



TOWARD A STRONGER AGRICULTURAL VALUE CHAIN IN TIOGA COUNTY

*Strategies to enhance the county's farm and food
economy*

June 2021

*good
food
is
good
business*

PREPARED FOR

Tioga County Economic Development & Planning

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INTRODUCTION & PROJECT BACKGROUND

This project was initiated by Tioga County Economic Development & Planning (ED&P) in an effort to better understand opportunities to support the viability of the county's farm businesses and value chain, and to identify specific points where strategic action could support the growth and vibrancy of the local farm and food economy. Food systems consultancy Karen Karp & Partners (KK&P) was selected to perform research and develop strategies that could guide the work of ED&P and other key stakeholders in the county and region in the months and years to come.

KK&P's work commenced in September 2020 and was completed in June 2021. Research efforts included literature review, data analysis, and stakeholder interviews. The strategy development process was informed by findings from these research efforts, and further refined through stakeholder roundtables, feedback from ED&P and the project steering committee, and additional targeted research.

The recommended strategies laid out in this report offer a range of complementary approaches designed to support viability and innovation at the farm level while simultaneously supporting stronger value chains through coordination and targeted infrastructure. Tioga County and its community of stakeholders are well-positioned to seize greater potential for viability and growth in the county's farm and food economy. The unique assets of the county – its proximity to urban markets in several directions, its land base with cropland and pasture, and its organizations working to support farms and farmers – provide a strong foundation for strategic action and collaboration.

The KK&P team would like to thank the many stakeholders that generously offered their time and expertise through interviews and roundtables; and in particular, we would like to thank the project steering committee, who provided invaluable feedback at critical junctures during the project process:

- Project coordinator for ED&P: Megan Griffiths
- T Hanson, CCE
- Ralph Kelsey, Tioga County IDA
- Mary Kate MacKenzie, CCE
- Tony Marzolino, Marz Farm
- Barb Neal, CCE
- Becca Rimmell, Bottomland Farm
- Wendy Walsh, Tioga County Soil & Water Conservation District

LITERATURE REVIEW

This literature review narrative is intended to summarize findings, recommendations, and context from relevant past research efforts and plans. The summary that follows is based on review of these documents:

- Agriculture Committee Notes. 2020. Tioga County COVID-19 Strategic Economic Recovery Plan.
- Broome County Department of Planning and Economic Development. 2019. Broome County Agricultural Economic Development Plan.
- Environmental Design & Research. 2015. Tioga County Agricultural and Farmland Protection Plan Update.
- Karp Resources. 2005. Final Report: Cooperative Marketing and Distribution Study for Agriculture Products.
- Kitchen Table Consultants. 2016. Southern Tier West: The Invigoration of Local Livestock and Processing Industries.
- Southern Tier Regional Economic Development Council. 2019. State of the Region: Southern Tier 2019 Progress Report.
- Cornell Small Farms Workteam on Grassland Utilization. Green Grass, Green Jobs: Increasing Livestock Production on Underutilized Grasslands in NYS.
- Food & Health Network of South Central New York. 2012. 2012 Regional Food System Assessment for South Central New York.
- Food Bank of the Southern Tier. 2016. Healthy Harvest Program Facts.
- Grow-NY. 2019. The Ag Economy in the Grow-NY Region: An Overview.
- Southern Tier 8. 2018. Comprehensive Economic Development Strategy: Five Year Plan 2018-2022.

Overview of Agriculture in Tioga County and the Region

Agriculture in the Southern Tier is a longstanding and valued industry with great opportunity to grow and expand. The topography consists of rounded hillsides with prime soils concentrated largely in river valleys. According to the 1945 US Census of Agriculture, there were 149,490 farms in the state and over 14 million acres were owned by farmers. As of the 2007 US Census of Agriculture, there were only 36,352 farms and just over 7 million acres owned by farmers. Of those, 3.6 million were being harvested for crops and slightly less than 1 million acres were used for pasture.¹ Dairy remains the top commodity group by value of sales in Tioga County, and beef, grains and dried beans, hay and field crops, and vegetables also make up a large percentage by value of sales.² Both the Food and Health Network (FaHN) of South Central New York's [2012 Regional Assessment](#) and the [Green Grass Green Jobs](#) report indicate that the land in the region best supports perennial forage crops and that raising livestock primarily on hay crop and pasture is the method best-suited for converting local plant energy into food for consumption.³ While there's not enough land in New York State to meet the dietary needs of every resident, by making use of land suited to pasture and forage production to support diets with a moderate amount of meat and dairy products, it would be possible to feed more people with food produced in New York.⁴

Profitability is an ongoing challenge for farms in the region. Of the 536 farms in Tioga County in 2012, less than half (200, or 37%) experienced net income gains. The average net gain for those farms was \$70,824. Another

¹ Green Grass Green Jobs: Increasing Livestock Production on Underutilized Grasslands in NYS, p 4

² Tioga County Agricultural and Farmland Protection Plan Update, p 16

³ 2012 Regional Food System Assessment for South Central New York, p 6

⁴ Green Grass, Green Jobs: Increasing Livestock Production on Underutilized Grasslands in NYS, p 7

336 farms experienced net losses in 2012 with an average loss of \$13,038 per farm.⁵ A similar analysis of sales data in Broome County suggests that the average sales value per farm may be inflated by a relatively small proportion of more profitable farm businesses, as many farms reported very low levels of total farm sales in 2012. Approximately 28% of all operations reported farm sales of less than \$1,000, and an additional 50% reported sales of between \$1,000 and \$20,000.⁶ Additionally, as farm income has decreased, expenditures have increased. Farmers and farmland owners participating in focus groups for the [Tioga County Agricultural Farmland and Protection Plan Update](#) identified the property tax burden as one of the primary obstacles to the viability of agriculture in the county and region.⁷ Southern Tier 8's [Comprehensive Economic Development Strategy](#) plan also highlights the additional costs that businesses in the Southern Tier face, including regulations, fees, and the cost of energy, noting that these costs plus depressed growth rates lead businesses to consider relocating out of the region.⁸

Yet the financial health of farms has an impact beyond each individual farm's bottom line. As the FaHN [Regional Food Assessment](#) identified, multiplier effects suggest that the economic impact of agriculture in the South Central NY area is approximately two times greater than the value of farm sales. This occurs in two ways, first through upstream effects of the jobs and revenue created by farmers purchasing products and services from local businesses, and second through the downstream effects of jobs and revenue resulting from processing, transporting, marketing, and other services necessary to bring products to consumers.⁹ In addition, small- to mid-sized farms are valuable in increasing access to local food. While small farmers who connect directly with consumers only account for 2-10% of total farm sales, they foster thriving local food communities through farmers' markets and community supported agriculture (CSA) programs.¹⁰ Mid-sized farms can ideally produce at a scale profitable for the farm and affordable for buyers, without severely damaging the environment or compromising the health of employees or livestock. These farms play a critical role in supplying institutions like schools, health care facilities, senior centers, large retail stores, and restaurants. The loss of mid-sized farms in the region presents a challenge in sustaining farms that can increase the availability of local products in the channels through which most food is purchased.¹¹

Agriculture and Economic Development Opportunities

Agriculture plays a large role in the county's land use, tourism potential, history, culture, and environmental quality.¹² Several studies have identified an unmet demand for agricultural products in the region and explored solutions for meeting those gaps. The [Broome County Agricultural Economic Development Plan](#) estimated substantial unmet market demand for local food within the regional marketplace, estimated at \$29.9M for meat, \$12.7M for poultry and eggs, and \$35.7M for fruits and vegetables.¹³ This mirrors the demand for local products that has been noted nationwide: according to data compiled by the Wallace Center of the Winrock Foundation, the demand for grass-fed beef, for example, has grown at an annual rate of 25-30% over the previous 10 years. Recent consumer research indicates that this pace will not slow down significantly any time soon.¹⁴ The Southern Tier 8 five-year

⁵ Tioga County Agricultural and Farmland Protection Plan Update, p 22

⁶ Broome County Agricultural Development Plan, p 19

⁷ Tioga County Agricultural and Farmland Protection Plan Update, p 23

⁸ Comprehensive Economic Development Strategy: Five Year Plan 2018-2022, p 53

⁹ 2012 Regional Food System Assessment for South Central New York, p 14

¹⁰ 2012 Regional Food System Assessment for South Central New York, p 23

¹¹ 2012 Regional Food System Assessment for South Central New York, p 16

¹² Final Report: Cooperative Marketing and Distribution Study for Agriculture Products, p 10

¹³ Broome County Agricultural Economic Development Plan, p 20-21

¹⁴ Southern Tier West: The Invigoration of Local Livestock and Processing Industries, p 24

plan also identifies the demand for locally sourced food products as an asset for food and beverage producers, given the region's proximity to major urban areas.¹⁵

KK&P (then known as Karp Resources) conducted a Cooperative Marketing and Distribution Study for Tioga County back in 2005, and even 15 years ago, found that many New York farmers have turned to direct marketing through retail or wholesale channels where fresh, locally grown products are especially in demand. In addition, many direct marketing producers have diversified their operations and transitioned away from single commodity crops, moving to specialty, heirloom, or processed products that command higher prices at these outlets.¹⁶ In the period from 2002 to 2007, the number of farms in Tioga County selling directly to individuals decreased, yet the average amount each person spent on food purchased directly from farms was \$15.23 for Tioga County, higher than the regional average of \$11.29 per person.¹⁷ Likewise, in the neighboring Southern Tier West region, 13-14% of farms were marketing through direct to consumer channels in 2016, notably higher than the national average of 7.8% as reported in Census of Agriculture data.¹⁸

Several initiatives in the region have provided new direct to consumer opportunities for farm businesses. The Broome County Regional Farmers Market in Binghamton allows vendors to rent space based on their schedule, ranging from one day at a time to the full season. Vendors also have access to commercial kitchen facilities for the production or testing of value-added agricultural products. Meat Suite is an online directory of meat producers throughout New York State and a platform for connecting consumers directly with participating farm operations. Meat Locker is a companion project that provides freezer space for producers and consumers engaged in the freezer trade.¹⁹ The Southern Tier West report identified that a frozen storage facility, such as the Meat Locker project, overcomes a barrier to purchase and creates demand around sales channels that produce the best results for farmers.²⁰

Supporting agriculture through cooperative marketing and distribution has been explored through several studies. The Cooperative Marketing and Distribution Study conducted in 2005 explored cooperative distribution methods for agricultural products in Tioga County. The study found a schism between long-time farmers and new farmers. Additionally, among dairy farmers, those with large operations were relatively content with their participation in either the existing cooperative or the commodity systems while smaller dairy farmers did not earn a sustainable income when the government-set milk price was low.²¹ Within the livestock and meat sector, farmers felt the lack of a nearby slaughterhouse as a significant hindrance to their operations, as meat processed at the more readily available NYSDAM 5-A facilities may not be sold commercially.²² The study concluded that agriculture in the county is too diverse and enthusiasm for cooperative marketing and distribution was not strong at that time. Instead, efforts geared towards small groups of farmers clustered around specialty products were recommended.²³ In 2013, a food hub feasibility study was undertaken in the neighboring Southern Tier West region, and while the farmers interviewed were moderately to strongly interested in participating there were a number of potential barriers. Price not being substantially lower than direct market prices was important to farmers, and some potential logistical problems emerged such as smaller farmers not being prepared for GAP certification and farmers preferring that the food hub be within a 20-30 minute drive, which poses a challenge in a

¹⁵ Comprehensive Economic Development Strategy: Five Year Plan 2018-2022, p 24

¹⁶ Final Report: Cooperative Marketing and Distribution Study for Agriculture Products, p 18

¹⁷ 2012 Regional Food System Assessment for South Central New York, p 23

¹⁸ Southern Tier West: The Invigoration of Local Livestock and Processing Industries, p 20

¹⁹ Broome County Agricultural Economic Development Plan, p 34

²⁰ Southern Tier West: The Invigoration of Local Livestock and Processing Industries, p 56

²¹ Final Report: Cooperative Marketing and Distribution Study for Agriculture Products, p 13-14

²² Final Report: Cooperative Marketing and Distribution Study for Agriculture Products, p 15

²³ Final Report: Cooperative Marketing and Distribution Study for Agriculture Products, p 33

rural area.²⁴ Likewise, while buyers were enthusiastic about the idea of a one-stop-shop to simplify their ordering of local produce, many were concerned about the cost and had the perception that their customers had only modest interest in local foods.²⁵ The study concluded that a food hub would be unlikely to succeed at that time, suggesting instead a coordinated, local foods scale-up initiative that could serve as a foundation for a future food hub.²⁶

Relevant Existing Planning Efforts

Several agricultural and economic development plans have valuable intersections with work in the Southern Tier.

Tioga County Agricultural and Farmland Protection Plan Update (2015)

This plan updated Tioga County's last Agricultural and Farmland Protection Plan approved in 1998. Through collecting and analyzing public participation feedback, evaluating current conditions affecting the state of agriculture, and ranking agricultural lands for land protection initiatives, a series of strategies and actions to advance Tioga County agriculture were recommended.

As a result of the public participation through public meetings, focus groups, and surveys, the three highest rated goals by farmers and non-farmers alike were to achieve sustainable growth in the agricultural economy, attract new and beginning farmers to the agricultural sector, and increase the economic viability of agriculture through increased energy efficiency and the use of local natural energy resources.²⁷ Additionally, public participation identified several farm and business types that are under-represented and could fill existing gaps in the county's agricultural economy. In addition to value-added agriculture and USDA-inspected slaughtering facilities mentioned previously, these businesses include implement and equipment dealers, small cereal grain and hop production/processing, non-traditional or niche crop and livestock production, post-harvest processing and storage facilities, and farm product marketing and distribution.²⁸

The plan produced seven goals in support of a vision for a viable, diverse, and growing agricultural sector within Tioga County:

1. Achieve sustainable growth in the agricultural economy
2. Maintain adequate access to quality farmland
3. Attract new and beginning farmers
4. Develop and support agricultural education, and provide technical assistance
5. Improve communication between farmers, rural landowners, and public agencies
6. Assist farms in dealing with environmental challenges and opportunities
7. Increase the economic viability of agriculture through increased energy efficiency and use of local natural energy resources²⁹

Multiple agricultural and farmland protection strategies are outlined in support of these goals. Two strategies of particular interest are related to the first goal of achieving sustainable growth in the agricultural economy: to

²⁴ Building a Food Hub in the Southern Tier West Region of New York State, p 4

²⁵ Building a Food Hub in the Southern Tier West Region of New York State, p 5-6

²⁶ Building a Food Hub in the Southern Tier West Region of New York State, p 7-8

²⁷ Tioga County Agricultural and Farmland Protection Plan Update, p 10

²⁸ Tioga County Agricultural and Farmland Protection Plan Update, p 26

²⁹ Tioga County Agricultural and Farmland Protection Plan Update, p 43

increase the profitability of existing farm enterprises within Tioga County, and to develop new opportunities for production, aggregation, marketing, and distribution.³⁰

State of the Region: Southern Tier 2019 Progress Report

This report from the Southern Tier Regional Economic Development Council (STREDC) provides updates on existing projects, identifies regional priorities, identifies strategies and actions related to state priorities, and provides details on recommended priority projects. One of the plan's four segments is to transform the food and agriculture industry, making the Southern Tier a world-recognized leader in agriculture technology and serving as a key food supplier for the East Coast of the United States. A strategic mix of projects will transform and grow agriculture and food production, processing, and distribution across the region, while also strengthening links to growing tourism and manufacturing industries.³¹

The initiative to transform the food and agriculture industry includes developing new technologies to transition the Southern Tier from being a highly seasonal, occasional provider of food products to a reliable source of supply for the East Coast; increasing the diversity of and access to food processing facilities around the region; and leveraging the location at the crossroads of upstate New York via the creation of a "food hub" network.³² The Southern Tier West report also identifies the lack of food hubs in the greater region as a missed opportunity. Food hubs are often the next step for direct to consumer farms that are seeking another sales channel.³³ Additionally, value chains are identified by FaHN's Regional Food Assessment as a source of untapped potential for increased economic development, both in expanding meat, poultry, dairy, and grain processing, as well as aggregating and distributing locally grown products.³⁴

Food processing has been identified as both an opportunity and challenge in the region by other projects like the Broome County Agricultural Economic Development Plan. While local farmers can use processors to add value to their products, reach new markets, and expand their product offerings and seasonal availability, economic changes have left fewer options for food manufacturing, and what processors remain within the region do not necessarily source their supplies locally.³⁵ However, the STREDC identifies several priority projects of special interest in light of these concerns. The expansion of Upstate Farms Cheese LLC would increase production of cheese by 30% and result in an additional 175 million pounds of milk needed on an annual basis. The Saputo Dairy Foods project would enable Saputo to increase its processing capacity and diversify its product lines, while also stimulating new demand for New York State milk. The Sam A Lupo Sons Inc project to expand their current meat processing would increase efficiencies and improve storage, helping to relieve a pain point for livestock producers.³⁶ One final initiative worth mentioning is Grow-NY, a business competition started in 2019 to advance tech and innovation in the food and agricultural industry in Upstate New York.³⁷

Comprehensive Economic Development Strategy: Five Year Plan 2018-2022

This report from Southern Tier 8 is intended to be the organization's guiding document in directing and evaluating regional community and economic development progress over the five-year period from 2018 to 2022. Six objectives are identified, with strategies and milestones laid out for each. Many of the objectives and strategies only

³⁰ Tioga County Agricultural and Farmland Protection Plan Update, p 44

³¹ State of the Region: Southern Tier 2019 Progress Report, p 4

³² State of the Region: Southern Tier 2019 Progress Report, p 41

³³ Southern Tier West: The Invigoration of Local Livestock and Processing Industries, p 22

³⁴ 2012 Regional Food System Assessment for South Central New York, p 19

³⁵ Broome County Agricultural Economic Development Plan, p 24

³⁶ State of the Region: Southern Tier 2019 Progress Report, p 51-53

³⁷ State of the Region: Southern Tier 2019 Progress Report, p 41

tangentially touch on the agricultural economy, although agriculture is well represented in their goals to adopt regional marketing strategies and develop strategies to focus on small, rural communities. The regional marketing goal encompasses several strategies to improve the appeal of the region's communities. Some existing initiatives are highlighted as examples of regional marketing success, including the Tioga Arts & Agriculture Trail that was a self-guided tour through art studios, galleries, and farmland (not active since 2019, though there is now a regional county farm tour planned for 2021), and the Regional Farmers Market and Commercial Kitchen in Broome County.³⁸ The broader regional marketing strategy includes an intention of developing a regional marketing plan for food and agriculture, which will be a benefit to farm and food businesses in the region.

The rural development objective assesses the impact of limited transportation and improving the viability of rural healthcare services, along with improving economic development opportunities. The latter intersects with the agricultural economy through supporting the trend of local food sourcing and highlights the Center for Agricultural Development and Entrepreneurship (CADE) as a positive example with its mission of increasing the number and diversity of successful farm enterprises and related businesses in New York.³⁹

Summary

A viable agricultural economy in Tioga County remains a priority for farmers, residents, and organizations. Re-evaluating the findings of past research and feasibility studies in light of current circumstances can help inform and guide long-term strategies. However, addressing the many challenges and disruptions caused by COVID-19 is a top short-term priority. To that effect, the Agriculture Committee of the Tioga County COVID-19 Strategic Economic Recovery Plan prioritized recovery actions to support farmers in pivoting to e-commerce, connecting with direct marketing sources, and addressing disruption in the fluid milk supply chain. Longer-term redevelopment actions prioritize assisting farmers in creating more resilient farm businesses, instructing institutions on buying direct from farmers, and educating students and consumers on the importance of local food. As COVID-19's impacts on the local food system continue to reverberate, longer range solutions and strategies will continue to evolve.

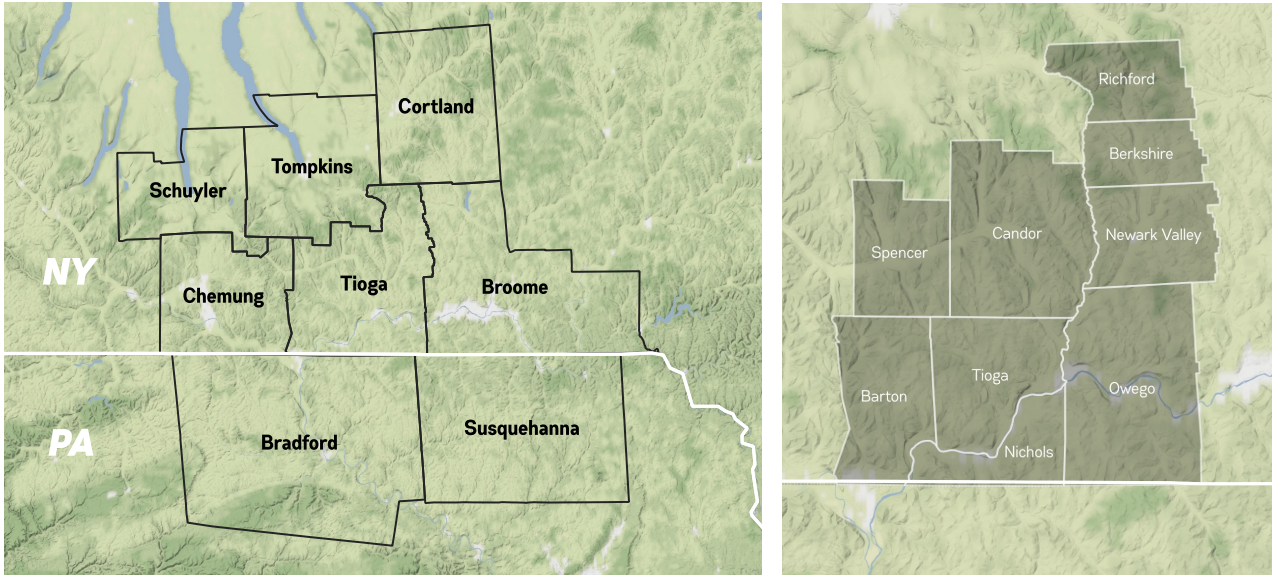
³⁸ Comprehensive Economic Development Strategy: Five Year Plan 2018-2022, p 64-65

³⁹ Comprehensive Economic Development Strategy: Five Year Plan 2018-2022, p 71

DATA ANALYSIS

As with the Literature Review, the Data Analysis research, which is based primarily on the 2017 USDA Census of Agriculture, is intended to provide relevant context for trends and dynamics in Tioga County's agriculture sector. Findings and themes are summarized below.

Regional Overview



For this analysis, we have included Tioga's seven nearby surrounding counties (above left) to provide regional context. In all data outlined below, this eight-county region (including Tioga County) is referred to as the Cohort Region. The detail map above right shows the interior boundaries of Tioga County's nine towns.

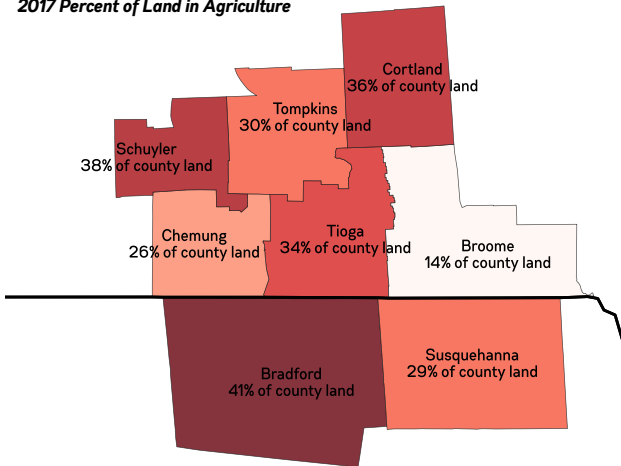
County	State	Total Land Area (Acres)	Population	Pop. Per 100 Acres (all land)
USA - Total				15
NY - Total				65
Cohort Region		3,138,819	590,366	19
Tioga	NY	331,910	48,203	15
Broome	NY	451,706	190,488	42
Chemung	NY	260,706	83,456	32
Cortland	NY	319,215	47,581	15
Schuyler	NY	210,133	17,807	8
Tompkins	NY	303,775	102,180	34
Bradford	PA	734,335	60,323	8
Susquehanna	PA	527,039	40,328	8

The table above provides basic context in county land area, population, and population density (within each column, darker colors represent higher values). Broome (home to Binghamton) is by far the Cohort Region's most populous county, with Tompkins (home to Ithaca) and Chemung (home to Elmira) as the region's second and third most

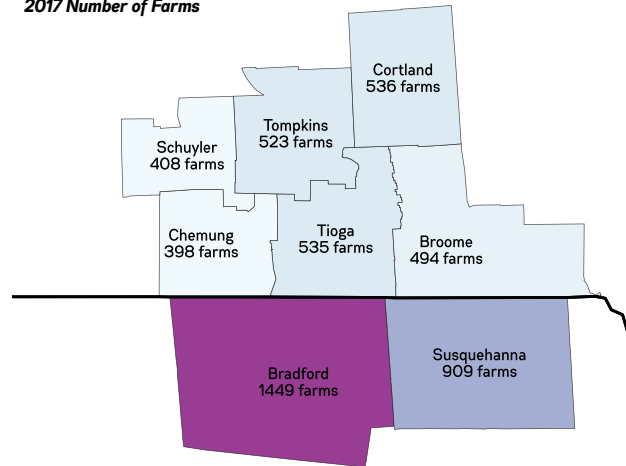
populous counties; these are also the region's three most densely populated. Tioga County is somewhat less densely populated than the region as a whole, and is the fifth most populous county of the eight-county cohort. Given its location, it has good access to the top three most populous counties, not to mention to the full region's residents, which number over half a million.

Farms & Farmland

2017 Percent of Land in Agriculture



2017 Number of Farms



The maps above visualize 2017 percent of land in agriculture and number of farms for each of the eight counties. The table below provides additional detail on Tioga County and the region's farms and farmland. In the 2007-17 columns, red cells denote negative growth and blue cells denote positive growth.

County	State	2017 Land in farms (Acres)	2007-2017 Change in farmland (%)	2017 Median Farm Size (Acres)	2017 Median Farm Size (bar)	Number of Farms	2007-2017 Change in Number of Farms	2007-2017 Change in Number of Farms (%)	
USA - Total			-2%	75				-7%	
NY - Total			-4%	82				-8%	
Cohort Region		984,164	0%	n/a		n/a	5,252	-300	-5%
Tioga	NY	113,182	6%	100		535	-30	-5%	
Broome	NY	62,467	-28%	70		494	-86	-15%	
Chemung	NY	66,904	3%	90		398	25	7%	
Cortland	NY	113,519	-9%	100		536	-51	-9%	
Schuyler	NY	78,805	19%	76		408	14	4%	
Tompkins	NY	91,277	-16%	55		523	-65	-11%	
Bradford	PA	303,601	14%	131		1,449	-8	-1%	
Susquehanna	PA	154,409	-2%	109		909	-99	-10%	

In terms of Percent of Land in Agriculture, Tioga County, at 34%, is in the middle of the Cohort Region counties, and is just slightly ahead of the region as a whole (31%). Broome County has the lowest percentage of its land in agriculture (14%) and Bradford has the highest (41%). Tioga County is at the upper end of New York counties in the region in terms of Number of Farms; Pennsylvania's counties have more farms, which tracks with their larger land area.

Tioga County actually gained farmland (6%) from 2007 to 2017, a period during which the region as a whole held steady in farmland (no net loss or gain) and New York State lost 4% of its farmland. Interestingly, Schuyler and Bradford counties saw even more dramatic increases in farmland, of 19% and 14% respectively.

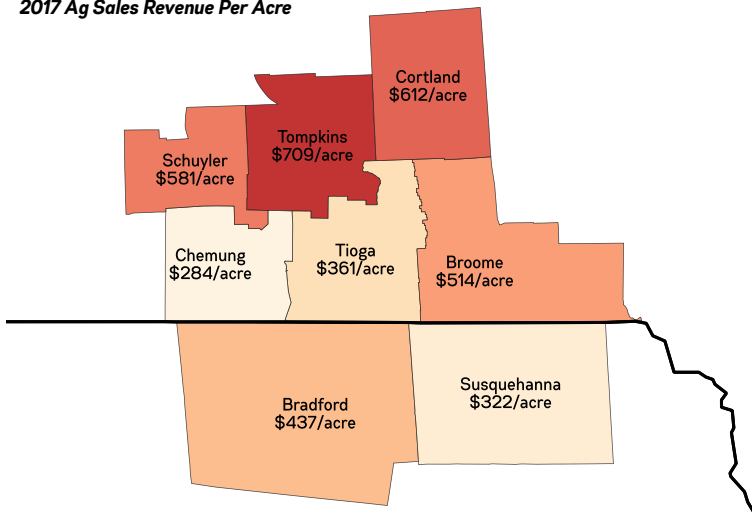
Tioga County's median farm size of 100 acres is tied for third largest in the Cohort Region, only behind the two Pennsylvania counties; Tioga's median farm size is significantly larger than the NY statewide median of 82 acres.

Tioga County lost 30 farms, or 5% of its farms, from 2007 to 2017 – the same rate of farm loss for the region as a whole, and a lower rate of loss than in NY state. Chemung and Schuyler stand out as the only two counties that gained farms during this ten-year period.

Notably, Tioga County **lost farms** while **gaining farmland** from 2007 to 2017. These two trends together indicate that the county's farms are getting larger. Indeed, the county's average farm size (data not shown) increased by 12% from 2007 to 2017—twice the rate of increase for the Cohort Region, and three times the NY state rate of farm size increase.

Agriculture Sales

2017 Ag Sales Revenue Per Acre



County	State	2017 Ag Sales (\$)	2007-2017 Change in Sales (%)	2017 Crop Sales (\$)	2007-2017 % Change in Crop Sales	2017 Animal Sales (\$)	2007-2017 % Change in Animal Sales	2017 % Crop Sales	2017 % Animal Sales
USA - Total			31%		35%		27%	50%	50%
NY - Total			22%		35%		14%	39%	61%
Cohort Region		\$454,332,000	13%	\$129,249,000	112%	\$325,085,000	-5%	28%	72%
Tioga	NY	\$40,857,000	11%	\$12,205,000	149%	\$28,652,000	-10%	30%	70%
Broome	NY	\$32,087,000	7%	\$10,396,000	87%	\$21,691,000	-11%	32%	68%
Chemung	NY	\$19,012,000	14%	\$9,615,000	206%	\$9,398,000	-30%	51%	49%
Cortland	NY	\$69,506,000	27%	\$13,688,000	149%	\$55,818,000	13%	20%	80%
Schuyler	NY	\$45,753,000	38%	\$15,154,000	21%	\$30,599,000	49%	33%	67%
Tompkins	NY	\$64,702,000	8%	\$15,932,000	4%	\$48,771,000	9%	25%	75%
Bradford	PA	\$132,640,000	9%	\$37,581,000	309%	\$95,059,000	-15%	28%	72%
Susquehanna	PA	\$49,775,000	1%	\$14,678,000	208%	\$35,097,000	-21%	29%	71%

The map and table above illustrate key data for agriculture sales in the region's counties. The map shows Agriculture Sales Revenue Per Acre, which normalizes each county's total agriculture sales by the amount of land in agriculture. Tioga County is ranked sixth out of the eight counties. Tompkins County stands out for having very high sales per acre—nearly twice that of Tioga—and Cortland, Schuyler, and Broome counties also have notably high sales per acre. These counties' higher sales per acre appear to be enabled by a higher proportion of cropland (vs. pasture or woodland) in its farmland, perhaps allowing more intensive and profitable land use. Tioga County's relatively lower total agriculture sales per acre, in contrast, appears to be driven by a much higher proportion of woodland in its farmland, and less emphasis in some higher-value product categories, including fruit, vegetables, value-added products, and animal sales.

Tioga's 2017 total sales of \$40.9 million represents an 11% increase in sales from 2007, just slightly lagging the Cohort Region's increase of 13%, but more substantially lagging sales growth statewide (22%) and for the US as a whole (31%).

From 2007 to 2017, the region as a whole saw a modest shift away from animal products (sales decrease of 5%) and a more pronounced shift toward crops (sales increase of 112%); Tioga County outpaced this shift with a 10% decrease in animal sales and 149% increase in crop sales. Chemung County leads this trend in the region, with a dramatic swing from 2007 to 2017: Chemung is now the only county in the Cohort Region where crop sales make up a majority of its agriculture sales (at 51%, with the next highest county being Schuyler at 33%). This trend is not borne out at the state or national levels, which saw sales increases in both categories, but more modest growth in crops.

Even with this shift toward crops, Tioga County, and the Cohort Region as a whole, remain quite anchored by animal sales, which account for 70% of Tioga's total sales, and 72% of the region's. Whereas Chemung stands out for its crop focus, Cortland stands out for its focus on animal products, which account for 80% of its total sales.

Direct Marketing

County	State	2017 Farms w. Direct Sales	2017 % of Farms w. Direct Sales	2017 Direct Sales (\$)	2007-2017 % Growth in Direct Sales	2017 Direct Sales % of All Ag Sales	2017 Farms w. Direct to Retailer Sales	2017 % of Farms w. Direct to Retailer Sales	2017 Direct to Retailer Sales (\$)	2017 Operations with value-added Sales	2017 Value-added Sales (\$)
USA - Total			6%		132%	1%		1%			
NY - Total			17%		188%	4%		5%			
Cohort Region		747	14%	\$12,726,000	109%	3%	170	3%	\$6,178,000	201	\$6,121,000
Tioga	NY	88	16%	\$2,690,000	251%	7%	12	2%	\$1,405,000	31	\$285,000
Broome	NY	85	17%	\$859,000	27%	3%	11	2%	\$227,000	18	\$96,000
Chemung	NY	58	15%	\$467,000	-49%	2%	11	3%	\$216,000	17	\$458,000
Cortland	NY	78	15%	\$546,000	-24%	1%	40	7%	\$1,032,000	24	\$157,000
Schuyler	NY	82	20%	\$3,779,000	375%	8%	25	6%	\$1,535,000	34	\$4,027,000
Tompkins	NY	101	19%	\$1,911,000	105%	3%	36	7%	\$372,000	36	\$419,000
Bradford	PA	163	11%	\$1,638,000	107%	1%	29	2%	\$1,391,000	25	\$206,000
Susquehanna	PA	92	10%	\$836,000	66%	2%	6	1%	(D)	16	\$473,000

The table above summarizes key data regarding direct marketing. "Direct sales" refers to direct-to-consumer sales, including farmers' markets, farm stands, and CSAs. Direct-to-retailer sales accounts for local wholesale activity, and value-added sales capture sales of products resulting from on-farm value-add practices.

According to the data, Tioga County performs strongly in direct marketing. It saw tremendous growth in direct sales from 2007 to 2017 (251%), and has the second highest value of direct sales of the eight counties in the

Cohort Region. Tioga County's direct sales in 2017 accounted for 7% of its total agriculture sales, second only to Schuyler County, and higher than the region, NY state, and national shares.

On the other hand, Tioga County modestly underperforms in direct-to-retailer farm participation, though its sales in that category are second highest in the region. Schuyler County vastly outperforms the rest of the region in value-added sales, whereas Tioga County is roughly in line with the rest of the region.

Tioga County's Top Products

2007			2012			2017		
Product	Sales	Farms	Product	Sales	Farms	Product	Sales	Farms
Milk	\$27,295,000	104	Milk	\$22,268,000	77	Milk from cows	\$21,421,000	59
Other crops, hay	\$1,511,000	202	Grain	\$4,680,000	96	Other crops and hay	\$4,572,000	244
Horticulture	\$1,469,000	14	Other crops, hay	\$4,618,000	245	Grains, oilseeds, dry beans, dry peas	\$4,024,000	86
Grain	\$712,000	53	Cattle	\$2,495,000	183	Cattle and calves	\$3,489,000	172
Vegetable	\$690,000	21	Vegetables	\$930,000	27	Nursery, greenhouse, floriculture, sod	\$2,571,000	22
						Sheep, goats, wool, mohair, milk	\$2,468,000	34

The table above displays Tioga County's top agricultural commodities in 2007, 2012, and 2017. Milk has consistently been the county's top product by a significant margin, though milk sales and dairy farms have declined while other commodity groups have grown. In particular, the "other crops and hay" category has grown substantially during this ten-year period⁴⁰, as has the grain category. Growth in the grain category has been driven by five-fold growth in corn sales and nearly tenfold growth in soy sales (not shown); corn alone accounts for 85% of grain sales. Notably, Tioga County was ranked number one in New York State for sheep and goat product sales in 2017, making sheep and goat products the county's sixth largest commodity group, driven almost entirely by the sales of "Sheep, including lambs." However, this sales figure seems potentially anomalous or erroneous, as it doesn't line up well against other comparison figures, and should therefore be interpreted with caution.

Key Takeaways from the Data

- Tioga County has strong geographic access to more populous markets in Broome, Tompkins, and Chemung counties.
- Unlike New York State and the Cohort Region, Tioga County gained farmland between 2007 and 2017, even though it lost individual farms during that period.
- Tioga County has lower sales revenue per acre than several of its neighboring counties.
- The past decade has seen Tioga County shift somewhat from animal agriculture (largely driven by dairy) to crop agriculture (largely driven by hay), though animal agriculture still accounts for a majority of its sales. This trend is consistent with trends in the broader Cohort Region.
- The 2017 Census of Agriculture shows strength in Tioga County direct-to-consumer marketing, with high farm participation, high sales as a share of total agriculture sales, and high growth from 2007.
- Milk remains Tioga County's most important commodity by a large margin, but other commodities have grown while milk has declined.

⁴⁰ USDA data does not provide further breakdown of the "other crops and hay" category, though it aggregates crops including hay and grass silage, haylage, hops, maple syrup, sugarbeets, etc.

THEMES FROM INTERVIEWS

To complement our findings from the literature review and data analysis, KK&P conducted a series of sixteen informational interviews across the local food supply chain in and around Tioga County. We developed a standard set of questions for each type of interviewee: distributors, processors, retailers/restaurant owners, home delivery buyers, institutional buyers, agricultural support professionals and across agriculture production sectors, production methods, scales of operation, and marketing models. Through these one-hour interviews, we sought to better understand the relevant dynamics, challenges, and opportunities for agriculture in Tioga County. These conversations revealed overarching themes related to market expansion for Tioga County farmers, summarized below.

Tioga County is an export agricultural community with limited potential for in-county expansion but significant opportunities in nearby population centers in the regional foodshed.

Much of Tioga County's agricultural product is being sold outside of the county. Tioga farmers selling direct-to-consumer participate in a regional foodshed where much of their product is being purchased by consumers in neighboring counties such as Broome and Tompkins counties and beyond. While there are certainly standout in-county direct-to-consumer examples (e.g., Mandeville Farms, Engelbert Farms), of the Tioga farmers we spoke to, many find opportunities in neighboring counties to be more fruitful. There seemed to be a sense among farmers that pricing of value-added local products in particular was a barrier to hyper-local sales. One farmer noted that while she found customers in Tioga County generally do not show an interest in her value-added products, she gets a very different reception to her products even one county away.

Opportunities to support and expand direct-to-consumer sales in the regional foodshed abound, according to several farmers we spoke with. Market development, advanced business support, aggregation and distribution, and support with regulatory hurdles were all mentioned as ways to support the development of marketable agricultural products in Tioga County.

Efforts focused on direct-to-consumer channels are not relevant for all farms or farmers. Asking farmers to become marketers, multi-channel sales managers, and value-added producers is daunting and only relevant to a small number of entrepreneurial farm families. Other new single-stream market channels, including wholesale, may be a key opportunity for some existing operations.

Shifting dynamics and demographics in the agricultural community are changing the face of farming in Tioga County, and create new opportunities for collaboration and cooperation.

The continuing dairy crisis has created lasting and widespread shifts in the local agricultural community, with the consolidation of landholdings to larger agribusiness dairies, and a sharp decline in small family dairies (100 head or under). These shifts have precipitated a reduction in associated agricultural businesses such as feed mills and supply stores. There is a deep sense that this shift leaves a hole in the fabric of the agrarian landscapes, economies, and cultural characteristics that make the county unique.

In the last 10 years, a growing number of small family farms have been purchased by Amish families, largely from Ohio. These families are seeking farms with existing infrastructure to support small-scale dairy operations, changing the economics for some multigenerational farmers in Tioga County looking to sell and retire. Additionally, the Amish community has revived some agricultural support businesses like a new produce auction (outside of Tioga County), packaging, and feed sales that benefit other farmers in the area. We spoke with several farmers that have a symbiotic relationship with local Amish families, trading work on the farm with work acting as drivers,

providing important transportation opportunities for Amish families. One farmer said, “the new Amish farmers in the area have created a vibrancy in the farm community that did not exist” and went on to say that “they are exactly what we have been asking for, but we don’t know it.”

In the case of one eighth generation Tioga family farm, the recent purchase of one of their farms, and the confidence that their second home farm will be purchased by Amish farmers when they are ready to sell, has been a profound and transformational opportunity for them. When asked about how the influx of Amish farmers is affecting land values, the farmer stated that “Amish farm families value the existing infrastructure of our grass-based family farm, and their willingness to pay for the inherent value of existing community scaled dairies is life-changing for farmers looking to sell their family land.” It affords them an exit strategy that allows for the continuation of the farm operation at a scale that protects the land, contributes to the community as an active business operation, and gives them the financial ability to retire.

Although there were calls from many interviewees to invest in creating new programs and opportunities to attract first-generation farmers from outside the region to farm in Tioga County, some advocated providing equal investment in working to attract and sustain seasoned, experienced, self-funded Amish farmers that provide stability and vibrancy to small-scale farm operations.

There seem to be some tensions and misconceptions around Amish farmers, their purchase of land at higher values, and their contribution to the community (tax base, etc). There may be value in reframing this shift in farm ownership as a benefit to both the agricultural community and the scenic and cultural traditions of the county.

Emerging direct-to-consumer strategies create new sales channels for some small farms in Tioga County, but logistical challenges persist.

The explosion of online sales pre-dates COVID, but the pandemic has accelerated a shift toward online, contactless delivery systems for food, and created a disruption in the home delivery and grocery space. There are several emerging models in Tioga County and surrounding areas that are moving local products to and from customers and farmers between the Southern Tier, Finger Lakes, Binghamton, Northern Tier of Pennsylvania, and beyond. Some of these models are operating at break-even, meant to support farmers and consumers in accessing markets and local food, and some are in the red as they seek to break into new markets and prove a regional direct-to-consumer food hub model.

One of the established home delivery services in the area, which is making in excess of \$1 million in local food purchases in a year, states that only 40% of their customers are what they consider to be “affluent,” and that a majority are of “average” income, with an estimated yearly income range of \$35,000-\$50,000. This diversity of customers in primarily rural areas suggests that with the right product mix, marketing, and services, local food retailers can continue to expand market share in nontraditional population groups, challenging notions about who will buy and pay for local, and in this example, organic items.

There is news that another home delivery service will be expanding its footprint into the Broome/Tioga region in 2021, with each venture stating an interest in siting a central aggregation hub in Tioga as they expand service and product sourcing regions.

Tracking and supporting the success of these models will be key to supporting smaller farm operations in developing alternative sales channels with a regional focus.

Increasing investments and creative program developments in the farm-to-institution sector create new opportunities for Tioga farmers.

The charitable and institutional food systems have been disrupted and challenged by the pandemic, and new opportunities are emerging for local farmers to feed their communities through these channels. Food banks and farm-to-school leaders struggle with limited knowledge of existing farms' production capacity, bidding ability, and transportation channels; this gap in understanding acts as a significant roadblock to purchasing more local food from Tioga farmers. These bureaucratic systems that require bidding and exacting production volumes are a hurdle to farmer participation. There are real dollars available for local purchasing, and there is active outreach happening in 2021 to better understand crop availability and transportation challenges in order to allow more Tioga farmers to participate in these markets.

Efforts to address challenges to buying local at the institutional level are emerging. After not being able to spend down allocated funds to buy from local farmers in 2020, the Food Bank of the Southern Tier team is conducting a survey to assess crop availability and hurdles to participation. Anecdotally, farmers seemed unfamiliar or challenged by the bidding process, one that works well for large-scale farmers that are comfortable with forecasting in the fall for next summer's harvest, but seems a barrier to small farmers.

New York State supports local food buying at the school level by providing incentives of 19 cents per meal if the district is meeting the goal of 30% local purchasing. At 19,000 meals per day in the 15 school districts handled by Broome Tioga BOCES, there is a significant opportunity for increasing local food purchasing. Broome Tioga BOCES is not currently purchasing from any Tioga farmers due to a lack of a comprehensive understanding of the active farms in the county, barriers to the bidding process for producers, and scale to meet demand. Many farmers simply are not familiar or comfortable with the bidding process. This year, Broome Tioga BOCES will be using grant dollars to fund a truck and driver to do direct pick-ups from farmers, a significant opportunity to create new sales opportunities for Tioga farmers to supply the three county districts and beyond if the value chain connections are made and supported through the relationship development process.

Aggregation and distribution challenges blunt new opportunities for small farms in Tioga County and the buyers that seek their products.

Access, aggregation, and distribution challenges emerged as a central issue in the expansion of markets for Tioga farmers. Many wholesale buyers felt that transportation was their single biggest hurdle to supporting more Tioga farmers. Efficiently moving product through the regional foodshed remains a key opportunity for improvement, as schools, food banks, wholesalers, and retailers seek to gain access to local products. Poorly controlled trucking costs can affect profitability for farm enterprises and resellers equally and remains a key barrier to increasing local food consumption.

In each sector of the local food system, we heard challenges with logistics and access to product in the county. One of the start-up home delivery services we spoke with said that "trucking is the single biggest hurdle to working with Tioga farmers because most do not deliver, so pick up on the farm is the only option." Although an Amish-run produce auction nearby has offered new options for access and distribution, this does not address year-round transportation, as well as the movement of non-produce items such as meats, dairy, and value-added products central to Tioga's agricultural production. Coordinated efforts to improve the timely movement of Tioga-grown products could result in significantly improved market opportunities.

Summary

The state of agriculture in Tioga County has been shifting over the past two decades; these shifts have been accelerated by a deepening dairy crisis and, since early 2020, a pandemic that has shaken conventional supply chains and anchor businesses. Tioga direct-to-consumer farmers have seen a sharp surge in demand in 2020, but this growth is in contrast to the systemic disruption of the larger wholesale supply chain for Tioga farmers. One farmer noted that his primary wholesale account to a national grocery chain had all but disappeared when the pandemic struck and did not recover; conversely, his retail sales exploded in 2020. Local food procurement has taken on new meaning for institutional buyers and consumers alike. With interest in local food and available resources increasing in the charitable and institutional food sectors, there is an opportunity to develop relationships and supply channels that overcome current barriers to markets while more closely aligning resources to ensure that farmland stays in active production with sustainable business models that enhance the cultural and economic landscape of Tioga County.

STAKEHOLDER ROUNDTABLES

The KK&P team facilitated two stakeholder roundtable discussions (held virtually via Zoom) on March 24 and March 25, 2021. The roundtables were designed as an opportunity to gather feedback and refine the team's emerging strategies. During each roundtable, the KK&P team provided a brief overview of research and strategy development to date, before dividing participants into smaller breakout sessions to discuss potential strategies in detail. After these breakout sessions, participants returned to the full group for additional discussion.

The following stakeholders participated:

- Laura Biasillo, CCE Broome County
- Lisa Bloodnick, Bloodnick Family Farm
- Mark Bordeau, Broome Tioga BOCES
- Alyssa DeVilliers, Golden Grove Farm
- Robin Hulzinga, Hulzinga Farm (departed prior to breakout due to tech)
- Tom Lewis, Rural Health Network
- David Nowacoski, Delivered Fresh
- Lisa Rose, Business owner (opening grocery store in Candor)
- Erin Summerlee, Rural Health Network
- Caroline Tolbert, Food Bank of the Southern Tier
- Adrienne Traub, Seven Valleys Health Coalition
- Lindsay Wickham, New York Farm Bureau
- Amy Willis, Broome County Regional Farmers' Market

The preliminary strategies presented and discussed included:

- Farm-based strategies
 - Support the development and expansion of goat and sheep production in the county
 - Build value-added dairy supply chains
 - Encourage farm-based innovations that leverage the assets of Tioga County and the region
 - Create a virtual farm incubator
- Value-chain strategies
 - Pursue and provide active value-chain coordination
 - Expand wholesale markets through partnerships with institutional and charitable buyers
 - Develop a shared-use aggregation facility and/or other resources to support the movement of product
 - Explore place-based regional marketing efforts

Themes from Discussion

At a high level, the following four strategies emerged as most favored by the stakeholders in attendance:

- **Value-chain (VC) coordination:** Stakeholders were optimistic about the potential impact of more active coordination in the region's value chain: a person or group/organization whose focus would be to build relationships, troubleshoot bottlenecks and barriers, and function as a one-stop shop for resources,

opportunities, and information. Tom Lewis (of Rural Health Network) performs value-chain coordination functions in his current role, and sees potential greater impact in regionality – networking coordination efforts at a regional level, beyond the hyperlocal. The VC coordination strategy also has potential linkages to marketing/branding efforts. Stakeholders acknowledged the challenges of institutional purchasing (low prices, complex procurement), and thought a VC coordinator could help mitigate or overcome some of those barriers. A few stakeholders also mentioned the bottlenecks in slaughter/processing capacity, which could potentially be mitigated (or at least better understood) through VC coordination.

- **Shared-use aggregation:** Closely related to the VC coordination strategy is the idea of shared-use aggregation infrastructure, and overall increased resources for distribution, which emerged as another leading strategy. “If we don’t have aggregation, none of the other initiatives will work.” Efficient and effective aggregation of product is seen as a critical linchpin in further developing the county value chain. At the same time, stakeholders acknowledged that active facility management and coordination will be needed as a dedicated role or portion of a role. This facility initiative could be led by a private sector player (e.g. Delivered Fresh), and it was affirmed that private sector competitors could collaborate on such an initiative as a pre-competitive effort, with the shared goal of supporting the area’s farms and farmers. Participants also emphasized the importance of creating a facility that truly meets the needs: loading docks, cold storage, dry storage, and (as previously mentioned) an active coordinator. Developing more clarity on who the users or “audience” are, as well as the risks, goals, and key stakeholders, will be important for success.
- **Farm-based innovation:** Stakeholders were drawn to this strategy especially because, rather than a top-down approach of telling farmers what markets/products they should pursue, this would instead encourage and allow farmers to pursue their own innovations and pilot approaches. These innovations could be as diverse as crop transition for plant-based milks, transition to goat or sheep dairy, on-farm value-added processing, or agritourism, to name just a few. “It allows farmers to be on the forefront of trends,” as one attendee noted. A critical piece will be creating effective communication channels to document and disseminate effective (or unsuccessful) innovations, so that they can be replicated by other interested farmers. Stakeholders felt that a communication approach that blended in-person gatherings with social media and print/digital summary bulletins (like SARE grant publications) would be effective.
- **Virtual farm incubator:** Discussion of this strategy included potentially changing the language to “accelerator” in addition to or instead of “incubator” – to note that it could serve farms at a range of maturity levels. One farmer in her eighth year of farming noted that the early-mid-career stage (7-12 years into farming) is an important point in a farmer’s career – no longer an early-stage beginner, but at a point where some focused technical assistance, financial analysis, etc., can have meaningful impact. Several stakeholders mentioned the Groundswell Incubator in Ithaca and the CADE incubator as well-regarded models and potential partners. Stakeholders also emphasized that this strategy should not duplicate resources already offered by CCE and others, but rather “bundle” them into a one-stop shop for wraparound services and supports. To further differentiate from existing resources, the initiative could focus any new program offerings on one-to-one mentorship or technical assistance.

While these four strategies emerged as having the most traction and potential, the remaining four strategies also had some level of interest. We feel that these lower-ranked strategies can be folded into the favored strategies above. Expanded goat/sheep production and value-added dairy can be addressed by the on-farm innovation, incubator, or value-chain coordination strategies, while the wholesale markets and place-based marketing strategies are clearly related to value-chain coordination efforts.

RECOMMENDED STRATEGIES

Through the iterative research and stakeholder engagement process described on the preceding pages, the project team developed four strategy concepts that seize opportunities in Tioga County's agriculture economy and value chain. Two strategies are focused on supporting and enhancing farm viability and innovation, and two strategies are aimed at building out more robust downstream value chains and market channels. The overarching goals and strategies are:

Farm-based strategies

Goal: Support the viability of Tioga County farm businesses with an emphasis on next-generation farm innovation, pasture-based production, and business acumen.

Strategy 1: Encourage farm-based innovations that leverage the assets of Tioga County and the region.

Strategy 2: Create a virtual farm incubator-accelerator hybrid program.

Value chain strategies

Goal: Create stronger, more effective market channels for Tioga County agribusinesses through active coordination and strategic infrastructure investment.

Strategy 3: Pursue and provide active value chain coordination in order to develop and seize new market opportunities.

Strategy 4: Create shared-use aggregation infrastructure to remove distribution barriers for wholesale buyers.

While all four of these strategies respond to specific needs and opportunities in the county, and would thus have meaningful impact if successfully implemented individually, there are also important interconnections and synergies between them. These four strategies will therefore likely have even greater impact if implemented together. On the following pages, each of the recommended strategies are described in greater detail, including objectives, rationale, overview, potential partners, first steps for implementation, and summaries of relevant models.

STRATEGY 1

Encourage farm-based innovations that leverage the assets of Tioga County and the region.

Objectives

- Encourage and support farm-based innovation by farmers and farm businesses
- Document and disseminate successes and learnings from innovation tests
- Build a culture of forward-thinking and cutting-edge agriculture and business practices among Tioga County farmers

Rationale

KK&P's research pointed toward any number of potential new market opportunities for Tioga County farmers, including on-farm agritourism, goat and sheep production, artisanal cheese, and "agrivoltaics", or the co-location of agricultural production and solar panels. Rather than recommending the pursuit of just a handful of specific products or markets (which, in the recent example of hemp, did not turn out well), we acknowledge that not only is a diversified farm economy likely to be a healthier and more resilient one, farmers are also best suited to know what market opportunities are a good fit for their land, capabilities, and interests. To that end, this strategy aims to support a wide range of farmer-driven innovative approaches; in other words, to let the farmers lead, with a support system of resources and technical assistance that can help push the needle toward more innovative, or even just more profitable, markets and practices.

Overview

This strategy has two component phases: **pilot testing**, during which time farmers would develop and test new approaches on their farms, and **documentation and dissemination**, through which each pilot's learnings, successes, and failures would be documented and shared with farmers across the county.

The **pilot testing** phase would require funding, in the form of small grants, cost-sharing, or loans (though loans should play a small role, if any, since de-risking is an important aspect of this strategy) to help cover a farmer's direct costs related to the pilot; and technical assistance to help a farmer navigate the development and pursuit of the approach tested in the pilot. If Tioga County ED&P leads this initiative, they would have a role in securing and disseminating funding and helping identify and match farmers with relevant technical assistance.

After the pilot is completed, during the length of a growing season, for example, or a year, or even multiple years, depending on the approach being tested, the **documentation and dissemination** phase would summarize the pilot's learnings to be shared with other farmers, so that successful practices can diffuse across the county or region. Particular focus should be given to upfront costs and return on investment, so that the business case is clear for potential adopters. Discussion during stakeholder roundtables suggested that a range of communication approaches – e.g. one-pagers, webinars, and farm visits – would be most effective at getting the word out about pilot results.

We recommend that this program use a broad concept of "farm-based innovations," driven by the primary goal of enhancing profitability and viability for farms in the county. Farmer-initiated pilot tests could include approaches as

disparate as: renovation of farm property for a vacation rental (Airbnb, VRBO) income stream; intercropping of saffron with solar panels; transition to sheep or goat production; testing of new crops and new market channels, such as for plant-based milks; and so many more. Farmers would receive funding and assistance to test these approaches, and in return they agree to “open their books” to document the costs, profits, return on investment, and qualitative learnings from each pilot.

As the initiative progresses, county stakeholders and farmer-participants may begin to develop a deeper culture of agriculture innovation, and a more forward-looking vision for the county’s agriculture and food economy. The creation of a “fifty-year vision” for Tioga County agriculture is a potential medium- to long-term goal outcome for this initiative.

Potential Partners

- **Center of Excellence for Food and Agriculture at Cornell AgriTech** provides support for food and agriculture-based businesses across the state, and encourages entrepreneurship and innovation. The Center of Excellence (COE) is also a lead partner for Grow-NY, a food and agriculture business competition housed at Cornell University and funded by Empire State Development, focusing on three New York regions: Central NY, the Finger Lakes, and the Southern Tier (including Tioga County). The competition aims to identify and reward food and ag innovations relevant to the region with \$3 million awarded each year to seven winners. A partnership with COE and/or Grow-NY could create connections between Tioga County farmers, COE resources and experts, and Grow-NY innovators, helping to bring next-gen ag innovation to the county.
- **Cornell University:** As New York’s land grant university, Cornell is a hub of expertise, research, and innovation in food and agriculture. As Tioga County farmers identify potential innovations, Cornell is a potential source for technical assistance, innovation design, and pilot support.
- **Cornell Cooperative Extension (CCE):** As the farmer-and-field-facing arm of Cornell, CCE will be an important partner, not just in providing technical assistance for pilot-phase projects, but also in identifying potential farmer-participants, as well as helping to disseminate key learnings from completed pilots.

Opportunities for Innovation

A handful of nascent on-farm innovations exist that may represent next-generation opportunities for Tioga County farmers. While not all of these innovations appear to provide an immediate opportunity for most area farmers, they may provide worthwhile opportunities in the coming years. Next-generation innovations include transition from dairy to crops for plant-based dairy alternatives, on-farm solar development, and payments for agricultural carbon sequestration.

Recent headlines about the partial **transition of an upstate New York dairy farm to oats production**¹ has revealed a potential opportunity area for dairy farmers. This transition was supported by Halsa Foods, an oat-based yogurt brand, who recently initiated a pilot program to support the transition of dairy farmers to organic oats production. To date, this pilot program is limited in scope to one New York dairy farmer but pending expansion of this program, Tioga County dairy farmers may be well-positioned to capitalize on the emerging plant-based dairy alternative markets especially if offered coordinated support at the county level. **On-farm solar development** also offers the potential for farmers to increase revenue and improve farm viability, especially for farms that are located close to existing transmission or distribution lines. Solar development should be prioritized on unproductive or previously disturbed lands and prioritize concurrent agricultural uses such as sheep grazing, shade-tolerant crop production, and beekeeping. Researchers in Vermont are currently studying the potential to grow saffron², the world’s most expensive spice, amongst solar arrays in the Northeast. Supply chain development support and technical assistance may support Tioga County farmers to incorporate solar production into their enterprises. Lastly, **carbon farming**, the implementation of agricultural practices that increase soil carbon content, has gained attention in recent years as a way for farmers to expand revenues through the sale of agricultural carbon credits. While the agricultural carbon credit market is expanding rapidly, most farms in New York have limited access to the established marketplaces. As these marketplaces expand to include small to midsize farms, animal operations, and diversified farms, the sale of agricultural carbon credits may prove to benefit the bottom line for farm operations in Tioga County.

¹ <https://www.dairyreporter.com/Article/2020/02/13/Halsa-Foods-will-convert-dairy-farms-to-grow-organic-oats>

² <https://www.vtenergydashboard.org/stories/saffron-and-solar-farms-a-win-win-for-the-environment-and-agriculture-2>

- **The Center for Agricultural Development & Entrepreneurship (CADE):** CADE’s newly announced Farm & Food Business Accelerator (described in greater detail in the following strategy) will support a cohort of “ten of the most promising businesses in our region” – the Mohawk Valley/Central NY/Southern Tier region. With its focus on innovation, the new CADE program could be a potential partner for technical assistance, partnerships between Tioga County farmers and cohort businesses, and/or general collaboration and resource provision.

Implementation First Steps

- **Identify funding needs and potential funding sources:** In the near term, funding needs for this strategy can remain modest and scale as the program expands. Program partners should identify a range of subsidy amounts for pilot projects (e.g. up to \$3K, \$5K, or \$10K), as well as any additional administrative costs associated with the program. Federal (USDA), state (e.g. ESD), local, and private funding sources may all be relevant for this strategy, especially with the economic development and innovation objectives it pursues. SARE grants, especially the Research for Novel Approaches in Sustainable Agriculture and Farmer Grant programs, are particularly relevant potential funding sources.
- **Identify partners for support:** The potential partners identified above could all play valuable and unique roles in the implementation of this strategy. Early stage meetings with these partners to secure participation and define roles will be an important near-term step in creating a framework and design for the program.
- **Identify potential participants:** An email blast or other communication to a wide network of farmers in the county can notify them of the opportunity, and seek preliminary ideas or expressions of interest for what kinds of projects farmers might want to test.
- **Develop and launch a Year 1 pilot:** A Year 1 pilot program – e.g. timed to coincide with the 2022 growing season – can start small with a handful of projects, to test the overall program design and approach. Feedback from participating farmers throughout and after the pilot year can shape the program as it progresses and plans for continuation and/or expansion.

Models

Tioga County farmers experience a number of barriers with respect to on-farm innovation. Of these, financial risk, time, and limitations in technical know-how discourage testing of new approaches, be they new products, new markets, or new business models. There are a number of programs in the U.S. that provide the funding and technical assistance necessary to support farm-based innovation to improve farm viability into the future. One state-run example is a program from the Minnesota Department of Agriculture called the Minnesota New Markets Cost-Share Program, which provides funding to farms and food businesses to expand or access new wholesale and retail market channels for their products. The program, which is funded through the state’s Department of Agriculture – Agricultural Growth, Research, and Innovation (AGRI) program, provides 50% cost-share reimbursement of up to \$10,000 to farms and food businesses developing new e-commerce and wholesale markets.

Other relevant programs are offered by Practical Farmers of Iowa and AgLaunch.

Practical Farmers of Iowa (PFI) Cooperators' Program

The PFI Cooperators' Program empowers farmers statewide to "conduct on-farm research to better answer their most challenging farming questions." The program offers farmers support in designing experiments, and technical assistance to execute the experiment. Following experimentation, PFI offers support for publishing the research results. PFI reimburses the farmer for the costs of the research and provides compensation for the farmer's time. The research results are documented by PFI and disseminated through various outlets including research reports, PFI's quarterly magazine, industry magazines, workshops, and conferences.

This practical, farmer-led research promotes the ability of farmers to innovate with support to ensure lessons learned will be shared widely with others while removing the financial burden that can be a barrier to on-farm innovation. Since 1987, over 240 farmers have led over 1,400 research trials on their farms. In 2019 alone, 50 Cooperators conducted 72 research trials across the state of Iowa. PFI has a member base of over 3,300 members (2018 Annual Report). The PFI Cooperators program is funded predominantly by foundation, federal, and state grants with additional support coming from member contributions.

AgLaunch

AgLaunch is a nonprofit organization based in Tennessee that links agtech startups with a farmer network to design and test innovative technologies that address farmer-identified challenges. AgLaunch's programming begins with a three-month accelerator program where agtech startups prepare a pitch to row crop farmers and investors where they share their startup's value proposition. Farmers then choose the startups they feel best address their needs and the startups go on to conduct field trials at partner farms. Throughout the process, farms offer feedback on the technology to ensure alignment with farmer needs. In this way, farmers have a hand in the development of agtech startups that have the potential to benefit their farm operations. AgLaunch is funded by a broad group of public and private partners.

Innovative companies who participated in AgLaunch's programming include Nori, Cowlar, and the Autonomous Tractor Company. Nori is a carbon marketplace that helps farmers get paid for soil carbon sequestration. Cowlar is a smart monitoring collar that helps farmers monitor the health of their dairy cows. The Autonomous Tractor Company helps farmers cut equipment costs by using "electric drive technology" on existing equipment. Each of these startups are supporting farm businesses through a diversity of solutions.

STRATEGY 2

Create a virtual farm incubator-accelerator hybrid program.

Objectives

- Support and enhance the viability of early and mid-stage farm businesses in Tioga County through technical assistance, education, and mentorship
- Simplify access to existing resources by bundling supports and services and by subsidizing fee-for-service business assistance
- Build a community of collaboration and mutual support through cohort-based training and mentorship relationships

Rationale

A “virtual” farm incubator/accelerator that bundles supports and resources could attract and reinforce new and existing farmers without requiring hard assets or infrastructure. The virtual model can serve a broader audience and respond to diverse and evolving needs more nimbly and with more tailored and targeted services. By blending incubator functions (which tend to focus on education for early-stage farmers/businesses) and accelerator functions (which tend to target later-stage businesses with tailored one-on-one support and access to capital for growth), the incubator-accelerator hybrid program could support farms across a range of stages. As one farmer pointed out during a project roundtable, the early-mid-term stage of a farmer’s career (7-12 years after starting), is an important and transitional one, at which time targeted business analysis, mentorship, and technical assistance can be critical to charting a successful business plan for the future. By relying on partners and existing resources, especially in the near term, the incubator-accelerator could function primarily as a bundler, aggregator, and connector of resources to farmers.

Overview

The concept for a hybrid incubator-accelerator program is driven by an opportunity to more intentionally and actively connect early and mid-career farmers to existing resources and programs, and to complement these existing resources with targeted supports and technical assistance, especially in the form of mentorship and one-on-one business support. In the program’s early stages, it can focus on “bundling” and organizing existing resources and partners into a design for a one-year pilot program. To enhance existing resources (rather than duplicating them), the program should focus any new offerings on specific tailored services, intensive one-on-one consulting, access to capital and land, and a mentor-mentee model. Secured funding can subsidize the hiring of consultants and mentors, through a cost-share structure (e.g. in the HVADC model described below, participants pay no more than 25% of cost for services) or full 100% subsidy.

As the program develops, the incubator and accelerator functions may separate out into fully-fledged discrete program offerings. Throughout the development of the program, organizers should actively seek the input and feedback of participating farmers (or potential farmer participants) to shape and improve the program as it continues.

Potential Partners

- **Cornell Cooperative Extension (CCE):** As the leading provider and conduit for farmer resources in the county and in the region, CCE (specifically CCE Tioga and the CCE Dairy & Field Crops Team) are important potential anchor partners for a successful incubator/accelerator program, not just for the resources and assistance that can be a part of the program, but also for the extensive network of farmers that could include both participants and mentors.
- **New CCE Tioga Farm:** As this study was being finalized, CCE Tioga has moved toward executing the purchase of Cass Hill Farm in Candor, NY, with the intent to use it for farm business incubation and education. This new land asset will provide a major new resource for emerging and growing farmers in the county, and could offer opportunities for land-based incubator/accelerator functions tied to the virtual programming.
- **The Cornell Small Farms Program** offers an extensive array of both in-person and online trainings, workshops, and courses. ED&P and CCE Tioga could partner with the Small Farms Program to identify and bundle key courses or offerings to be included in the incubator-accelerator program. The Small Farms Program would also be a valuable resource for more targeted/tailored individual farm business support.
- **Dairy Grazing Apprenticeship (DGA)** is a non-profit organization that provides dairy management training in 14 states. DGA already has roots in Tioga County, and its mix of mentorship, education, and targeted business support would be well-suited for dairy-based participants in the incubator/accelerator program.
- **Finger Lakes Food Business Incubator Program (FoodBIP)** provides business support and resources to Finger Lakes food and beverage entrepreneurs. Its programming would be a relevant resource, particularly for value-added-oriented participants in the incubator/accelerator.
- **Tioga County Soil & Water Conservation District (SWCD)** provides technical assistance to farmers on the topics of conservation, resource management, and soils, all of which would likely be relevant to participants in the program.
- **Farmers:** Successful farmers across the county (or beyond) would be ideal mentors to earlier-career farmers in the county. The incubator-accelerator program could identify a group of willing farmer-mentors, and match them with program participants as mentees, based on farm type, business needs, and/or areas of interest.
- **Groundswell Incubator and CADE** (described in more detail in the models section below) both offer well-regarded incubator programming for new farmers. Groundswell, in particular, due to its proximity to Tioga County, is a high-potential partner for both programming and program design. Even though Groundswell is a land-based incubator, its training and resources would be relevant for a virtual model.

Implementation First steps

- **Inventory existing resources:** Since the program will leverage and build on existing resources for farmers, an important early step will be to develop an inventory of relevant resources in the region – courses, workshops, potential partner organizations, technical assistance, etc. – and to vet potential partnerships with the providers of these resources. These existing resources, and the willingness of their providers to collaborate, will be key building blocks for the program, especially in its early stages.

- **Identify potential mentors and TA providers:** As with the resource inventory, identifying potential mentors (primarily established farmers) and TA providers (on a range of topics) will be an important step toward designing the program. This network of willing mentors, advisors, and experts will allow for efficient and targeted matching with program participants when the program is launched.
- **Identify funding for subsidized TA:** Advisors and mentors should be appropriately compensated for their contributions to the program. In similar programs (e.g. HVADC and the Carrot Project, described in more detail below), program participants have access to these advisors through partial or full subsidy provided by the program (i.e. low cost or no cost to the participant). Both public and private funding could be relevant for the program’s needs, which should remain relatively modest in its early stages.
- **Design pilot year:** With key program building blocks identified – workshops and educational programs, partner organizations, mentor-farmers, TA providers, and advisors – program partners can set about designing a pilot year for the program. This pilot design should include:
 - Target number of participants in pilot cohort
 - Educational components and curriculum: for example, do all participants take a few of the same courses or workshops offered by Cornell Small Farms? Do guest educators from Groundswell Incubator come to Tioga County to teach a workshop? What is the overall trajectory of learning in the program, and what educational resources support it? How do the educational components differ for early stage farmers (“incubator” model) vs. later/mid-career farmers (“accelerator” model)?
 - Cohort building activities: The program may include a monthly (e.g.) gathering of its participants, to share experiences and build community.
 - Tailored advisement: How much tailored advisement or technical assistance, and in what format, will program participants receive? For example, perhaps participants will be allotted 10 hours of fully subsidized (no cost) TA/advisement, with an option to seek more with a partially subsidized cost-share model. What topic areas or advisement services will be available to program participants?
 - Program length: Will participation necessarily end after one year, or will participants have the option to continue for additional time?
 - Evaluation process: How will feedback and learnings from the pilot year be gathered and interpreted to guide refinements and enhancements in the future of the program?
- **Announce opportunity and seek participants for pilot year:** With the program design established, lead partners can announce the opportunity and invite potential participants to apply. The opportunity can be announced publicly through program partners’ networks, websites, etc. A simple application that summarizes key characteristics of the applicant’s current farm business and their interest in the program will help partners prioritize and identify participants for the program’s pilot year.

Models

The virtual farm incubator strategy draws on the success of the Hudson Valley AgriBusiness Development Corporation (HVADC) Farm & Food Business Incubator Without Walls (IWW) program and is inspired by other

incubator models such as the Mohawk Valley Farm and Food Business Incubator. Several other programs have relevant elements that could be included in a virtual farm incubator in Tioga County. The Groundswell Incubator in Ithaca and The Seed Farm in Lehigh County, Pennsylvania are exemplary land-based models for new farmer training and farm business incubation. The Vermont Farm and Forest Viability Program exemplifies how a primarily virtual program can expand its geographic reach and expertise by leveraging a network of organizational partners to provide business advising services to land-based businesses. The Carrot Project offers flexible business assistance services (online and in-person) and access to loan programs for producers in southern New England.

HVADC Farm & Food Business Incubator Without Walls⁴¹

The Incubator Without Walls (IWW) program of the Hudson Valley AgriBusiness Development Corporation (HVADC) is specifically targeted to early-stage and small agricultural businesses. The program offers a wide range of business development services including evaluation of needs, access to experts (accountants, marketing specialists, industry specialists, financiers), client networking, coaching and mentoring, grant writing, and referrals. Services are adapted to the client depending on the individual client's needs. The cost of services is need-based with the client typically paying up to 25% of the cost of services with the HVADC covering the remainder. The IWW program is funded in part by the Local Economies Project of the New World Foundation.

One farmer client summed up the value of the HVADC to her community including the IWW program, "HVADC not only lets you tailor the type of assistance/counseling you are looking for to meet your specific needs and allow you to do it at the pace of your life/business, but they make it affordable for the smaller businesses that might not otherwise be able to afford that caliber of service." Several other businesses credit the IWW program with helping to scale their agricultural businesses and improve financial viability.

The IWW program is complemented by another HVADC offering, the Farm and Food Funding Accelerator (FFFA). The FFFA, founded in 2016, is an intensive program that trains participants to scale their businesses and access capital. The program generally runs for six to eight months with an annual class size of 9-10 participants. The HVADC credits the FFFA program with creating or retaining 130+ jobs (including full time and part time positions) for the Hudson Valley businesses that participated in the program between 2016 and 2019. Participating businesses have secured over \$2.3 million in funding (grants, loans, private funds) over the same time period.

Mohawk Valley Farm & Food Business Incubator⁴²

Founded in 2016, the Mohawk Valley Farm and Food Business Incubator is offered in partnership between the Center for Agricultural Development and Entrepreneurship (CADE) and State University of New York (SUNY) Cobleskill. The New York State-certified business incubator provides no cost business training and value-added product development services to new and expanding food and agricultural businesses. Service offerings are based on needs of the individual client and include expert-provided educational programming and processing facilities for value-added producers without on-farm processing infrastructure. The program receives funding support from the Mohawk Valley Regional Economic Development Council.

Similarly to the HVADC Incubator Without Walls program, the Mohawk Valley Farm and Food Business Incubator is complemented by a funding accelerator program. CADE and SUNY Cobleskill recently announced the 2021 launch of the Farm and Food Business Accelerator which will provide a cohort of ten promising businesses with business development services. The program recently received over \$1 million in funding from the USDA and other sources.

⁴¹ <https://www.hvadc.org/farm-food-funding-accelerator>

⁴² <https://www.cobleskill.edu/community/cade.aspx>

STRATEGY 3

Pursue and provide active value chain coordination in order to develop and seize new market opportunities.

Objectives

- Increase market opportunities for farmers through formal and informal networking and resource connecting
- Develop value chain linkages that foster on the ground strategies and real time response to what's happening in the market
- Develop a hybrid non-profit/institutional and market-driven strategy that will fully address the opportunities for farmers in Tioga County
- Convene actors across the value chain to address short, medium, and long term market opportunities, align resources, and develop strategies for agricultural sector growth

Rationale

A central theme to KK&P's research, roundtables, and interviews was a disconnect, due to various logistical and market barriers, between the region's purchasers and Tioga County farmers, despite interest on both ends of the value chain. The potential alignments range from institutional buying opportunities such as increased budgets for farm to school through the state's 30% NYS Initiative and the booming home delivery and local food distribution sectors in search of new farmers to purchase goods from to fill the increased demand. Others are systemic, like addressing ongoing bottlenecks along the meat processing value chain to address consumer demand. Stakeholders are optimistic about the potential impact of more active coordination in the region's value chain: a person or group/organization whose focus would be to build relationships, troubleshoot bottlenecks and barriers, and function as a bridge builder, convenor and connector focused on increasing market opportunities for Tioga County farmers.

On Food Value Chains

"A new model of organization is beginning to pop up in the agribusiness sector that seeks to merge social mission objectives with core business operating principles. Known as food value chains, these business arrangements are distinguished by their commitment to transparency, collaborative business planning and exchange of market intelligence and business knowhow among chain partners, and their interest in developing business strategies and solutions that yield tangible benefits to each participant in the system. External factors that have contributed to the rise of food value chain enterprises in recent years include the growing segmentation of the consumer market, escalating demand for specialized, highly differentiated food products—even at higher price points—and the increasing appeal of food items that are produced in accordance with desired social or environmental welfare standards. The advent of low-cost communications technology has made possible new collaborative approaches to business management and oversight that operate according to a set of shared operational and ethical principles, founded on the idea of maintaining steady and open communication among all chain partners."

From **Food Value Chains: Creating Shared Value to Enhance Marketing Success**. USDA, May 2014.

Overview

This strategy has four component phases that may operate concurrently: **convene a Tioga County Value Chain Coordination (VCC) working group** to activate immediate opportunities and to develop a vision and plan for VCC work moving forward; **pilot project development** would consist of identifying near term needs and opportunities and directing resources and staff time to accomplish near-term wins; **value chain coordination learning and strategy development**, through which the role of a VC coordinator to meet Tioga County's specific needs would be evaluated and developed; and finally, **development of a 3-5 year plan and funding strategy** to guide VCC work in the county in the ensuing years.

Value chain coordination work directly supports producers, processors, distributors, buyers and consumers through resource prospecting and fostering relationships with food hubs, local governments, and organizations operating within the value chain. The Value Chain Coordinator is an agile, opportunity-responsive position making formal and informal connections, developing better lines of communication, and fostering collaboration by connecting needs and resources and often making real time, market driven deals happen. This position could weave together increased spending and interest in local food in charitable and institutional food systems, and consumer-driven or market-driven opportunities.

Funding opportunities that span multiple (three or more) years will have greater potential to realize returns on this type of investment. Market development does not happen in a county vacuum; considering regional strategies and what's happening at a regional level is important to promoting the growth of agriculture. For example, VCC strategy could focus on retail sales, given the resurgence of interest in local food and struggles with the national food system; and it could also pursue institutional buying possibilities presented by the NYS per-meal rebate for schools purchasing at least 30% NY-grown products. In terms of funding, this means collaborative funding initiatives between neighboring governments and jurisdictions may be an opportunity to consider. When considering funding opportunities, it's important to keep in mind that it takes time for VCC activities to impact traditional metrics such as increased sales or increased job creation. Measuring intermediate steps such as the number of participating individuals or the improved competitive position of businesses in the chain can be valuable to track short-term progress. It should also be determined at the outset what economic data will be tracked and how it will be captured, to measure the impact for investors and participating businesses in a meaningful way.

Potential Partners

- **Rural Health Network** works in several sectors to advance its mission to advance the health and well-being of rural people and communities, including an on-staff Value Chain/Community Food Coordinator, who brings a wealth of experience in VC coordination and regional food economies.

On the Impacts of Value Chain Coordination

"Do we fully understand the economic impact of value chain coordination? Typically, we might look at increased farm sales, number of new customers, new jobs created or maintained, etc., to begin evaluating their benefit to local economies. What about other indicators, such as acres of farmland preserved because farms found a way to stay competitive in the marketplace and increase revenue? Or, how many trucks were removed from traffic (saving time, reducing emissions, and degradation to transportation infrastructure) due to shared aggregation and distribution? What about the ton of food waste diverted to institutional buyers instead of ending up in landfills? Studying the impact of value chain coordination on our local food economy would deepen our understanding and strategies of how we plan and finance endeavors to effect positive change in our future food system."

From **Taking a More Holistic Approach to Food Hub Feasibility: Measuring the Impact of Value Chain Coordination**. Ag Innovations, July 2019.

- **Broome Tioga BOCES** oversees food service for 15 school districts and is actively implementing increased local food procurement strategies through a grant funded Local Food Coordinator position and new truck for farm pickups to advance their 30% NY Grown strategy and increase local purchasing power.
- **Delivered Fresh** purchases over \$2 million per year in local goods for their home delivery business, and is actively seeking additional aggregation points and farmers in Tioga County. Delivered Fresh represents a market-led approach to increase farm product sales.
- **Taste NY** highlights the quality, diversity, and economic impact of food and beverages grown, produced, or processed in New York State. Taste NY aims to create new opportunities for producers through events, retail locations, and partnerships. They work directly with Tioga County farmers to increase market share through their programs and are uniquely positioned to speak to consumer demand and interest in local food.
- **Food Bank of the Southern Tier** creates sales opportunities for Tioga County farmers each growing season, frequently coordinating distribution and aggregation of locally produced items. They offer unique opportunities for farmers to pre-plan to sell product that directly combats food insecurity in their communities.

Implementation First Steps

- **Convene a 12-month Tioga County VCC working group:** Create a small working committee to identify and act on immediate opportunities for VC coordination. The intent of this working group is to immediately begin informal, real time value chain coordination and collaboration across their respective organizations and businesses. Participation from both the private and public sectors will be critical to the group's success. The deepest impact from VC coordination efforts will come from alignment of non-profit and for-profit market opportunities and resources.
- **Pilot project development:** Evaluating real time potential projects will foster rapid advancements of present opportunities, and test theories of collaboration. We have developed three pilot project concepts for the group to consider below.
- **Value chain coordination learning and strategy development:** The working group's highest purpose is to ultimately develop a strategy for Value Chain Coordination in the region based on their expertise and shared experience in this collaborative effort. To support this goal, we recommend additional training and assessment of advancements in VC work as it continues to evolve in the Northeast and nationally through the Wallace Center Vibrant Economies⁴³ Community of Practice, as well as connecting directly with other VC coordination efforts in the NY region to share learnings and resources.
- **Development of a 3-5 year plan and funding strategy:** At the end of the 12-month process, the working group will have identified the following:
 - The key role and focus of a Value Chain Coordinator in Tioga County
 - Where the VC coordinator role lives, and the definition of the role (i.e., part time, full time, temporary, held by more than one person/organization)

⁴³ <https://wallacecenter.org/our-work/vibrant-economies/>

- o Mission and primary 3-5 goals for value chain coordination in Tioga County
- o Funding strategies to support execution

Pilot Project Concepts

- **Pilot Concept 1: Increase sales to institutional and charitable buyers.** This concept could include a range of supports to help farmers pursue wholesale sales opportunities with local institutions. Potential examples include:
 - o Assistance navigating the complex school food procurement processes
 - o Helping to design and broker a contract growing arrangement between farmers and the food bank
 - o Spearheading wholesale training efforts to help farmers better understand the economics of wholesale and how it can be a profitable sales channel even for small farms
- **Pilot Concept 2: Address the meat processing bottleneck.** The VC Coordinator would be well-positioned to explore and understand the dynamics, bottlenecks, and opportunities in the region’s meat sector – in particular, those that impact its farmers and its processors. Improved communication between farmers and processors, and active facilitation of scheduling and farmer-processor relationships, can help to optimize use of existing infrastructure. In addition to the benefits to farmers, addressing this challenge could increase the profitability and long-term sustainability of meat processing facilities.
- **Pilot Concept 3: Assist in the development of a shared use aggregation facility.** This concept is outlined in more detail as the next strategy (Strategy 4), which we see the VCC Working Group and VC Coordinator having roles in pursuing and implementing.

Models

Tioga County’s assets can be better leveraged to strengthen the economic position of local farmers and improve the resiliency of the county’s agriculture. One key piece to capitalizing on the existing assets and strengths of Tioga County’s food system involves connecting the dots between local producers and markets. A local value chain coordinator can take an active role in fostering partnerships and facilitating the sales between producers and markets. Value chain coordination activities can be housed in local nonprofits, universities, governments, and/or private businesses. Organizations demonstrating a range of value chain coordination activities across the country include La Montanita Co-op in New Mexico, Rocky Mountain Farmers Union, and Louisville Farm to Table. Here, we describe two successful models of value chain coordination in greater depth, one in Lehigh Valley, Pennsylvania and another throughout the state of Indiana.

Buy Fresh, Buy Local of the Greater Lehigh Valley (BFBLGLV)⁴⁴

Founded in 2008, BFBLGLV works to strengthen the local food economy of the Greater Lehigh Valley area (Pennsylvania) by connecting consumers, buyers, and local farmers. In executing the program’s mission, BFBLGLV facilitates the purchase of locally grown foods by regional wholesale buyers through consultations. The work facilitating local wholesale purchases is complemented by the organization conducting local food system research including determining wholesale needs and opportunities. The BFBLGLV website is also a community resource for

⁴⁴ <http://www.buylocalglv.org/>

a range of local food system actors, and hosts tools such as the Local Food Finder map and Local Foods Guide. The Local Food Finder is an interactive, searchable tool that covers three counties, 117 local food providers, and 163 kinds of local foods that can be purchased by consumers and wholesale buyers.

BFBLGLV is a program of the Nurture Nature Center, a national nonprofit with chapters in communities across the United States. BFBLGLV is funded by the County of Northampton Pennsylvania and USDA grants.

Indiana Farm Connect

Farm Connect is an ongoing public-private collaboration hosted by Purdue University that works to strengthen food systems in the state of Indiana by connecting local suppliers and purchasers. The project has provided funding for four value chain coordinators at partner organizations across the state. These coordinators are tasked with building networks between buyers, farmers, distributors, aggregators, processors, and local organizations in order to drive economic opportunities for farmers and other food system businesses. In addition to network building, the grant recipients provide technical assistance and support for fruit and vegetable growers to reach wholesale markets with a focus on food safety and business assistance.

The Farm Connect program was funded in 2018 by a Local Food Promotion Program grant from the USDA Agricultural Marketing Service. Project partners include Indiana University, Wallace Center at Winrock International, and Family Farmed. The results of the Farm Connect program are expected to be published in 2021.

STRATEGY 4

Create shared-use aggregation infrastructure to remove distribution barriers for wholesale buyers.

Objectives

- Increase sales and market opportunities for farmers through light aggregation
- Reduce trucking and infrastructure costs and barriers to regional buyers that are looking to source Tioga County grown products
- Bring new businesses and economic benefits to Tioga County through proposed expansion projects central to the aggregation concept

Rationale

Closely related to the VC coordination strategy is the concept of shared-use aggregation infrastructure, and overall increased resources for distribution, which emerged as another leading need and opportunity in the county. Efficient and effective aggregation of products is seen as a critical link in further developing the county value chain. Throughout our interviews with buyers in the region, trucking and distribution of Tioga grown products was the biggest barrier to increased purchasing. Two of the growing home delivery businesses in the region are both looking for aggregation space in Tioga, and one is using a parking lot on a local farmer's land to make exchanges and pick up products. At this time, they have not found suitable space in the county. This market driven recommendation has the potential to be an immediate opportunity to drive value and increase market opportunities for Tioga farmers.

Overview

This strategy has four component phases: **Convene interested partners** to create an action oriented task force to advance the project. Staying focused on a market based solution will be key for this group as it is central to the success of the project. **Beginning the search for a suitable location and releasing a Request for Proposals** would bring immediate attention to the project and reach potential landlords or host sites and attract the interest of farmers in the region. **Initiating the design phase** will bring the project to life, increase the ability to attract funding, and begin to develop a meaningful facility vision and functionality. **The development funding strategy** could be bolstered by an economic feasibility study and five-year operating plan to support the concept and ensure viability.

This facility initiative could be led by a private sector player (e.g. Delivered Fresh), and it was affirmed that private sector competitors would collaborate on such an initiative as a pre-competitive effort, with the shared goal of supporting the area's farms and farmers. Having a market driven approach ensures farmer buy-in and expanded economic opportunities up and down the supply chain. It will be critical that the facility truly meets the business and organizational needs of the participants, including: adequate loading docks, cold storage, dry storage, the ability to leave products for others to securely pick up, and timely access. Operational guidelines, operating agreements, sub-leases, and clear communication protocols will be key in creating a successful multi-tenant space. Considerations of facility and equipment ownership and maintenance, as well as tenant rights and responsibilities,

should be carefully considered. A phased approach to development that includes a first phase tenant anchoring and proof of concept could be a valuable step prior to any major construction project.

Potential Partners

- **Delivered Fresh** purchases over \$2 million per year in local goods for their home delivery business, and are actively looking for additional aggregation points and farmers in Tioga County. They have been actively seeking an aggregation facility in Tioga County and would be interested in being the anchor tenant in the venture.
- **Cornell Cooperative Extension of Tioga County** will be an important partner in identifying potential farmer users. Furthermore, with the new acquisition of the Cass Hill Farm, this new land asset could serve as a potential site for the aggregation hub.
- **Farm Swarming** emerged during the pandemic as a means to get local food to community members who would otherwise not have access to quality local goods. Growing and with an eye towards regional expansion, Farm Swarming is actively seeking ways to streamline aggregation of products to increase purchasing and keep distribution costs in line. They are interested in a Tioga County aggregation point and could be a good candidate for another key user.
- **Multiple Community Partners:** Direct outreach to individual farmers in need of aggregation points will be critical. These partners should be identified as part of an outreach strategy of the task force. Farm Bureau, Taste NY, Food Bank of the Southern Tier as well as private sector buyers like Regional Access should be considered.

Implementation First Steps

- **Convene interested partners in an Aggregation Task Force:** Since there is a clear need and a leading private sector party, the purpose of this group is to drive the process forward and to identify immediate opportunities for advancement.
- **Work with partners to identify facility needs and potential sites:** The Task Force should identify rough specs for the aggregation facility – square footage, characteristics, and general location – before seeking potential sites. Creating a formal RFP process – seeking responses from potential host property owners – will open the process up to unexpected partners, media attention, and increased buy-in. This is an important step in the process to identify the ideal conditions where a project like this could flourish and a valuable networking opportunity.
- **Initiate the design phase:** A high level design of the facility can be a valuable fundraising tool. In addition, this will be a time for potential partners/tenants to provide feedback and communicate facility needs and barriers. This should include development of draft operating agreements, floorplans, equipment needs and preliminary budget development.
- **Development of funding strategy:** The capital stack for this project will be multi layered and complex. Identifying county funds and grant opportunities will be key, while layering in commitments from private sector players and future tenants. The task force could consider an external feasibility study and development of a five-year operating plan to support and develop the most viable business model.

Models

The sharing of aggregation space can provide mutually beneficial economic outcomes for businesses and serve as a logistical solution for buyers to access Tioga County farmers. Shared-use facility agreements vary widely in their structure but generally serve to meet market incentives for the companies involved. Farms with loading docks and extra storage space can sometimes serve as small aggregation sites as demonstrated by Philly Foodworks in the Philadelphia area. In nearby Cortland, New York, the local food company Food and Ferments shares warehouse space with Main Street Farms for mutual benefit. Other shared-use partnerships include sharing of aggregation space and cold storage.

Good Natured Family Farms and Ball Food Stores

Good Natured Family Farms (GNFF) is an alliance of 100+ small and mid-sized farms and has a partnership with a regional grocery chain Ball Food Stores (BFS). GNFF sources from farms within a 200-mile radius of Kansas City and BFS owns over 25 grocery stores in the Kansas City area. Through this partnership, GNFF has an affordable place to aggregate its products and BFS is able to optimize the use of their warehouse facility. Individual farmers and groups of farmers deliver products to the warehouse or BFS picks up product from local farms.

The partnership between GNFF and BFS has endured for two decades as the partnership has been critical to the expansion of GNFF's business and has helped BFS secure quality local foods for their customers. BFS has accommodated the partnership by making changes in distribution, merchandising, and training while GNFF has increased their supplier base and diversity of food products to ensure mutual success.

Share Food Program and Philly Foodworks

The nonprofit Share Food Program in Philadelphia is the city's largest food bank and hunger relief organization and owns a large warehouse where they aggregate and store food. Philly Foodworks is an online market and farm share program that serves the Greater Philadelphia region. From 2014 to 2020, Philly Foodworks leased warehouse space from Share along with a handful of other food business tenants. The shared-use partnership offered Philly Foodworks and other tenants a below-market rate for a distribution and cold-storage facility while simultaneously helping Share optimize use of their warehouse space. Operating out of a shared facility, several businesses were able to share the costs of valuable amenities including loading docks, refrigeration, and bathrooms. A shared culture of collaboration was important to the success of the six-year partnership. The primary challenge to establishing a shared-use partnership is the capital needed up front to purchase the facility. In this case, the partnership ended as businesses grew and required additional space.

APPENDICES

Interviewees

Interviewees included the following:

- Mark Bordeau, Broome Tioga BOCES
- Carly & Dave Dougherty, food & ferments
- Lisa Engelbert, Farmer
- Ben Gerardi, Farm Swarming
- T Hanson, CCE*
- Ralph Kelsey, Tioga County IDA*
- Michelle Kline, Farmer
- Ike and Julie Lovelass, Owego Kitchen
- Mary Kate MacKenzie, CCE*
- KC Mandeville, Farmer
- Tony Marzolino, Marz Farm*
- Rob & Pam Moore, Farmers
- Barb Neal, CCE*
- David Nowacoski, Delivered Fresh
- Becca Rimmell, Bottomland Farm*
- Jenn Smith, Grow-NY
- Caroline Tolbert, Food Bank of the Southern Tier
- Amy Willis, Broome County Regional Farmers Market

* denotes member of the project Steering Committee

Roundtable Attendees

The following stakeholders participated in the two virtual roundtable discussions, March 24-25, 2021:

- March 24
 - Laura Biasillo, CCE Broome County
 - Lisa Bloodnick, Bloodnick Family Farm
 - Robin Hulzinga, Hulzinga Farm (departed prior to breakout due to tech)
 - David Nowacoski, Delivered Fresh
 - Lindsay Wickham, New York Farm Bureau
 - Amy Willis, Broome County Regional Farmers' Market
- March 25
 - Mark Bordeau, Broome Tioga BOCES
 - Alyssa DeVilliers, Golden Grove Farm
 - Tom Lewis, Rural Health Network
 - Lisa Rose, Business owner (opening grocery store in Candor)
 - Erin Summerlee, Rural Health Network
 - Caroline Tolbert, Food Bank of the Southern Tier
 - Adrienne Traub, Seven Valleys Health Coalition