on the plot of farmland and support them toward a fiscally sustainable operation. The emphasis is on mission, governance and results that should benefit an identifiable audience which is hopefully represented in the governance/management entity.

APPRENTICE FARMER-OWNER

This option would involve a generational farmer seeking to keep his/her land in operation. "U.S. agriculture is a distinctive industry for its concentration of labor and ownership in the hands of older people. More than a quarter of primary farm operators are 65 or over, whereas in non-agricultural U.S. businesses, only 14% of self-employed workers are in this age group." Existing large acreage or livestock farmers, without designated inheritors, would provide management and mentoring to the farmers living on his farm. Careful evaluation as a follow-up to this report would be warranted to build a viable model in Connecticut. This a link to a study that evaluates farm link practices over the last twenty years. Source: "Fostering farm transfers from farm owners to unrelated, new farmers: A qualitative assessment of farm link services" https://www.sciencedirect.com/science/article/pii/S0264837718313942

Apprenticeships, internships and similar setups for older farmers who seek to support training of new farmers would be an ideal pathway, but the process is beset by numerous hurdles, including labor laws, and appropriate compensation toward building equity for the apprentice farmer. "Many family farms with interns, also known as apprentices, have incurred heavy fines in the last few years for non-compliance with employment and workers' compensation laws. Whether you call it an "internship", "apprenticeship", or "volunteer", they are all considered the same under the federal labor law, and therefore fit in the legal definition of an employer-employee relationship. (There are a few rare, specific exemptions, but not applicable to most situations.)"
While the easiest path from an outsider's point of view would be to hire them as employees, there are farmers on a limited income have few resources or time to hire an apprentice as an employee. For an apprentice, there is the chance that their work investment and learning will be viewed as an opportunity to get free or cheap labor with maybe limited training.

North Carolina operates a registered agricultural apprenticeship program for military veterans, titled, Boots on the Ground. The NC Veteran Farmer Apprenticeship aims to increase the pool of trained agricultural workers for management and entrepreneurial positions at farming operations in North Carolina. Apprenticeship NC, the state apprenticeship coordinating body, hosts apprenticeships with host farmers that includes both hands-on job training and related technical instruction. A registered apprenticeship allows veterans to use their GI bill education benefits for on the job training and the apprenticeship credential will demonstrate to future employers nationwide that apprentices are fully qualified and highlight the skills they have mastered during the program. Apprentices are paid and will receive a raise halfway through the 12-month program if they are meeting time and competency requirements. https://cefs.ncsu.edu/academics-and-education/apprenticeships/boots-on-the-ground/

Two more examples are Vermont's Farmer Training Program through University of Vermont and Pennsylvania's PASA Sustainable Agriculture (a nonprofit model) which offers apprenticeship opportunities for new farmers. This model originated in 1992 with a group of Pennsylvania farmers who sought to reliably steward their land with conservation innovation and cooperative marketing. These farmers also sought a peer community they could rely on as they worked to navigate the myriad aspects of operating a financially viable farm business. The conference became a treasured annual event.

OUTSIDE MANAGEMENT: This system includes a traditional “board” (private) which hosts and oversees fiscal management of the shared farm. The operators who principally work their farm efficiently and effectively. The board takes on all insurance liability and long-range fiscal planning, grant applications and evaluation of cooperative operations, including selecting the new farmers who will work the land.

CO-OP MANAGEMENT: In this model, there is a mutual and/or shared arrangement with an emphasis toward equity through common shared production among the participants. The cooperative owns the land and possibly the associated housing. Members purchase shares, which gives them the right to occupy the unit. While there is over is not a common ownership form and it is very difficult to get financing through loans because the loaning entity does not hold title to the land and housing.

https://learn.uvm.edu/program/farmer-training/alumni/

COMMUNITY LAND TRUST

This system involves a nonprofit, community-based corporation committed to the permanent stewardship of land and the permanent affordability of housing and other buildings located upon its land. Land acquired by a CLT is never resold. It is retained by the CLT and held in trust for the community. Although a CLT never resells its land, it provides for the exclusive use of its land by leasing out separate parcels to individual homeowners, cooperative housing corporation(s), nonprofit developers of rental housing, or other nonprofit, governmental, or for-profit entities. These ground leases last for a very long time, typically 99 years. Any residential or commercial buildings already located on lands acquired by a CLT or any buildings later constructed on these lands are not retained by the CLT. They are sold off to organizations or individuals who are leasing the CLT's land. The owner of a house, a condominium, or a multi-unit residential or commercial building located on a CLT's land holds a deed for the building and a lease for the underlying land. https://groundedsolutions.org/tools-for-success/resource-library/agricultural-and-commercial-community-land-trusts

NON PROFIT OVERSIGHT

One last practical management structure where a sponsor/host, the nonprofit which can then create a wholly-owned subsidiary (the farmers), a separate nonprofit that is independent but "sheltered" from the on-farm operations and associated liability. Profits of a subsidiary could partially support the expenses incurred by sponsor (manager) and kick-back additional funds toward mission (expansion of the farm operations). One downside or upside is that the Executive Director of the sponsoring nonprofit can sit on the subsidiary board. While they are not allowed to direct day-to-day operations, there is collaborative oversight (management) can certainly influence what is done by the subsidiary (farmers) to safeguard financial stability. A second upside is the access to resources, such as grant funding, that would not otherwise be available to the privately owned subsidiary (farmers) because of, at minimum, little or no history, experience and/or reputation.

Considerations for this management model include:

- Nonprofit mission compatibility and defining constituency/target audience
- Benefits to the nonprofit,
- Control and liability: where to draw boundaries
- Competing finance/funding interests between nonprofit and farmers
- Operational management responsibility/authority and what is shared "back-room" and at what cost to the farm,
- Overall governance/composition/structure that includes seats for the subsidiary or program, reporting and public face

Gather NEW HAVEN
Neighbors and Nature Thriving Together

https://gathernewhaven.org/

Southside Community Land Trust Farm - Providence R.I.
https://www.kendall.org/southside-community-land-trust/

The Co-op Farming Model Might Help Save America's Small Farms

https://civileats.com/2018/10/03/co-op-farming-models-might-help-save-americas-small-farms/

BY ANNELISE JOLLEYOCTOBER 3, 2018

GOVERNMENT SPONSORED

Another management solution could form through government sponsored "housing authorities" which would provide quasi-public management of the affordable farming enterprise. While governance of the entity may be independent and representative of the beneficiaries, and public sector bodies may make modest financial commitments, public sector bodies are often wanton to make long-term multi-year commitments making resource acquisition onerous and ongoing while not free from public accountability to both the public sponsor and private funders. Public accountability concerns could be demanding or not depending on who is the government investor. Government (state and municipal bonds are certainly an accessible option for this entity and a town might find a bond an appealing vehicle for investing in a farm property.

Town of Granby Farm https://holcombfarm.org/

MARKETING

Farming is big business in Connecticut for both large and small operators. It is time intensive with little room to advance business through marketing. Beyond studying the market for the produce and products to ensure financial viability, a marketing plan is a critical component for an affordable farming project. In planning for the project, a decision needs to be made on whether the project's mission and new farmer objectives include:

- Consideration of Connecticut's newest initiative at CTNEXT which is exploring the correlation between food systems in Connecticut, market demand for crops and the support structure in place to grow new farm business in Connecticut. https://ctnext.com/

- Training in marketing and outreach for new farmers. There are numerous programs available on-line and through University of Connecticut's Solid Ground Program for farmers. The key question is how to ensure that farmers have access to those training models without impacting their on-farm productivity. There are also private entities offering training that can be explored. For instance, global corporate entities such as ADM, Decatur Illinois see the ongoing need to train farmers and training to increase marketing awareness. https://www.adm.com/en-us/news/adm-introduces-shift--an-interactive-course-for-making-farm-business-decisions/ The hook is that it is a no-cost online course for producers that covers core areas of farm management, including grain marketing, crop insurance, fertilizer and input costs, market fundamentals and general financial planning strategies. There are numerous other entities and resources in Connecticut to support new farmers.

- Is the host community invested in the success of the farm. Many of Connecticut's communities support the growth of local businesses and farmers historically have been an intrinsic part of the community, yet still needing the connection to residents. The goal is to establish the collaborative connection at the beginning of the project?

- Will there be interaction with the public on-site (CSA, Pick Your Own or Farm Store) or off-site (Farmers Markets or Social Media- Where to Find Our Products)? The profitability for farmers can be supported by the sponsoring or outside management organization to free up farmer time for growing and farm operations.

- Will there be an events center or education center for the public nearby to learn about new farmer innovation, conservation practices, new types of crops, etc?

- Is there a connection with agriculture classes or program at the local high school or a nearby college/trade school?

- Are there opportunities nearby to process produce or livestock products or will this happen on the farm (what are the health codes and infrastructure needed)?

Shared Community License Kitchen Model

There are few opportunities for farmers to link to shared community licensed kitchens. Toward improving affordability for new farmers, it is important to explore opportunities for processing produce or livestock grown on the farm. While this is a larger conundrum for Connecticut policy makers, some processing centers existing, mostly for profit enterprises leasing out space. The University of Connecticut Agriculture Extension Centers are a potential resource for creating regional shared kitchen processing centers for farm produce. In creating a shared kitchen processing space, CLiCK is a great example to replicate.

In Connecticut, CLiCK is a singular Connecticut nonprofit treasure, providing an avenue for food entrepreneurs in Willimantic, Connecticut to both create food products but also connect with local farmers.

CLiCK is one of the first shared-use commercial kitchen spaces to open in Connecticut and the only one in Eastern Connecticut. There are currently eight other licensed kitchens spread out throughout the state. Since the closure of many restaurants over COVID shared kitchens have experienced sizable growth. CLiCK was the brainchild of the local food co-op's board who wanted to help increase markets for local farmers in response to the struggles local farmers were having accessing markets. Given that CLiCK exists in the poorest county in CT, an additional focus was to increase economic opportunity for low income and minority people.

Currently, CLiCK provides shared use kitchen space to farmers to create value-added products often at low or no-cost with pricing subsidized by grants from the USDA, DOA and local foundations. Local farmers receive on-site business consulting that provides licensing assistance, product development, equipment training and linkages to additional business support that accelerate the learning process for members.

CLiCK's shared kitchens and teaching space operate on cooperative values which encourages member connections, knowledge sharing and direct involvement in the operation of the organization. Members have use of CLiCK's meeting and teaching kitchen and outdoor spaces and free access to our varied classes. Additional market expansion activities include selling member products in CLiCK's onsite Curbside Market and at the Willimantic Farmers Market, social media and CLiCK website promotion, and use of member products in CLiCK Cooks' Catering. A market unto itself for producers are the 30 plus food vendors that operate out of CLiCK's kitchen annually. These expansion activities generated over $10,000 in additional revenue for our members last year!

Lebanon producers are fortunate to live near a local food hub whose mission is to provide support to local farmers to ensure the existence of a local, healthy, sustainable and just food economy through programming designed to increase market expansion for producers. Just a few miles away, producers can come to CLiCK and make their own value-added products, or soon will have access to a new co-packing and processing program where we do the processing for you. In response to farmers who have asked for a small batch processing opportunity locally, a processing space will be completed in 2023/24. CliCK's processing kitchen will expand CLiCK's ability to purchase products from local farmers with no minimum batch requirement to sell to school systems, organizations and other retail outlets in Eastern Connecticut. We listen to our farmers and what they need!

Research and recommendations provided to an understanding of farmers, at home production, selling produce their produce to market chain, collective marketing alternatives, options for use of a community kitchen such as CLICK (either as farmer/product producer or to vendors/chefs/manufacturers associated with CLICK). Also explore the concept of an off-site CLICK pods on an affordable farm scenario that work to support produce to market (health rules, regulations and what minor equipment would be required).

CLiCK operates on cooperative values and aims to grow a locally-based, just, healthy and sustainable food economy. Farmers join CLiCK as a member which affords them the following membership benefits:

- Onsite licensing and start up consultation (to include CT Cottage laws review)
- Product development support by CLiCKs chef
- Reduced hourly kitchen rate ($15/hr). Onsite dry and cold storage.
- Free (10) test kitchen hours to prepare for product review and licensing.
- Bulk purchasing with other members.
- Food safety certification classes in Spanish and English.
- Product display and sales at CLICK tables at farmers markets.
- Access to all CLiCK market expansion activities: CLiCK Cooks Catering (uses member products), CLiCK Curbside Market, onsite events that highlight members products, promotion on CLiCK's website, social media.
- Linkages to local events to promote member products.
- Teaching kitchen usage to provide education and product promotion to the community.

CLiCK has provided support to over 60 farmers in the community providing everything from scholarships to create value-added products to food safety certifications to convening USDA and Dept of Agriculture information sessions requested by farmers. We currently have three farmer members at CLiCK whose products include jams/jellies/pickles from KD Crop Farm, bone broth/lard from BOTL Farm and a food truck from Taylor Springs Farm who sells products made from their farm raised protein. In addition, CLiCK has received a USDA Local Food Purchasing Assistance Grant CLiCK to aggregate and distribute over $160,000 worth of local produce over the 2023/24 growing seasons. As the local food hub, CLiCK provides fiscal support and staffing (bi-lingual) infrastructure to facilitate state and local grants and programming that benefits local producers. Many farms do not have the time to research, apply and implement federal and state grants that could support them, which CLICK can do.

The most exciting initiative at CLiCK is the local food processing project which has been a goal of CLiCK's since it opened in 2015. Producers have asked for a local processing option in Eastern CT and we are expanding the current limited processing capabilities we have and building a new processing kitchen. The new processing kitchen will expand the market for local producers through direct purchase from CLiCK for retail sales or for creating products for producers.

F

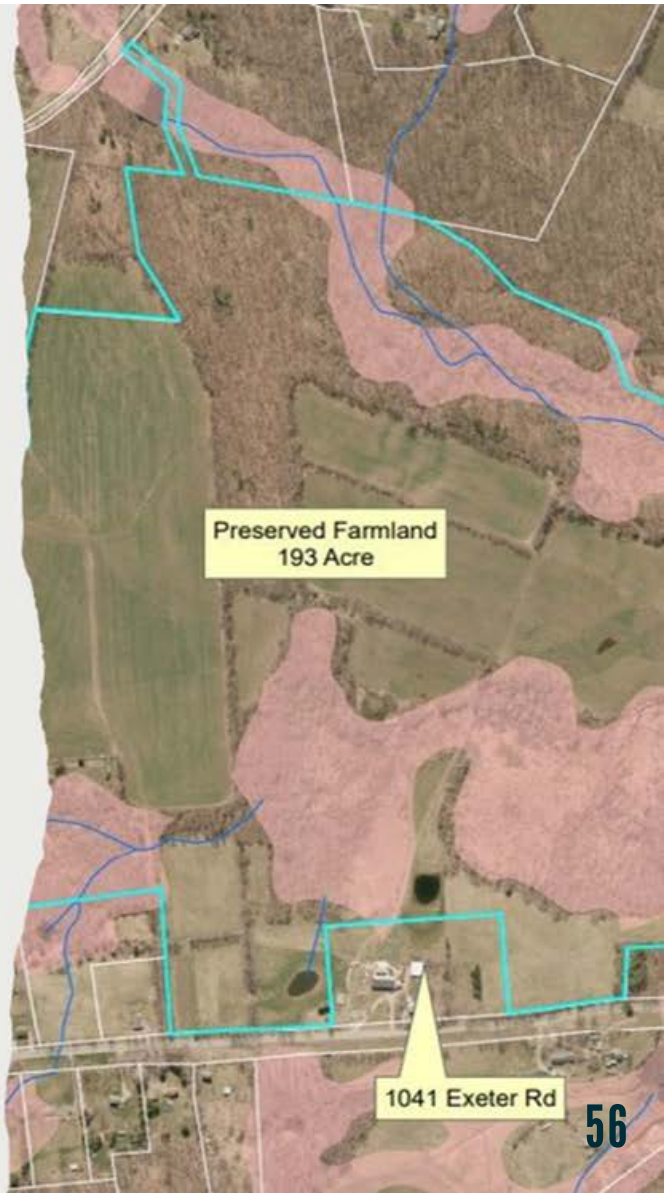
THE AGRICULTURE CENTER MODEL FOR LEBANON: CASE STUDY

Two Lebanon Farm Properties

1 with Development Rights Purchased
and
1 with Development Rights Intact

Create

Site Design Template
Legal and Financial Template
for
Ten incubator farmers/farm families
Determine Acreage required per farmer
Type of farming for Site
Housing Co -Housing, Co -op, Lease to Own, Shares or Rental
Environmental Site Evaluation
Utilities – Broadband - Septic
Proximity to Markets
Demographics of Region
Visibility to Public – Farmstand – Store
Education Center and Share Equipment Storage
Ownership – Non-Profit Subsidiary - Foundation



For the Town of Lebanon, this planning and pilot project evaluated the various options discussed in previous sections and two farmland properties in Lebanon, one with a agriculture conservation easement and one without an easement. The project team explored the management, financing, and structural options as well as the onsite conditions of two farms in Lebanon. The Krause Farm and the Randall (Our Acres) Farm. Equitable Farm Access, one of the project team members has had extensive experience in building agriculture centers in the other Northeast states. After careful evaluation of the two properties, the team needed to choose one property for the Conway School of Landscape Design to design an affordable farming layout for consideration by the Town of Lebanon.

Both properties had significant advantages. The Krause Farm was ideally situated near the Airline State Park Trail which would have encourage a tourism promotional component and there were four significant farm housing opportunities on the property for approximately five housing units or four housing units and a historic cottage for farm-stay income to the project. The farmland is ideally continuous on sloping topography. The Krause family was welcoming and interested in the project and future option for affordable farming being explored by Lebanon. It is currently leased out to grow silage crops for dairy farms nearby.

Similarly, the Randall Family farm, Our Acres, was located on a main road leading into Lebanon's historic center from Colchester to the west and Windham to the northeast. Almost 90% of the farm's 193 acres was purchased under Connecticut's farmland conservation easement program. The farm can be used for farming only and structures built on the property can only be used for agriculture purposes. There is significant wetlands that bisect the property and the farmland is segmented by these wetland areas and soil suitability for septic systems is marginal in most areas. From a funding perspective, both Lebanon based properties have potential constraints with regards to funding versus match community development funds through USDA for the project. That said, there are numerous other funding sources to be considered for the project.

USDA Grant Funding for Affordable Farming Projects

Lebanon Case Study: Percentage of Funds and Eligibility Factors

FROM TO FIVE GRAND LIST	
HYPONEX CORP	$8,669,310
HILLANDALE FARMS CONN LLC	$7,674,260
PRIDES CORNER FARMS INC	$7,192,890

RACE & ETHNICITY	
White Non-Hisp	6,892
Black Non-Hisp	32
Asian Non-Hisp	30
Native American Non-Hisp	0
Other/Multi-Race Non-Hisp	164
Hispanic or Latino	124

GENERAL	
Population	7164
Land Area (sq. miles)	54
Pop./Sq. Mile	134
Median Age	47
Households	2,703
Median Household Income	$93,531

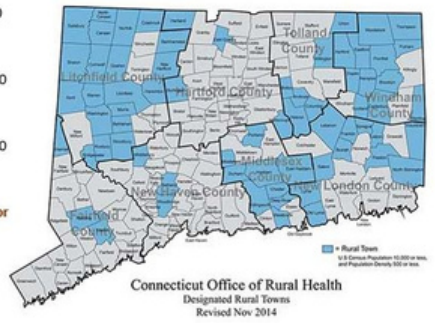
USDA Community Facilities Grant Funding

75% with 25% Match: Rural community having a population of 5,000 or fewer & median household income is below the higher of the poverty line or 60 percent of the State nonmetropolitan median household income

55% with 45% Match: Rural community having a population of 12,000 or fewer & median household income is below the higher of the poverty line or 70 percent of the State nonmetropolitan median household income.

45% with 65% Match: Rural community having a population of 20,000 or fewer & median household income is below the higher of the poverty line or 80 percent of the State nonmetropolitan median household income.

15% with 85% Match: Rural community having a population of 20,000 or fewer & median household income is below the higher of the poverty line or 90 percent of the State nonmetropolitan median household income.



Connecticut Office of Rural Health
Designated Rural Towns
Revised Nov 2014

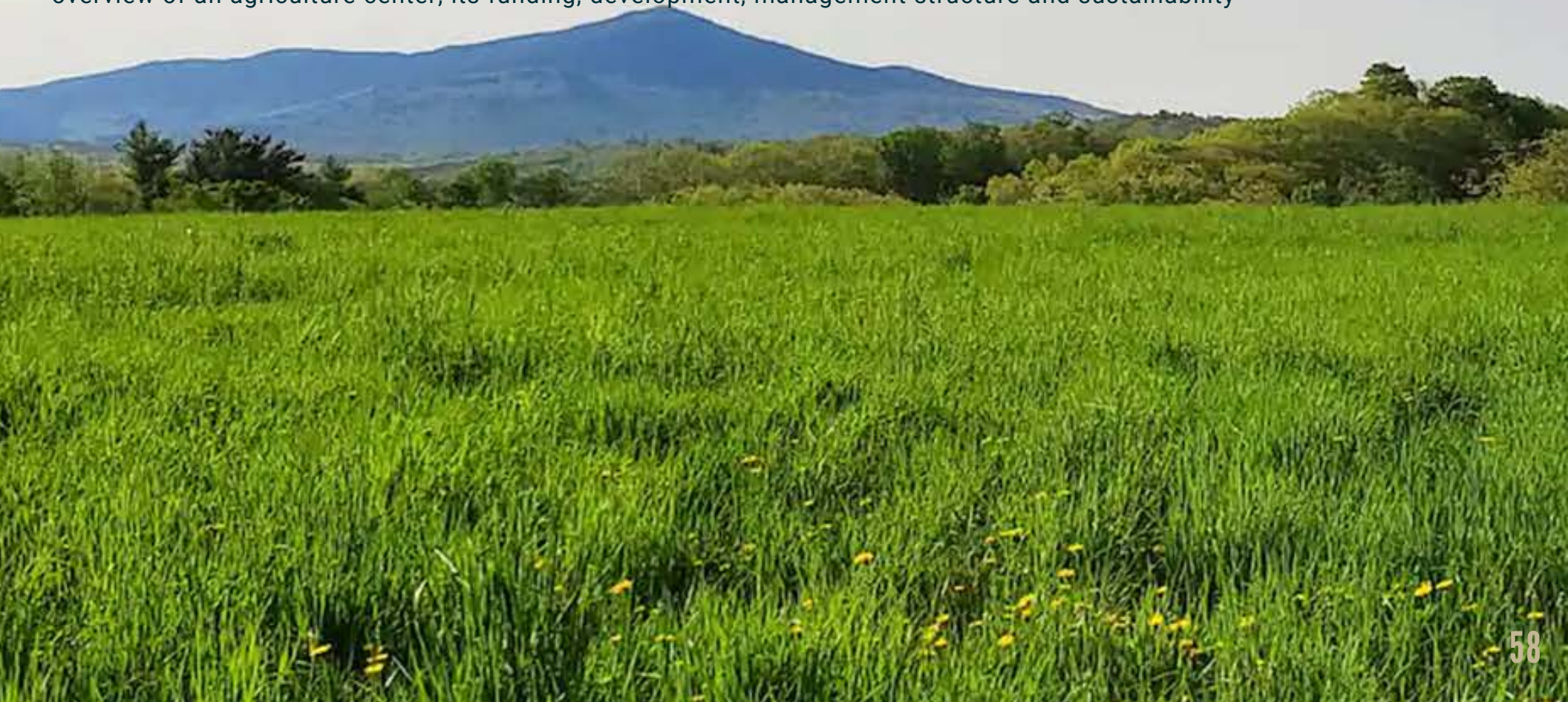
To Obtain Community Facilities Grant Funding, A MATCH OF % IS REQUIRED

65% Sprague	45% Griswold	45% Putnam	45% Thompson
65% Killingly	65% - Deep River	65% South Windham CDP	85% Lebanon

G

Equitable Farm Access Agriculture Center Model

There are numerous agriculture centers established in the New York and the Northeast. These centers are designed for new and emerging farmers to be affordable so farmers can grow equity and long term investment. The project team was fortunate to have Bob Bernstein and Matt Hunger of Equitable Farm Access and they have provided following description overview of an agriculture center, its funding, development, management structure and sustainability



In Equitable Farm Access's experience, sustainable farm operations in the northeast value their independence as operators, while at the same time excelling in, and benefiting from, their communities. From the Community Supported Agriculture model to on-farm community events, to the social aspects of the farmers market, the farmers at our Agricultural Centers are more likely to know a larger percentage of their customers than the previous generation of growers. The Ag Center model was built to support such community, both between different farm operations that work at the same Ag Center, as well as between farmers and their customers.

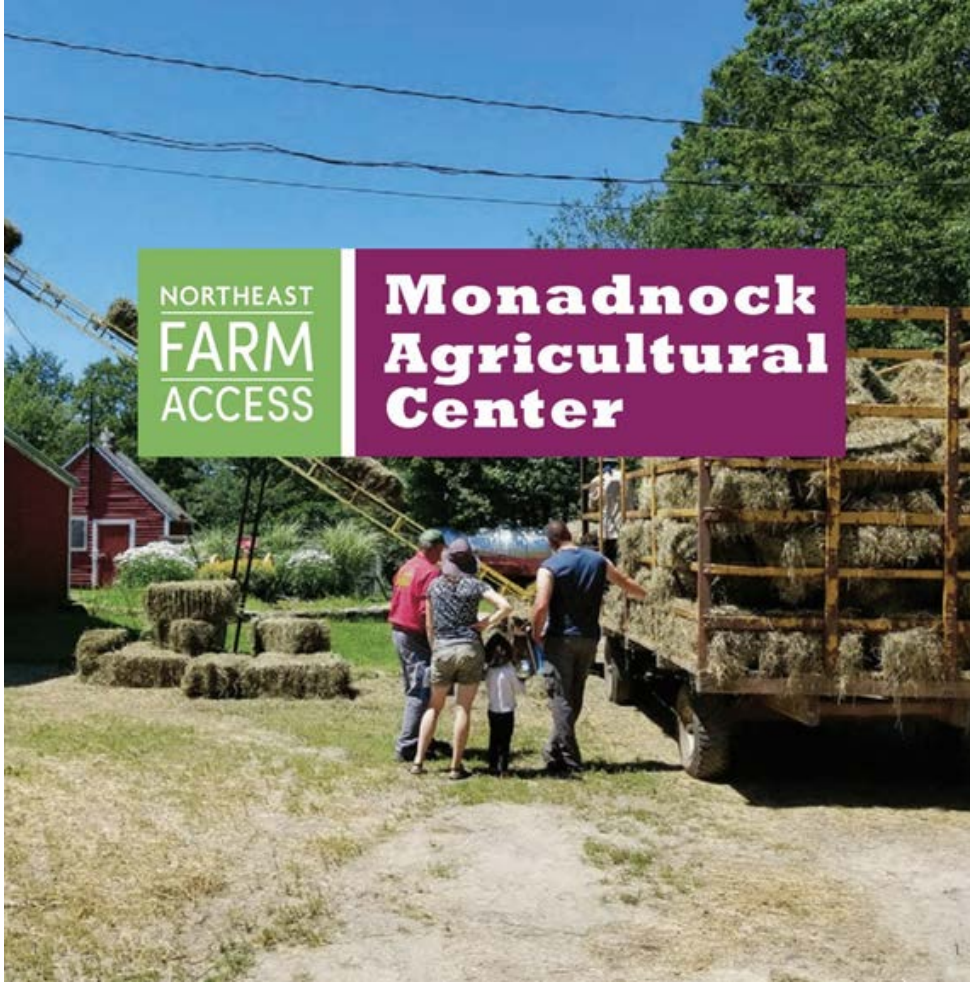
We define an Agricultural Center as a place where multiple, independent farming operations take place side by side, that features conserved working farmland, organic management practices, and that is created through the collaboration between farmers, local allies and the Ag Center's management. An Agricultural Center includes the usual components of a farm: the farmers, the livestock and/or crops, agricultural land (including pastures, tillable land and woodland) and farm infrastructure (including farmhouses, barns and greenhouses). It has multiple farmer operations that are independent from each other but that are mission-aligned and collaborate with each other to a certain extent. These operations can be for-profit and nonprofit. Nonprofit activities may include commercial kitchens, a tea room, artist residencies, campsites, etc. Nonprofit organizations include educational centers.

The key stakeholders of an Agricultural Center are the farmers that benefit from long-term leases, Equitable Farm Access as community developer and manager, and local conservation and educational organizations as partners. The purpose of Agricultural Centers is to enable a relationship between new farmers and local organizations that benefits the communities where these projects take place, through the preservation of rural livelihoods, the conservation of working farms and the creation of new spaces for the development of profit and nonprofit activities.

Community is at the heart of the Ag Center model, which raises funds from social investors to purchase at-risk, prime farmland in areas where new and expanding sustainable farm operators will have the biggest impact. Typically, the social investors are key stakeholders because they live nearby or otherwise connected to the area. The prime farmland that is purchased is typically mid-to-large scale farms with established infrastructure that would otherwise be prohibitively expensive for most growers. Equitable Farm Access then works with land planners to divide the farm into parcels suitable for different growing operations, which are then offered as long-term leases based on a farmer's needs. Farm operations are situated side-by-side and utilize shared infrastructure (e.g. walk-in cooler space, barn use, tractors, etc), but operate independently.

From the beginning of each Ag Center's development, about 50 core stakeholders came together during a 12 month period to make each Center possible. These core stakeholders include farmers, financial investors, Equitable Farm Access's extended team, town officials and employees, conservation / land preservation organizations, and the finance and legal teams that work with Equitable Farm Access. During an Ag Center's first year, an additional 100+ people become involved in a secondary basis, which have a rippling effect to include many hundreds of tertiary stakeholders.

Of these stakeholders, the three main stakeholders at an Ag Center are, of course, the farmer-lessees, the member-investors, and management. Each stakeholder has a different level of engagement, different need, and a different perspective on success, which informs their views, priorities, and involvement. There are farmstands on or near the Centers that build bridges to the community as well. For farmer-lessees, their connection to the Center is daily and a necessity.



Member-investors engagement ranges from financial commitment to active involvement. Many member-investors are drawn to Ag Center membership because they are neighbors to the land and want to see it remain farmland and converted to sustainable production. Others may never visit an Ag Center in which they've invested. Most member-investors keep a low-profile, occasionally, or rarely attending meetings or responding to email updates. For most, this is a social investment for which they accept a lower rate of return than a typical investment.

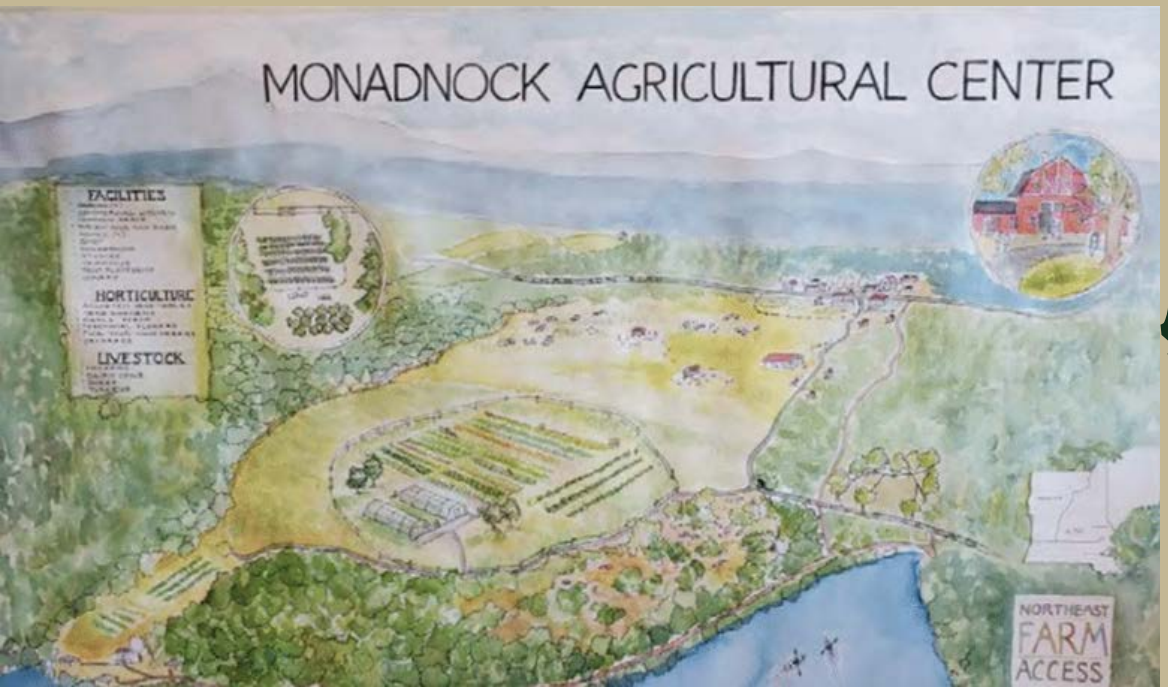
The Ag Center model includes an Advisory Committee, where member-investors, farmers, and management all meet. This remains the forum with the most potential for affecting the direction of an Ag Center. The Advisory Committee is written into each Ag Center's operating agreement and, beginning in 2020, was included in each lease to stress its importance. Advisory Committees create opportunity for member-investors to understand the need of the farmers, for management to discuss vision and development, and for farmers to hear from member-investors. By operating agreement stipulation, Advisory Committees are to meet once every 3 months. However, in practice, only the Monadnock Agricultural Center's Advisory Committee met as intended. Elsewhere, Advisory Committees failed to meet as frequently as intended for a variety of reasons.

In some instances, this resulted in some investor-members meeting with certain farmer-lessees on individual bases and advocating for them to the detriment as the project as a whole. Ag Centers are community-minded ventures, and a balanced approach for all is key to its success.

Equitable Farm Access has sited Ag Centers within small cities, such as Kingston, NY; suburban locations such as Chester, NY and Copake, NY; and in more rural areas, such as Marlborough, NH and Unity, ME. In all cases, we assess market access. No location is further than approximately two hours from a mid-sized city or large city, including New York City and Boston. The price per acre for the farmer-lessees varies differently based on location, from approximately $125/acre/year in NH to $350/acre/year in Copake, NY and $500/acre/year in Ulster, NY.

Another factor are features of the land itself, such as suitability for various operations, soil quality, which is assessed using NRCS soil maps, and soil testing, undertaken by a third-party. Working with land planners, Equitable Farm Access parcels out leaseholds based on appropriateness for various operation types. Ag Centers typically support both vegetable and milk operations, and sometimes poultry and livestock.

Like any business venture, there is a leader(s) who set policy, objectives and cost setting for success. In working with farmers over many decades, it is known that the primary objective of the farmer is growing and harvesting. There are many organizations that can assist and contribute to the success of the farming operation, but for the farmers themselves, long days and lack of time create a disadvantage in optimizing grant opportunities, access to new technology or research to increase crop yield or livestock management, financial solutions to build equity and mental health to sustain the long haul toward financial stability.



The advantage of multi-farmer agriculture center is the mutual support found both mentally and physically between fellow farmers in proximity to each other on the same acreage. Careful planning is required for management of this structure, whether co-owned and operated under a community land trust model or outside management by a sponsor, town or non-profit. Overall farmers have little time for bureaucratic systems and meetings, yet timely, ongoing communication between all parties is essential, so the goal in the following discussion is how to support them and minimize the bureaucracy of agriculture.

The Investors

The Agricultural Center model takes in investments from social investors who are seeking an alternative investment. The model offers a 2% return on these investments via two types of investments, Class A and Class B. This second class of investment has a right of return after eight to ten years, while the first class has no such right. In this way, Class A funds provide the "patient" money required for the Ag Center model to succeed in the long-term. Investments are only accepted from accredited investors, and generally range from $25,000 to $1,000,000 with exceptions for more or less. The benefit of this type of investment is that it differentiates itself from donations, since it does seek a return of investment, while simultaneously offering a social return as well.

While investors appoint a manager to handle the day-to-day business of the Ag Center, the model fosters investor inclusion by holding regular meetings, providing transparent financials, and seeking member consent for certain decisions. However, because votes by members are weighted as one-dollar-one-vote, some participation counts more than other participation. Expectations range according to investment size and personal proximity to a project. It is up to the manager to follow operating agreement procedures as closely as possible so as to balance the needs of the many.
Investors get involved for a variety of reasons, though the one common thread is social impact. Investors are neither altruistic nor seeking significant financial gain. Often investors are situated near an Agricultural Center or have some connection to the area. As such, many investors are funding the social good of sustainable agriculture and biodiversity, while simultaneously funding a project that benefits their community and prevents unwanted development.

Some investors care deeply about specific issues about operation and seek to influence day-to-day decision-making; for instance, whether to permit the growing of hemp, which emits a strong smell for much of the farming season and may be unattractive to local residents. Others invest because they are drawn to the model and want to support it in order to see if it can be replicated elsewhere. Most investors are individuals, with only a few trusts or foundations investing.
In our experience, holding regular meetings with open dialogue between all stakeholders, including farmers and the community, is crucial for the shared long-term vision and cooperation between investors, management, and the Ag Center. We find that when an investor can visit an Ag Center early and often to see the work being done there–for example, converting a dilapidated farm to a thriving center for the next generation of farmers–the long-term vision clicks and it's easier to manage expectations

CULTURAL

The Agricultural Center model is based on Community Economic Development approaches including Community Land Trusts, resident-owned-communities, and other community-based development entities. Governed by an operating agreement that reflects mission and values, the model incorporates input from both member-investors and farmer-lessees through Advisory Committees, transparent farm updates and bookkeeping, and open communication. As a community-oriented and social venture, the Ag Center model relies on the strength of its farmer-lessees and social investors. Fostering community and trust among groups with both shared and competing interests requires open and honest communication, transparent accounting, and a shared vision.

While some social investors are active, many are not. Instead, the success of an Ag Center is largely based on how well a farmer-lessee understand and buy into the model. Management typically seeks farmers through various means, including New England Farmland Finder, word-of-mouth, and farm and food-related online message boards. A review of candidates is undertaken, which entails reference checks, a request for a business plan or farm plan, and meeting with management to tour the Ag Center. Prospective farmer-lessees are always invited to meet with current farmer-lessees who then have advisory role on candidate selection with the final decision resting with the manager. Most farmer-lessees would rather own than lease. Necessity, soils, water, housing and affordability are the main draws. Most challenging is discerning candidates who present themselves as team-players but ultimately do not want to cooperate with others. This has been a challenge. However, by and large farmer-lessees that are good fits thrive at the Ag Centers. Over the years NEFA 1 has revised the social protocol, expanded the vetting process, an d has hired numerous managers at different Centers.

Social aspects at an Ag Center range from situating operations in abutting parcels at its most minimal, to sharing infrastructure, coordinating on market ventures, and organizing among farmers to more clearly articulate needs and vision for future development. Often farmers meet on their own to work out amongst themselves the challenges of sharing space and joint-ventures. For instance, at the Chester Agricultural Center, vegetables were sold collectively at local markets, and produce was traded as available/necessary to meet market and CSA needs. These ventures were worked out in farmer-only meetings. Some farmer-lessees lease homes on the property, while others live nearby. This remains one of the most challenging aspects for farmer-lessees, as finding nearby housing can be expensive and a challenge. Ideally, an Ag Center would have housing for all or most farmers and farm workers, however so far this has been only partly successful.

One challenge to the social aspect of an Ag Center are its financial needs and constraints. Lease fees are on a weighted schedule, so the first few years are less expensive as farm operations take off. Ultimately, however, the competing financial needs between social investors, capital expenditures, and farm operations can stress the system, especially if an Ag Center is under-capitalized. The Ag Center relies on conservation easement and other sources of revenue such as agritourism to offset its financial challenges. We've found that the more patient money an Ag Center has, the more likely it is to succeed. Balancing Class A and Class B proportions is fundamental. Infrastructure lease fee revenue is often more consequential than land lease fees. Homes, barns, fields might be the hierarchy. Experience has been that payment of lease fees is rarely a problem but on the rare occasions that it is, consequences have been grave.

MANAGEMENT OPTIONS

Historically, the conversation around farm labor policy has divided farm employees from farm employers, and the issues of fair labor practices and farm-employee equity are frequently left out of the popular characterization of sustainable agriculture. The main questions the Ag Center model seeks to address are: How do we build common ground and develop new relationships for greater economic stability and shared equity among the main stakeholders of a farm, e.g. farm employers, farm employees, consumers and social investors? And how can we create a comprehensive food ethic that includes fairness and equity for farmworkers in the characterization of sustainable agriculture?

To address these challenges, the model promotes greater awareness among these stakeholders about the challenges and opportunities in the current farm-labor economy. Remaining mindful of the often-tenuous financial viability of small- and mid-scale family farms, the model puts forth values and practices for farmer-lessees that are intended to engender greater fairness and equity for farm employees.

This is found most prominently in the management and social aspects of an Ag Center. It is the Ag Center manager's responsibility to promote community values, land stewardship, and cooperation among and between the stakeholders. While there are competing needs between farmers, management, and the social investors, Ag Center management fosters community through mutual values (sustainability, cooperation, fairness). Farmers are also encouraged to form working groups on their own to coordinate their shared needs. In this way, independent groups of people with potentially diverging interests may work together in a community-oriented way.

It is also the management's responsibility to find investors, who range from a variety of areas, including private individuals, trusts, and foundations. There are often limited cooperation or partnership with local businesses, including markets that feature produce and products from the Ag Center.

Management requires participation by all stakeholders, from the investor, to the farmer, to the manager. There are regularly held meetings in which these stakeholders meet, sometimes together, sometimes separately, to discuss the Ag Center, develop and share long-term visions, and help ensure the project moves in the right direction. This includes an Advisory Committee that, although nonbinding, carries significant weight with stakeholders. Because of the social impact of the project, investors tend to be those who understand and value inclusiveness. However, this is not always the case, and some investors may use the advantage of their financial interest to make decisions as they see fit. It is important for management to find investors who understand and respect the Ag Center template operating agreement, which seeks to balance the needs of the many.

Social investments, like any investment, come with risk. The pilot project of the Ag Center model primarily worked with accredited investors. Future revisions to the model may include more non-accredited investors, micro-investing, and/or other means of investment. As stated earlier, the model's accredited investments typically range from $25,000 to $1,000,000. In a system with one-dollar-one-vote, larger investors have a greater say in all voting items brought before member-investors. Management retains given control of day-to-day operations and decision-making, but must balance these responsibilities with managing expectations from larger investors.

The primary means by which investors voice their views at an Ag Center is through member-investor meetings, during which finances and budgets are discussed and voted on, and through non-binding advisory committee meetings, where day-to-day operations and long-term plans are discussed.

Advisory committee meetings also bring together investors and farmers, and are meant to foster community and cohesion. This kind of inclusiveness and investor involvement goes beyond some other investments.

Managing expectations and balancing competing needs is among the more challenging crucial responsibility of an Ag Center manager. Farmers have needs that often run contrary to investor return. Long-term planning by management requires patient money, which similarly requires investors to look past their early returns. Similarly, a foundation is typically accountable to their boards of directors when making investments, and demonstrating the social impact is of a higher priority than it is for some other investors.

H

For the Conway School design process, the project team ultimately chose Our Acres Farm, the Randall family's generational farm due to the significant building limitations and opportunity for innovation in natural resource protection in conjunction with farming on the property. Many of the project team members indicated that a synergy between the two farms as growth centers for new farmers would be ideal for Lebanon and the state as a pilot project.

To guide the graduate students at the Conway School of Landscape Design, the project team decided that it would be useful to design with the agriculture center model. Discussing farmer selection, diversity, and equity as well as optimal management structure and funding would be the next critical steps should Lebanon move forward with a partner organization or a group of farmers to create Connecticut's first affordable farming pilot project.

THE CONWAY SCHOOL OF LANDSCAPE DESIGN FOR RANDALL FARM CAN BE FOUND AT: www.ctrcd.org/affordablefarming

APPENDIX A: RESOURCES

AGRICULTURE COOPERATIVES
National Models
https://www.twinoaks.org/ (Twin Oaks Intentional Community is the equivalent of an Israeli kibbutz – website offers lots of info and lessons about co-sharing EVERYTHING)
https://lareviewofbooks.org/article/no-fences-make-the-best-neighbors-collective-home-ownership-kibbutz-to-cohousing/ - a "live" look at kibbutz and cohousing arrangements and a variety of financing strategies are highlighted
https://stowefarm.org/who-we-are-at-the-farm/
http://www.wildseedcommunity.org/
http://rockycorner.org/
https://charterforcompassion.org/shareable-community-ideas/12-agrihoods-taking-farm-to-table-living-mainstream

AG CENTERS TYPE STRUCTURES IN CONNECTICUT (without the housing)
Equitable Farm Access - https://equitablefarmaccess.com/
Massaro Farms https://massarofarm.org/
Holcomb Farm https://holcombfarm.org/about/
University of Connecticut
https://dining.uconn.edu/spring-valley-farm/#
https://newfarms.uconn.edu/

COMMUNITY LAND TRUSTS
https://www.burlingtonassociates.com
https://groundedsolutions.org/tools-for-success/resource-library/agricultural-and-commercial-community-land-trusts
https://www.businesswire.com/news/home/20220908005130/en/Marin-Agricultural-Land-Trust-MALT-Introduces-Conservation-Leader-Lily-Verdone-as-Executive-Director

NEW FARMER PERSPECTIVES
https://www.newctfarmers.com/
https://ctrcd.org/agriculture/farmup/
https://portal.ct.gov/SDE/School-Choice/CT-School-Choice/Agricultural-Science-and-Technology-Education
DIVERSITY, EQUITY, AND INCLUSION
https://shelburnefarms.org/blog/farming-for-diversity-equity-justice-and-inclusion-a-profile
https://civileats.com/2021/04/01/queer-bipoc-farmers-are-working-for-a-more-inclusive-and-just-farming-culture/
https://www.youngfarmers.org/22survey/

APPENDIX A : RESOURCES

CT FARM ENERGY

https://ctfarmenergy.org/ct-farm-energy-2019-bmp-guide
https://energizect.com/connecticut-energy-efficiency-board/about-energy-efficiency-board/annualreports
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MUNICIPAL COMMISSION GUIDE TO AGRICULTURE

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APPENDIX B: CONVERSATION FROM MEETINGS

QUESTIONS AND ANSWERS: PROJECT TEAM

With a management template for an affordable farm, there are several avenues to examine, could you briefly explain the types you've analyzed or researched as potential setups for a cooperative agriculture center to support new and emerging farmers?

A strong proponent of a market-driven business plan. A market-driven business plan identifies revenue opportunities where there is a potential demand while taking into account the operational demands and costs. For instance, I have recognized a market demand for hydroponic products but the analysis must include what are the investment costs for getting this operation up and running and how long it will take to generate sales that in turn would lead to a minimum of a break-even balance sheet. We know farming generally needs to have some scale in order to break-even in addition to recognizing that if there is one buyer (e.g. ben & jerry's) the operation is sure to be more prosperous. The challenge again is acquiring the resources to accommodate the up-front investment costs, recognizing that that challenge may be not so far from the challenges of finding and maintain labor to continue to be at "scale" - essentially, producing enough at high enough that is at a high-enough price to meet and exceed expenses but not deter purchasers (market). Co-ops from the buyer perspective are appealing (a known number of buyers) but if what is produced does not match demand, the enterprise will die a relatively quick death with not having enough demand that generates enough revenue to offset costs which may include paying off loans. So, it is incumbent upon new and emerging farmers to do their homework about what is or will be in demand; what will be a price that will cover costs; and what are the management and distribution costs. Bottom line, the template must include:

- *a market analysis of demand and competition*
- *a marketing strategy plan that identifies what will be the offering to best meet demand and not get diminished by competition*
- *an operational, management and governance plan that identifies who is going to do the production and distribution as well as "back-room"*
- *a financial plan that identifies core operational costs and lending costs if necessary as well as projected income be it from revenues, grants or loans, and finally*
- *a risk-analysis that defines steps that might be taken should the previous plans fail.*

Can nonprofits be set up with subsidiary LLCs or vice versa?

Absolutely an option with multiple implications re governance, accountability, financing, benefits for each component. The question of ownership however (will the nonprofit get a Return on its Investment, be compensated for back-room services and pursuing grants) are important considerations. The processes we are considering are "interventions" more than real estate acquisitions. The community land trust movement advanced in part because of its "one-time wisest use of public (could be private or philanthropic) funds" 10% of total development cost is not too much to transform a mid-scale or any farm from "in danger of being lost" to a "forever farm"

What are the concepts for funding sources that you've experienced for building a large project of this type?

Private Foundations (generally Community) and sometimes State grants are the optimal start-up 3-year investment sources with the expectations the nonprofit will develop a revenue-generating program (fees for service or contracts) and the Government (Federal incl. USDA and Veterans Affairs), State, Municipal) will pick up the project for the long-term but in the form of contracts, again, fess for service. Private investors or Program Related Investments via Foundations are a possible source for bridge loans, short-term or longer-term financing and even equity lending/partnership assuming there is a revenue-generating plan. The equity partnership makes for an interesting method but assumes profits or at least break-even outcomes are possible – a business plan with clear projections of sales, expenses and reserves. THIS LATTER IS WHAT NEFA 1 ATTEMPTED. STRATEGIC ERRORS OR LIMITED OPTIONS OF BOTH NEFA 1 AND 5 OF 6 AG CENTERS BEING UNDERCAPITALIZED WERE NOT OVERCOME. NB: WE WERE TURNING TO THE CDFI FUND AS THE PUBLIC CURE THEN LOOKING BACK TO PRIVATE SOURCES AND ADDITIONAL CDFI FUNDS TO SCALE UP.

What tips can you offer a town/sponsor who is seeking to set up an affordable farm?

Be clear if and how much of a financial investment and expectations will be as to return (ROI). Also, when it comes to governance, towns tend to what representation on the board regardless of their enthusiasm for the mission. An advisor or liaison is a proven more effective model. At the same time, the town can be most helpful using its network to secure funds/loans and can take an active role communicating results and happenings to the citizens – this helps ensure continued support. The town might also consider a program related investment, borrowing from its own funds and offering a loan for a below-market rate cost. This is a mission-driven approach by a town. Of course, a business plan would need to demonstrate how much money can be generated and in what time period to give some degree of confidence that funds won't simply disappear. Agreed and every source has its pros and cons. Some authors list the source followed by carefully worded pros and cons. Should we do that?

With your experience creating cooperative agriculture centers of this type, what have you identified as the positives and negatives for new or emerging farmers in set up?

New farmers can join in the planning and implementation as soon as they want, and the team can include them. At the agricultural centers we established new farmers who have signed a lease become part of the planning, vetting and provide highly valued input to decision-making

Are there factors that should be strongly considered or carefully planned as part of creating an agriculture center?

The Agricultural Centers' main stakeholders–i.e. the farmers, the member-investors, and the community–are every bit as important as the soil quality itself or location. Farmers need affordable housing near, though preferably at, the Agricultural Center. This was already a challenge in the northeast even before the pandemic. Traveling a long distance to a market can be a challenge but living far from a farm or in unaffordable housing is prohibitive. Unlike other models, the Ag Center model includes multiple farm operators, each which need their own housing for family and often for farm workers. In our experience, the draw for farmers is often limited by availability of housing at the Centers. Farmers also need infrastructure. It's easy to build a high tunnel, it is much more expensive to build quality barn space for storing equipment, crops, and cold storage.

For member-investors, there needs to be a commitment to the model. In the multi-member LLC model, a one-dollar-one-vote system means that the bigger investors' voices carry further. However, an Ag Center is meant to operate as democratically as possible. That means member-investors need to adhere to the Operating Agreement, commit to the vision, and understand that social investments require slow money. They also need to understand that Ag Center investments are different than other investments. While they are afforded an important voice at an Ag Center, their knowledge in one area of expertise does not necessarily translate to land planning and farming.

For the community, most people do not want to see a beautiful farm disappear. On the other hand, some town officials prefer the added tax base from turning a farm into residences. It's important for the community to be approached on the terms of job production, an influx of youth mixing into a community, and the benefits of access to sustainably grown local food. In our experience, the towns where we developed Ag Centers were by and large thrilled to see farming kept alive and well in their community when the benefits of the Ag Center were presented in this way. Towns especially appreciated that the farms were all organic after years of living by chemical spray.

Diversity and Inclusion are an important topic for Connecticut farming, especially how Connecticut communities perceived farmers of color or LGBTQ farmers. How does a town or sponsor approach a project to be inclusive and diverse?

This a critical topic to explore and one that needs more in depth analysis, ideally it would be a companion piece to this report that would interview and understand the needs of BIPOC and LGBTQ farmers in Connecticut. As a sponsor or municipality, the first two steps are training, planning, resident surveying, and listening. Is the community a welcoming place for BIPOC and LGBTQ farmers? Understand your location, the culture of the community, if it can change and if it can't, what the work arounds. The richness of culture and farming insights brought by a diverse set of farmers cannot be overstated. There is tremendous value in becoming a diverse and welcoming community, both in an agriculture center and in the community at large. Farmer retention depends on this mindful approach to understanding the needs of the farmers and supporting our food systems and the farmers who work in that system is the goal. CTDOAG has a division which is working with stakeholders to advance support of diversity and inclusion in farming. A first step for municipalities is training from Sustainable CT. https://sustainablect.org/support-for-your-town/equitysupport

What is the management style concept that you've used in creating these types of centers?

Nonprofit, LLC. The Ag Center model has employed two different management styles. During the pilot phase, Ag Centers were established by multi-member LLCs, of which NEFA 1, LLC was both a member and the manager. Member-investors granted most responsibilities to the manager, which in turn handled day-to-day operations at the Ag Center, including legal matters, land planning, social cohesion, and finances. Member-investors were kept up-to-date on the Ag Center at meetings, often held monthly, and could take a more hands-on role in the Advisory Committee. In theory this would give everyone a voice; however, in practice, a few member-investors were much more involved than others. Following the pilot phase, the Ag Center model utilized a single-member LLC to purchase a farm. This single-member LLC was owned and operated by a nonprofit that also managed the property. There was an operating agreement delineating responsibilities of management, but no direct member-investor involvement. Instead, the nonprofit also owned a revolving loan fund, which in turn lent money to the Ag Center in the form of a mortgage. The revolving loan fund's Project Review Committee, independent from its Board of Directors, reviewed operations at the Ag Center. The Project Review Committee required financial transparency from the Ag Center and coordinated with long-term planning to ensure it could meet its obligation to its lenders.

Is investor framework an optimal start up option for these types of agriculture centers? What are the advantages and disadvantages of investment frameworks?

An investor framework could be optimal for a start-up provided expectations are truly clear and roles are even more clear. Investors have not typically brought farming, small business, or comparable entrepreneurial expertise or experience. Some do have valuable perspectives on the importance of farms, farmers and farming and cross-disciplinary skills to contribute. As with all stakeholders, "knowing what we don't know" and asking can make all the difference in investor contributions. Investment frameworks that honor "farm-time" and the fact that resilient farmland renewal is an act of intervention, patience and perseverance as demanding and more than other real estate / social interventions. Resilient persistence is one phrase that applies.

Optimally, what type of acreage and layout is found to be the best setup?

Many reasons lead many farms to focus on three or more enterprises. Acreage must be ample for exploration, diversification and ongoing adjustments. If co-locating multiple producers / farm operators, the amount of land and its allocation into flexible functional units is key. Farmers often manage this well together, as long as the farm "manager" facilitates well and has the respect of the stakeholders and the investors.

How about interaction between farmers on site?

By and large, interactions between farmers on site were positive. In some instances, farmers jointly sold produce at local markets, shared equipment, knowledge, and land planning. If a pest or disease showed up on one farmer's plot, they would warn others to be on the lookout and take appropriate preventative actions when possible. Farmers also coordinated land use, swapped acreage as appropriate, and worked together to share a vision for future planning with management and member-investors. Management often coordinated and/or hired farmers to handle certain tasks at the property, including aspects of land management. Farmers then worked amongst themselves to solve problems with minimal oversight from management. Working together in these ways instilled a sense of community. In other instances, some farmers were a poor fit for a communal setting and preferred to keep to themselves or exit the project in favor of something more independent.

What are stumbling blocks or considerations for permitting and land use in developing one of these centers in a community?

Most all desirable farm activities are permitted in right to farm communities. Common issues such as road access, parking, storage and handling of products and materials require attention. Farmer housing is subject to many of the same constraints as other new or repurposed buildings and is handled on a case by case basis.

- *Lebanon specific: Recommendations for the Town Ag and Planning Commission toward supporting an affordable farm project at Krause and/or Randall Farm or other attainable land nearby*

Final thoughts?

For all such projects, a key recommendation is to meet with the owners to clarify financial and non-financial interests and timeframe in order to make appropriate plans and complete due diligence. For Randall Farm, a next step should be to communicate with current lessees regarding real and perceived potential collaboration opportunities / competition issues. For Krause, we'd suggest experimenting with a trial lease on a portion of the property as a pilot for a larger project. Discuss and identify key stakeholder interests. Explore the role of a community land trust involvement in the overall process of ensuring affordable farmland access to new and emerging farmers

- *Introduce the SECT CLT and how it works*
- *What role can community land trusts offer in the provision of attainable and affordable farmland in CT for new and emerging farmers*
- *What the steps needed for a land trust to support a project of this type*
- *Specific recommendation for Lebanon for Krause and/or Randall or similar property in the town and building a project of this type*
- *Reach out to farm supportive non-profit organizations to research interest and potential participation*
- *Reach out to Connecticut Department of Agriculture and state and federal legislators for support*

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