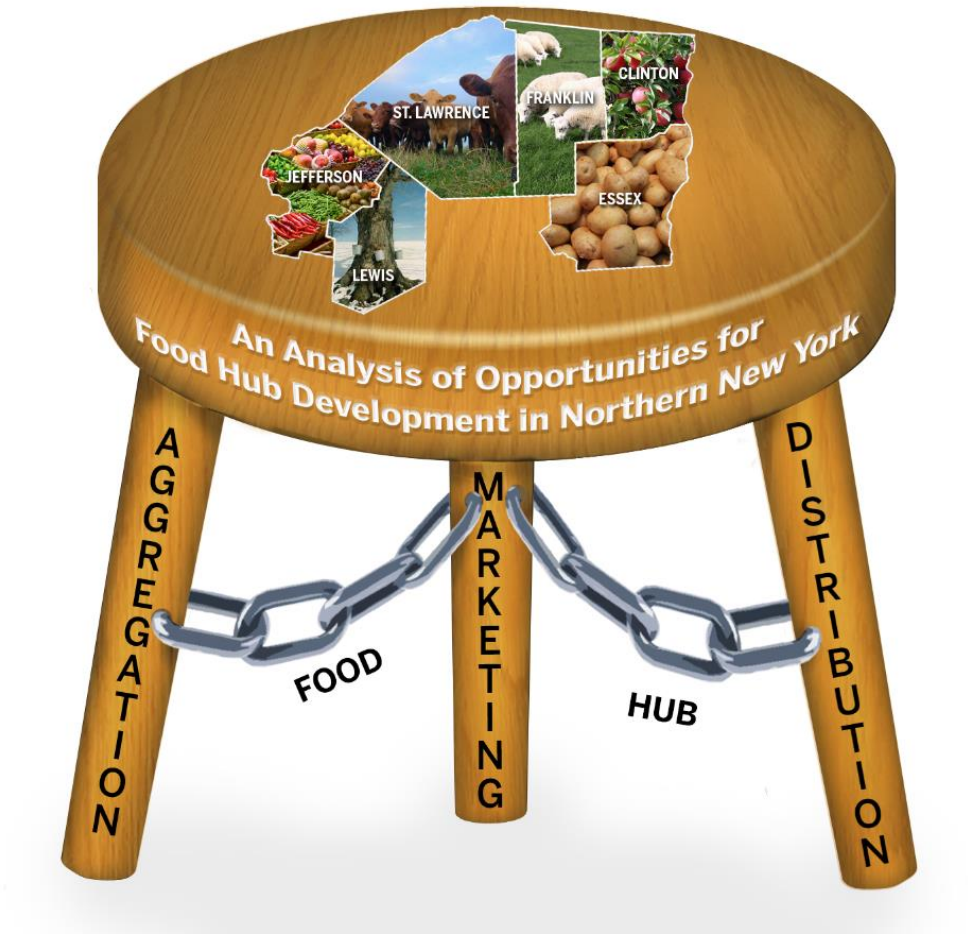

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In collaboration with the Cornell University Cooperative Extension educators in Clinton, Essex, Franklin, Lewis, Jefferson, and St. Lawrence Counties

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The Northern New York Local Foods Project is a collaborative effort between Cornell University Cooperative Extension Associations of Clinton, Essex, Franklin, Jefferson, Lewis, and St. Lawrence Counties and the Cornell University Charles H. Dyson School of Applied Economics and Management. Project members include: Patrick Ames, Brent Buchanan, Laurie Davis, Anita Deming, Amy Ivy, Kevin Jordan, Michele Ledoux, Steve Ledoux, Rick LeVitre, and Melissa Spence located within the six counties of Northern New York and Todd Schmit, Associate Professor, Cornell University Program on Agribusiness and Economic Development and Roberta Severson, Director of the Cooperative Enterprise Program located at Cornell University, Ithaca, NY.

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EXECUTIVE SUMMARY

The purpose of this report is to collect information and examine the opportunity for food hub development within the 6 counties located in Northern New York. Between June 2014 and January 2015 convenience surveys were completed by 125 farmers growing specialty crops and farmers selling dairy and protein products. Three-quarters of the producers had less than 60 acres and less than $100,000 in gross farm sales. For the food hub to be successful it will require enough product providers to supply adequate volume for the hub to be financially viable. Producers must understand that they will receive wholesale prices for the product and that production costs need to be minimized to retain profitability at the farm level. Food hubs may or may not operate year round. If operating seasonally, then sufficient revenue needs to be generated to cover operating expenses that are incurred year round. The definition of 'local' should remain flexible based on the distance to sourcing the product, and production methods preferred by the buyer.

A second survey was completed by 25 buyers of locally-sourced products, many being restaurant, catering company, specialty shop and convenience store owners. Buyers are interested in purchasing more NNY products. They prefer products available year round, product they purchase must be of consistent quality and quantity and delivered at the appropriate time. Buyers have some latitude in the purchasing decisions that they make but will not pay retail prices. These two surveys were used to gauge the interest and attitudes on the part of participants to utilize a food hub.

Aggregation

1. Production
    a. Producers work together to combine orders for inputs to receive quantity discounts resulting in lower production costs, higher margins, increased profitability
    b. Food hub operators should work with producers to develop a growing/commitment plan for that product to be sold through the hub.
2. Some producers limited by what they can produce. One means to expand business is to purchase from other producers
3. Create informal or formalized collaborations to build supply
4. Consider multi-farm CSA where they aggregate sufficient volume to meet needs of area buyers, share transport, etc.
5. Provide education opportunities for producers to expand production

Marketing

1. Most food hubs do not have formal marketing or media campaigns, relationship marketing is critical through direct contact with the buyers
2. Expand local sales to restaurants and grocery stores within the region
3. Constantly monitor markets and trends, recognize market changes and be flexible to respond to those changes
4. Become an expert in and service one market channel before branching into others. Make sure supply and demand are in balance. Subscribe to trade publications and join trade associations
5. Brand Northern New York locations
    a. Utilize location of Lake Ontario, Seaway Trail, Adirondacks, Lake Champlain
    b. Recognize and embrace that producers, farmers, buyers, and consumers tend to align themselves to one area over another

Distribution

1. Current infrastructure and present services should be evaluated before engaging in new business opportunities.
    a. Some producers and buyers surveyed indicated that they might have surplus refrigeration space they would be willing to provide for fee.
    b. Wholesalers/distributors should be contacted about requirements to purchase NNY products
    c. Determine availability and costs of trucks suitable for product distribution
    d. Determine availability and suitability of facility to serve as hub. Storage should have temperature and humidity controls that maintain quality of product as it is delivered. Storage should have desirable loading docks
2. Location
    a. Hubs should be located near a cluster of farmers from which they can procure product
    b. Hubs should be located 60 to 100 miles apart and within 10 to 20 minutes from a main highway

Organization

1. Forming a food hub enterprise
    a. Identify persons or businesses willing to expand their current business to incorporate services of aggregating, marketing, or distributing NNY products. Provide a mechanism to build awareness of these services.
2. Form a new enterprise.
    a. Develop feasibility analysis and business plan to test financial viability
    b. If a cooperative, identify the persons who will champion the business and serve as the organizing leadership, develop legal documents, secure members, conduct an equity drive, hire staff
    c. If a non-profit, make sure board of directors and management have expertise in food sector
3. Address barriers of producers as a means to secure needed product
4. Address concerns of buyers as a means to ensure customer satisfaction
5. Derive pricing mechanism satisfactory to producers and sellers that ensures sufficient margin for the food hub

INTRODUCTION

Consumers have a renewed interest in where their food is sourced, how it is grown, and the impact that the food system from farm to plate has on the environment and rural communities. An Analysis of Opportunities for Food Hub Development in Northern New York examines prospects for farmers to strengthen farm business viability by providing locally grown products to food buyers. Sales of locally sourced products occur through two marketing channels, one being direct-to-consumer (DTC) sales (roadside stands, U-pick, farmers' markets, on-farm stores, and community-supported agriculture arrangements or CSAs). Intermediated marketing channels are the other means by which buyers access locally produced foods. Market channels can be classified as intermediate when food passes through one or more intermediate buyers before reaching the consumer. Examples include regional distributors, grocery stores, restaurants, and institutions (schools, food banks, hospitals, etc.).

Food hubs are intermediated market channels through which small and mid-sized farmers can sell and buyers can purchase locally produced products. According to the USDA, "A regional food hub is a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand" (Barham 2012).

According to a 2015 Report to Congress, in 2012, 7.8 percent of U.S. farms conducted either DTC sales or intermediated sales of which 70 percent was DTC sales only (Low 2015). Small farms, those with gross cash sales less than $75,000 accounted for 85 percent of total local food sales, "The number of farms with DTC sales increased by 17 percent and sales increased by 32 percent between 2002 and2007; however, between 2007 and 2012 the number of farms with DTC sales increased 5.5 percent, with no change in DTC sales. That DTC sales did not increase may be due to plateauing consumer interest or to growth in non-direct sales of local food (i.e., local food sold through intermediated marketing channels like grocery stores or institutions), the value of which is not measured by the census of agriculture." Estimated local food sales were $6.1 billion in 2012, up from an estimated $4.8 billion in 2008 (Low 2015, 2011). In Northern NY, 770 farms engaged in DTC sales sold to $6.213 million of locally grown products in 2012 compared to 619 farms with $4.164 million in sales in 2007 (Northern NY Agricultural Census Data 2002-2012). This was an increase of 151 farms or 24 percent and an increase of $2.1 million or 49 percent. Average DTC sales was $8,068 per farm in 2012 and $6,727 per farm in 2007 (Northern NY Agriculture Development Program, NNY Agricultural Census Data 2002-2012). The increase regionally is similar to national trends. Unknown is whether there will be an overall decline in DTC sales in NNY.

Several studies have been conducted throughout the U. S. regarding food hub businesses. Results from these studies provide useful insights into the development of food hubs in NNY. Table. 1 summaries findings from a study released by the Michigan State University Center for Regional Food Systems at Winrock International. This table is helpful in examining market channels through which NNY products might be sold. Of eighty-two food hubs surveyed 58 percent of the hubs received an average of 33 percent of gross sales from restaurants, caterers or bakeries. Other key customers included the hub's own store front/retail outlet, online store, CSAs, large supermarkets, and farmers markets.

Table 1. Percent of food hubs by market channel and percent gross sales

Customer	Percent food hubs (N=82)	Average percent of total gross sales	Opportunities				
			Many	Some	Few	None	Unsure
Restaurants, caterers, or bakeries	58	33	52	35	10	3	N/A
Corner stores/small grocery stores	39	14	25	45	19	7	4
K-12 school food service	35	11	32	22	28	6	12
CSA	29	49	28	26	12	25	9
Colleges or universities	27	9	28	36	22	8	6
Large supermarkets or super centers	27	29	27	29	20	20	4
Distributors	24	18	27	33	17	18	5
Buying clubs	24	7	31	43	14	12	N/A
Food cooperatives	24	27					
Hospitals	22	7	28	33	19	9	11
Hub's own retail outlet	20	58	28	23	12	22	15
Farmers markets	18	32	16	30	13	37	4
Online store	16	51	39	27	7	12	15
Food processors	15	15	21	33	22	9	15
Pre-K food service	6	7	19	25	26	11	19
Mobile retail units	6	14	16	21	21	21	21

Source: Fischer, M. et.al. Findings of the National Food Hub Survey. 2013.

Food hub operators were asked to identity the channels where they expected the most growth in the near future. Ninety percent of those surveyed believed there were some to many opportunities for additional growth in the restaurant, caterer, and bakery category and 70 percent believe there are some to many opportunities to sell product to corner stores or small grocery stores (Fischer). Similar business types and opportunities exist in NNY.

The USDA examined DTC sales utilizing data from the 2012 U.S. Agriculture Census. The data shows mixed findings within county boundaries of NNY. Total direct to consumer sales was highest in St. Lawrence County with sales between $1 million and $2.5 million with smaller volume sales between $123,000 and $1 million in the remainder of the counties (Figure 1.) Statewide, the highest sales were found in metropolitan counties and those counties in the Hudson Valley nearest to NYC (Low 2015).

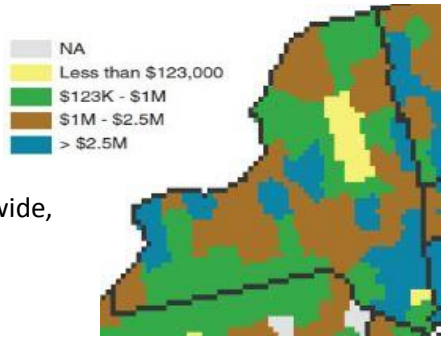


Figure 1. Direct to consumer sales by county, 2012
Source: USDA Economic Research Service, data from Census of Agriculture, 2012

The USDA explored the change in DTC sales between 2007 and 2012 (Figure 2). Again results between counties were mixed. While total sales in St. Lawrence County was highest in the region (Figure 1), its DTC sales between 2007 and 2012 remained constant. Sales in Jefferson County increased as it is the county with the highest population within the region. Sales also increased in Franklin County possibly because more people seek out locally-sourced products as a result of the local foods movement. The decrease in Clinton and Essex Counties might be explained that the local food movement has peaked due to successful efforts of local foods promotion programs.

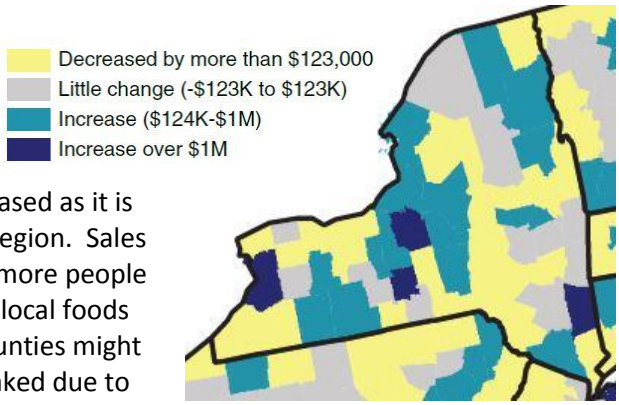


Figure 2. Change in direct-to-consumer sales, 2007-12 using constant dollars
Source: USDA Economic Research Service, data from Census of Agriculture 2012 and 2007

The USDA examined the number of farms selling directly to retail outlets and restaurants (Figure 3). Results across counties were more similar as all counties had a minimum of 11 to 50 farms selling to retail outlets. St. Lawrence County had the most farms selling to retail. The county also has the highest number of farms within the region. The region was fairly similar to the remainder of NYS.

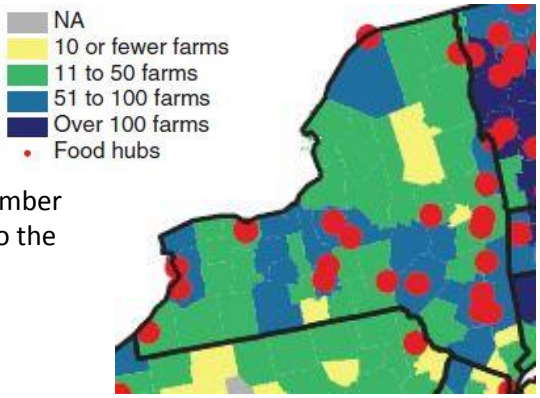


Figure 3. Farms with direct sales to retail or restaurants, 2012, and food hubs, 2014
Source: USDA Economic Research Service, data from Census of Agriculture 2012;
USDA Agriculture Marketing Service, 2014.

The Analysis of Opportunities for Food Hub Development in Northern New York examines the willingness and opportunities of producers to sell and buyers to procure NNY sourced product through a food hub. Barriers have been identified that will need to be addressed and the report suggests strategies to overcome these hurdles.

METHODS

The NNY Local Foods Project identified the populations of persons to participate and developed three convenience surveys. Convenience surveys use subjects willing to participate in the survey. Thus, the information shared in the following report comes with the following cautions – the total population of producers and buyers were not surveyed; those completing the survey are not a random population and there are no guarantees implied as to whether respondent's surveys reflect the characteristics of the general population.

Many groups have engaged in surveys focused on food hub development. These surveys were reviewed and evaluated to identify questions relevant to the project. A survey instrument was designed by staff

of the Cornell University Cooperative Enterprise Program to create consistency across the analysis. The survey was reviewed by the project planning committee to ensure that the resulting information would meet the goals of the project. Surveys were designed to be completed individually by producers, buyers, and consumers. However, due to the length and complexity of the analyses, Extension educators completed one-on-one interviews with most of the producers, buyers and consumers to ensure that the surveys were completed. Once the surveys were completed the data was coded and entered into a Microsoft Excel spreadsheet. The data was then analyzed by faculty, staff and a MPS graduate student.

The NNY Producers Survey (Appendix H.) included the size and scale of farm operations, experience of the operator, products produced, current market channels served and attitudes regarding desire and barriers to scale up production along with interest in selling into wholesale market channels via a food hub. Surveys were completed by 124 producers, most by farm operators located in Clinton, Essex, and Lewis Counties with fewer surveys collected from St. Lawrence and Jefferson Counties from July to December 2014. They reported on sales of the 2013 cropping season. The NNY Buyers Survey (Appendix I) focused on demand and current efforts to acquire 'local' food products, local foods marketing initiatives, and obstacles to local food procurement. Twenty-seven persons completed the surveys. They represented a diverse set of buyers, i.e. grocery stores, restaurants, processors, schools. A Likert scale (e.g. continuum of not interested to very interested) was utilized to measure attitudes and interest of both producers and buyers. Over 250 consumers completed a survey (Appendix J) focused on consumer attitudes of purchasing local foods. Approximately 80 percent of respondents were women, 40 percent were over 60 years old, with over 40 percent of the respondents completing the survey in Clinton County.

DESCRIPTION OF AREA

The study area focuses on Northern New York, more specifically Clinton, Essex, Franklin, Jefferson, Lewis and St. Lawrence Counties. The area is bounded by Lake Ontario on the west, the St. Lawrence River Valley and the Canadian provinces of Ontario and Quebec to the north, and Lake Champlain to the east. The region is bounded by the Adirondack Mountains to the south with portions of St. Lawrence, Franklin, Clinton and Essex Counties within the Adirondack Park. Interstate 81 and Interstate 87 are limited access highways located on the west and east sides of the study area, respectively. Each of these interstates connect with Interstate 90 or the NYS Thruway, a major east-west traffic corridor. Other major highways include NYS Route 11, which connects all of the counties in the focus area accept Essex County; NYS Route 12 through Jefferson and Lewis Counties connecting the area to Interstate 90 in Utica; Route 30 running north and south through the Adirondacks, connecting to Interstate-90 in Amsterdam, NYS Route 3 running east-west connecting Watertown to Plattsburg. The area is less than 400 miles from major cities including Syracuse, Utica, Albany, and New York City in New York State, Boston, MA, and the cities of Toronto and Ottawa in the province of Ontario and the cities of Montreal and Quebec City, in the province of Quebec in Canada.

Population estimates within the 6-county area range from 27,220 residents in Lewis County to 119,103 persons in Jefferson County. The number of households range from 15,919 in Essex County to 45,011 in Jefferson County. Population and number of households in Jefferson County is significantly higher than the remaining counties, attributed to the presence of Fort Drum, a U. S. Army military installation. Median household income ranges from $43,647 in St. Lawrence County to $50,282 in Clinton County (U. S. Census, QuickFacts).

Agriculture plays an important business role in the area with over 4,000 farms with sales of $753 million in 2012 (U.S. Agriculture Census 2012). Much of the area's 1.176 million acres in farmland supports the region's dairy industry. Milk from the region is processed at dairy plants located within the area and in Vermont and Massachusetts. Specialty products are increasingly important in the area. The area has 26 percent of the maple producers in New York State and 30 percent of all NYS maple sales. Wineries have been established in the area as well. Residents and visitors to the area have increased awareness of local foods through the increased number of DTC venues and programs such as Adirondack Harvest.

WHAT IS LOCAL?

There is no legal or common consensus regarding the definition of local foods and opinions vary widely. Local implies a place that may or may not be described through distance. For example, some consumers identify themselves as "locovores" and focus food purchases on products within a 100-mile radius. Consumers and buyers of NNY products were asked to define "local." Twenty-seven percent of consumers identified product sourced within their respective county as local and almost 60 percent defined local products as produced within NNY. Over half of the buyers defined local as within NNY with another third indicating that New York State, New England and the Canadian provinces of Ontario and Southern Quebec could be sources and markets for local products as well.

Farmers were not asked to define local, rather they were asked to describe where they sold their products. Three-quarters of the farmers sold over 50% of their products within the six NNY counties with 40 percent selling 100 percent of their products within the NNY region. Ten percent of the farmers reported selling 75 to 100 percent of products to buyers located greater than 350 miles from their farms. Products sold furthest away included berries, honey, lamb, and rabbits. The 2008 Farm Bill suggests that 'local' is less than 400 miles between the producer and the buyer while the Food Safety Modernization Act suggests that 'local' is 275 miles between farmer and customer. The concept of "local" seems to evolve as the definition flexes to the ability to source product within a short distance compared to further away. The definition of local foods needs to be flexible, based on distance, the source of the product itself, production methods and the system necessary to get it to the consumer (Martinez, Matson).

FARMERS AND PRODUCERS

The focus of this report is to examine the opportunity for food hub development and gauge the interest of farmers in selling and food buyers in purchasing products from food hubs located in Northern New York. Particular attention is paid to farmers growing and selling specialty crops such as fruits and vegetables, maple and honey and to farmers selling beef, lamb, veal, poultry, eggs, and rabbits into retail markets. The report includes responses and opinions from 124 farmers and producers in the 6 counties of NNY and one producer from Oneida County who sells produce at a farm market in NNY. Table 2 shows that the survey was not exhaustive and more farmers are engaged in selling directly to retail and CSA activities than are reported in the survey.

Table 2. Farmers engaged in DTC activities by county

County	Clinton	Essex	Franklin	Jefferson	Lewis	St. Lawrence
Number of survey farms	25	36	12	14	23	14
Farms marketing directly to retail*	42	27	37	38	27	75
Produce & sold value-added*	46	29	52	56	25	97
Community Supported Agriculture*	9	11	7	15	6	18
On-farm packing facilities*	17	11	13	10	15	24
Total number of farms in county	603	261	668	876	634	1,303

*Reported to U.S. Census of Agriculture 2012, Table 1. County Summary Highlights and Table 43. Selected Practices

Food hubs are viewed as a means for small and mid-sized farms to access intermediated market channels. Charts 1 and 2 show that the majority of farm operations in this report would be considered small operations. The number of farms by acres is fairly consistent across all cohorts. Approximately half of the farms had no more than 40 acres in production and less than $25,000 in sales. Less than 15 percent of the farmers managed over 250 acres and had more than $250,000 in sales.

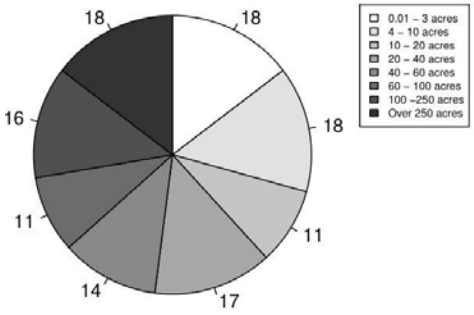


Chart 1. Farm survey count by size

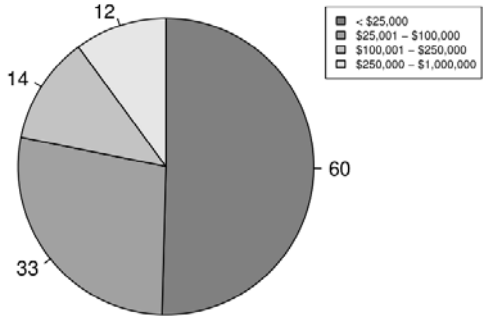
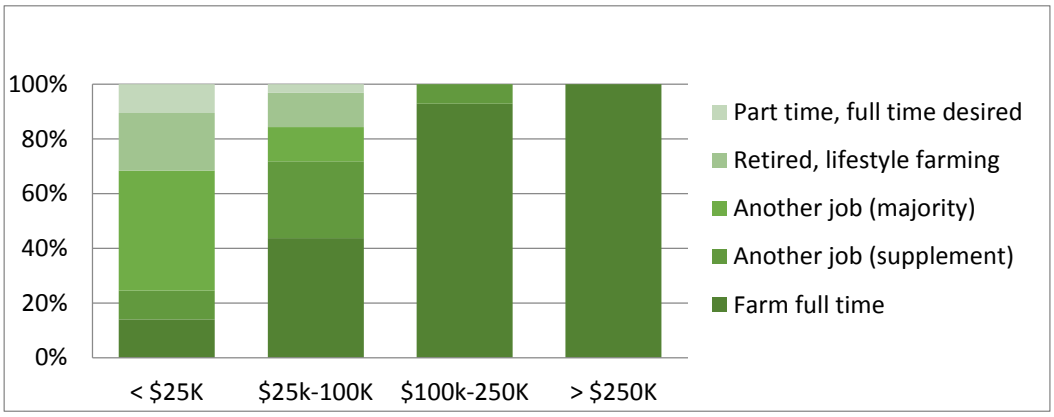


Chart 2. Farm survey count by sales

People engage in farming activities for numerous reasons. For some persons operating a farm is a full time occupation for others part-time farming supplements retirement income, or contributes to their lifestyle or is done with a goal to become a full time farmer.

Chart 3. Full and part time farmers by amount of sales



Overall, producers completing the survey tended to be small and not farming full time. Chart 3 shows that forty percent of all the farmers responding to the survey farmed full time and one-quarter of the farmers had off-farm income that contributed significantly to the household income. Slightly over 10 percent said that they had an off-farm job to supplement the farm income and another 10 percent indicated that they were retired or enjoyed the lifestyle provided by farming. A few farmers with less than $25,000 in sales reported farming full time. Possibly these farms had a spouse or partner or supplemental household income to cover daily living costs. Most part time farmers desired to become full time farmers. Larger farms had more full time operators. All farms with sales over $250,000 were operated by full time farmers and over 90 percent of full time operators managed farms with sales between $100,000 and $250,000.

Chart 4. Years in farming by sales

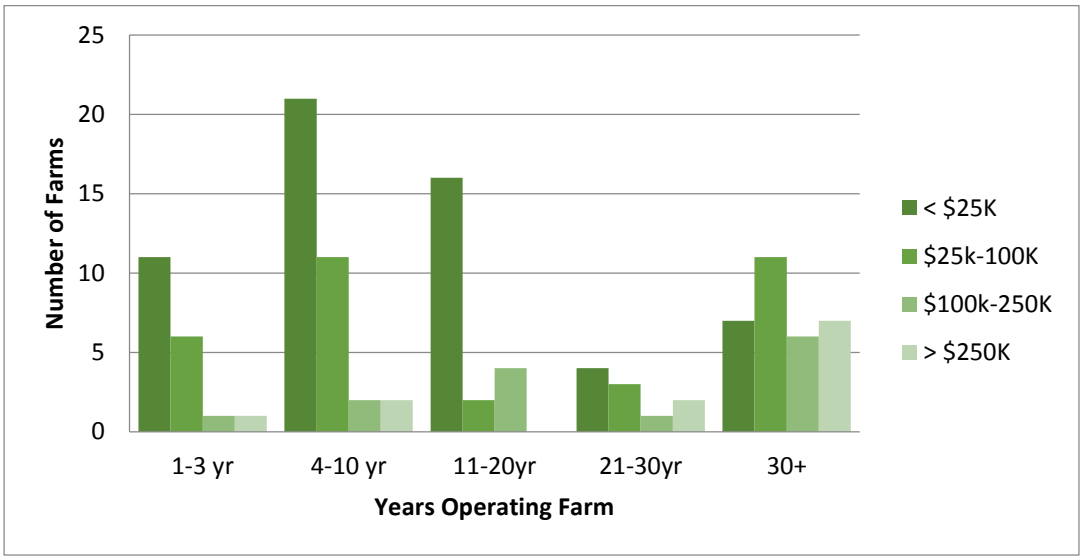


Chart 4 shows the distribution in years of farming by sales. One-third of the farmers reporting have farmed between 4 and 10 years. Slightly over 25 percent of the farmers have been farming for 30 or more years with half of those grossing less than $100,000 in sales. Each category, except for those farming 11 to 20 years had at least one farm with more than $250,000 in sales. Unknown is how many of these businesses can attract a next generation owner. Half of the farmers in the survey have gross sales less than $25,000 regardless of the years engaged in farming. As over half of the farmers are part time operators, with off-farm jobs, lifestyle preferences or are retirees, the ability to scale up production could limit volume of product sold through a food hub. Producers not participating in the survey need to be contacted to determine their interest in producing product to sell through a food hub.

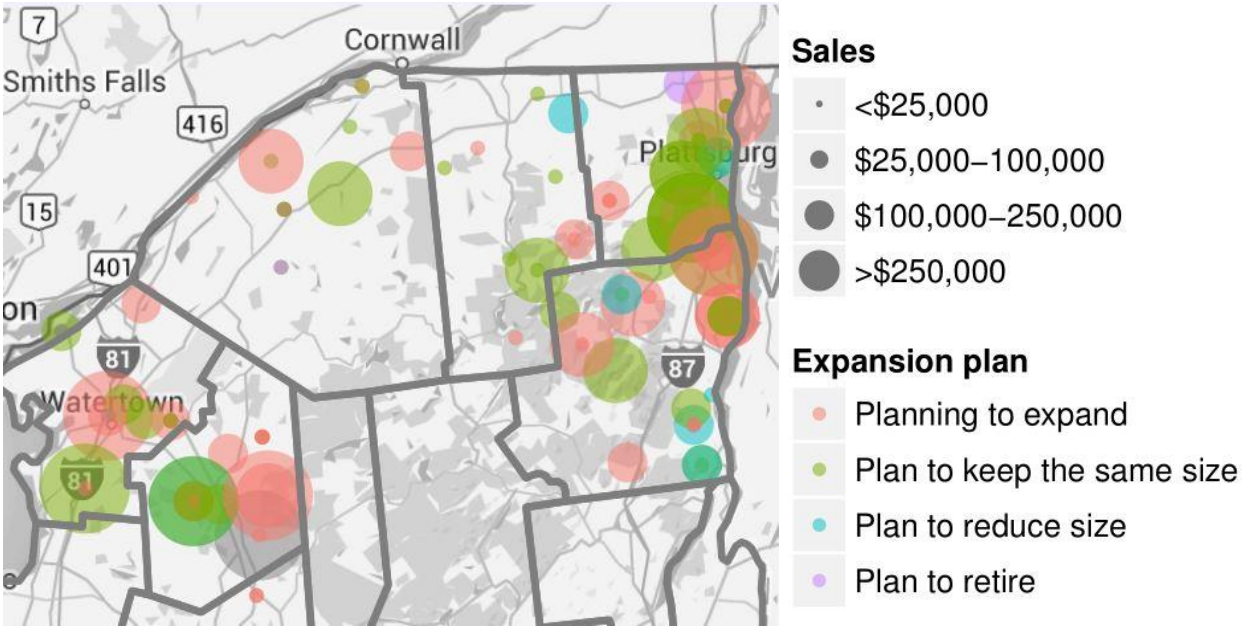


Figure 4. Expectation to expand operations

Food hubs provide a mechanism for farmers to expand production to access wholesale market channels. Businesses like food hubs need continuous growth to remain competitive in the marketplace. Having access to adequate supplies of products will be important to the success of the food hub. Farmers were asked about their plans for future expansion of their operations. Figure 4 shows that approximately one-quarter of farmers indicated that they would not increase production. Reasons stated for not increasing production included 1) lifestyle – plan to retire, time, energy, physical limitations, small by choice, 2) labor – not interested in hiring labor, one full-time person, 3) land – land base, no adjacent land, limited land. The remainder indicated that they might or would increase production, but barriers needed to be overcome to. Barriers mentioned were 1) storage could be a problem, 2) refine the operation, perfect the practices, 3) dependable labor during critical periods, 4) limited time, 5) preference to farm versus time spent marketing away from home, 6) access to USDA meat processing facilities.

Less farms were surveyed in St. Lawrence and Franklin Counties. Table 2 indicates there are significant number of farmers engaged in DTC sales. Figure 3 indicates that there are between 11 and 50 farms in Franklin County and 51 to 100 farms in St. Lawrence County engaged in DTC sales. Not known is how many of these farms would scale up to sell through a food hub or shift production from DTC outlets to wholesale marketing channels.

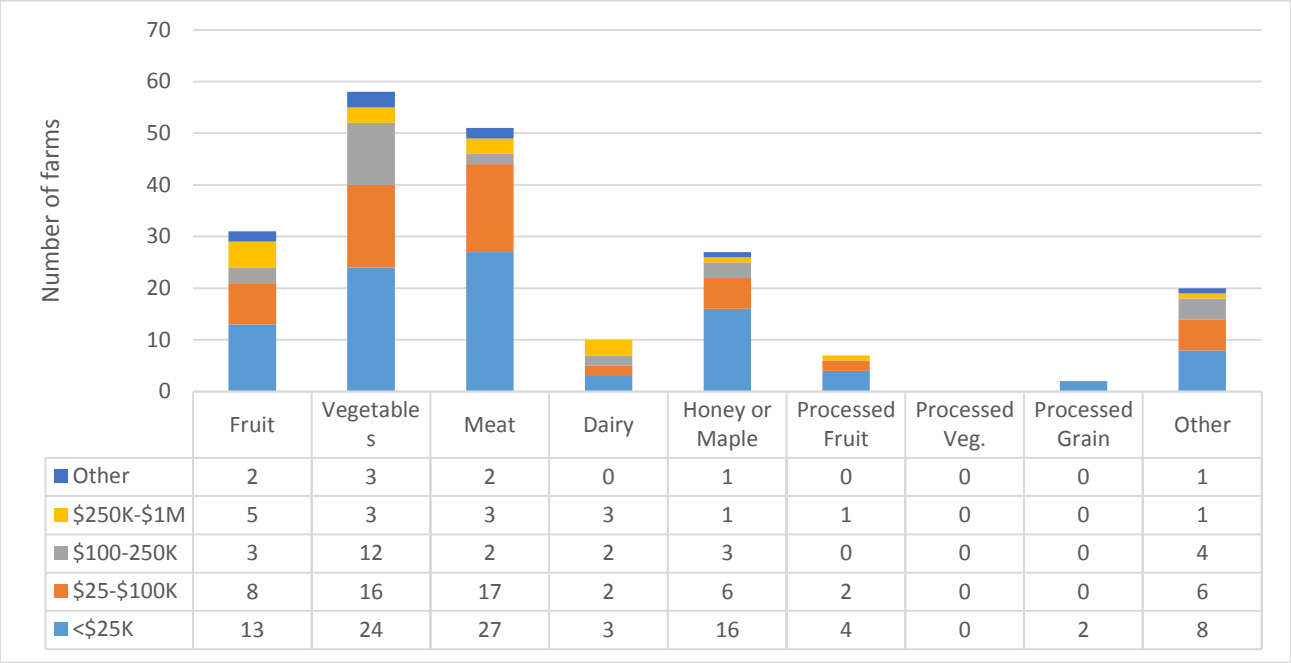
As one-quarter of producers surveyed will not scale up productions and others identified barriers that need to be overcome to scale up production, there is genuine concern as to whether or not enough volume of product could be aggregated to support a food hub. Several other models for food hub development need to be considered. Informal collaborations could emerge where 2 or more farmers could aggregate sufficient product volume to meet the needs of one or more buyers.

Products grown and sold

Specialty Crops

Chart 5 shows that the majority of farms of the study reported growing fruits or vegetables for DTC sales. Approximately one-quarter (31 respondents) and one-half (58 respondents) indicated that they sold fruit and vegetables, respectively. The majority of farms reporting sales of fruits and vegetables had less than $25,000 in gross farm sales. The 2012 U. S. of Agriculture indicates that there are 171 farms harvesting fruit and 337 farms harvesting vegetables in NNY. Twenty-seven farms in the survey reported selling maple or honey products. A few producers further processed these products making maple cream, sugar cakes, maple candy, maple hard candy, maple BBQ sauce and honey cream. U. S. Census of Agriculture data indicates that 107 people have hives in NNY and 382 farms are engaged in maple production. (Appendix A.) Varieties of cold hardy grapes have been developed by Cornell University. Grapes are grown in each county in NYS. One farmer reported producing 2,500 gallons of wine and several reported vineyards planted. The diversity of shelf-stable products would allow the region to remain in the market place year round.

Chart 5. Crops and produce grown



	Fruit	Vegetables	Meat	Dairy	Honey or Maple	Processed Fruit	Processed Veg.	Processed Grain	Other
Other	2	3	2	0	1	0	0	0	1
$250K-$1M	5	3	3	3	1	1	0	0	1
$100-250K	3	12	2	2	3	0	0	0	4
$25-$100K	8	16	17	2	6	2	0	0	6
<$25K	13	24	27	3	16	4	0	2	8

Protein Products

Chart 5 shows that a significant number of producers sell meat products. Approximately 40 percent of farms in the study reported growing a diversity of products including beef, hogs, lamb, meat goats, broilers, and eggs, second only to those farms reported to selling vegetables. Soils and climate conditions are conducive to hay production and pastures can be used to grow pastured-poultry and conventional, organic or grass-fed beef, etc. The 2012 U. S. Census of Agriculture reports that over 900 farms have beef cattle and 700 farms raise laying hens with over 100 farms raising broilers. (Appendix B.) Survey farmers reported selling as few as two head to as many as 60 head of beef cattle each year. Sheep farmers reported selling between 2 to 175 lambs. Poultry producers in the survey collectively

sold over 7,500 dozen eggs and over 6,000 broilers. Some farmers further-processed sub-primal cuts of meat into sausage and smoked meat products. Access to USDA slaughter facilities is challenging. Meats are a high-value product. Further exploration is necessary to see if priced correctly, including allowances for transportation costs, protein products could be marketed in large metropolitan areas outside of NNY.

Other Products

Some produce may not meet industry standards or consumer acceptance in any given growing season. Farmers selling direct to consumers may discount the price of these under-grades or 'seconds'. Farmers completing the survey manage the under-grades well. Eighty-five percent indicated that they left none to less than 10 percent seconds in the field. Less than 10 percent of the farmers left more than 30 percent of under-grades in the field. Forty percent of survey farmers indicated that they successfully marketed more than 30 percent of the under-grades. At present there does not seem a need to develop a mechanism to sell or develop processing for under-grades.

Several farmers reported a diversity of other products created from raw ingredients harvested from the farm. For example, one person was manufacturing soap utilizing goat's milk. Another was making caramel candy from goat's milk. Another was producing food products through a 20-C license. Some farmers reported making cheese curd, yogurt, ice cream, and candy.

On-farm Practices

Farmers use a variety of production practices to grow their product. Chart 6 shows that eight of the farmers surveyed are certified organic producers. Half of the farmers are considered conventional farmers utilizing commercial fertilizer, crop protectants applied at label recommendations, and antibiotics supervised by a licensed veterinarian. Approximately one-third of farmers surveyed labeled practices such as organic but not certified, natural, grass fed, grown naturally, chemical free, non-GMO, and Animal Welfare Approved. The 2012 U.S. Census of Agriculture shows that 115 farms across the NNY region are certified organic with another 18 certified organic but exempt from the National Organic Practices standards (Appendix C.). Consumers are becoming increasingly concerned about how the food they eat is grown and processed. These concerns lead to preferences and some willingness to pay for products with specific attributes. Diversity of current production practices of NNY producers can meet consumer inclinations.

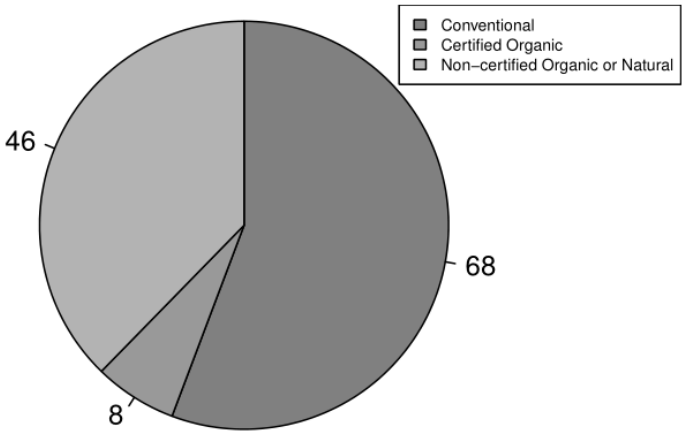


Chart 6. Types of production practices

Value-added Processing

Value-added processing refers to any process or activity to increase the value of the product or consumer appeal. Examples of value-added processing include sorting, grading, packing, washing, and packaging. Value-added processing can include a process that changes a product into another form, i.e. strawberries into jam or maple syrup into maple candy.

Chart 7. Value-added processing by farm gross sales

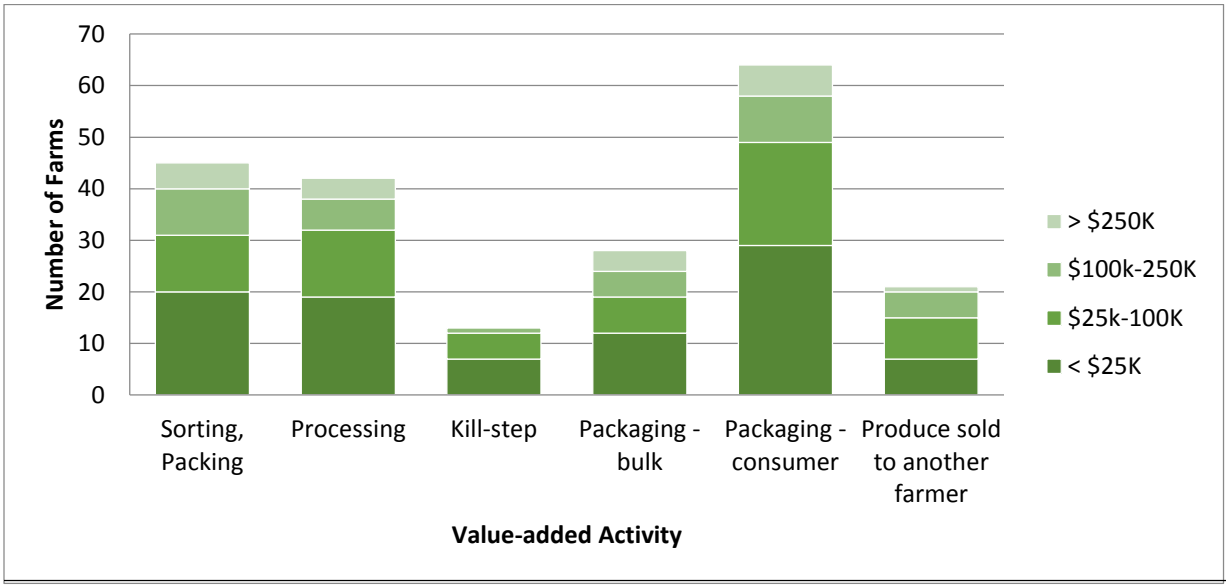


Chart 7 shows that many farmers engage in some form of value-added activities. This would be expected as most products sold to customers require a sorting and packing function. The 2012 U. S. Census of Agriculture reports that 93 farms had packing sheds in NNY. (Appendix C.) Approximately one-third of respondents engaged in some processing such as washing or cutting a product. Most of the value-added processing was done on the farm. A limited number of farms (less than 20 percent) reported using a shared-use commercial kitchen or third-party co-packer. About 10 percent of those surveyed indicated that they utilized some form of kill-step to prohibit microbial growth. Another 10 percent sold product to other farmers for resale. Fifteen percent said they could be interested in value-added processing in the future. The 2012 U.S. Census of Agriculture notes that 282 farms engaged in value-added processing or sold a value-added product in NNY. (Appendix C.) Consideration must be given to where grading and packing of fruits and vegetables will occur. If done at the farm, the producer will deal with under-grades and absorb the shrink. If grading and packing are to be done at the hub, the price received by the producer will be discounted to account for the shrink absorbed by the hub.

Marketing

Producers marketing products from their respective farms or businesses sell directly to the end user through farm stands, U-pick, farmer's markets, and community supported agriculture (CSAs). The 2012 U.S. Census of Agriculture reports that 65 NNY farms used the CSA model to sell product and 266 farms sold directly to retail outlets. (Appendix C.) Products can be sold through intermediated market channels that serve as a conduit between the producer and buyer. The project examined the market channels in which NNY producers currently operate. Survey producers were asked to delineate their sales by market channel participation.

Analysis of current marketing channels

Table 3. Percentage of product sold through selected marketing channels by gross farm sales

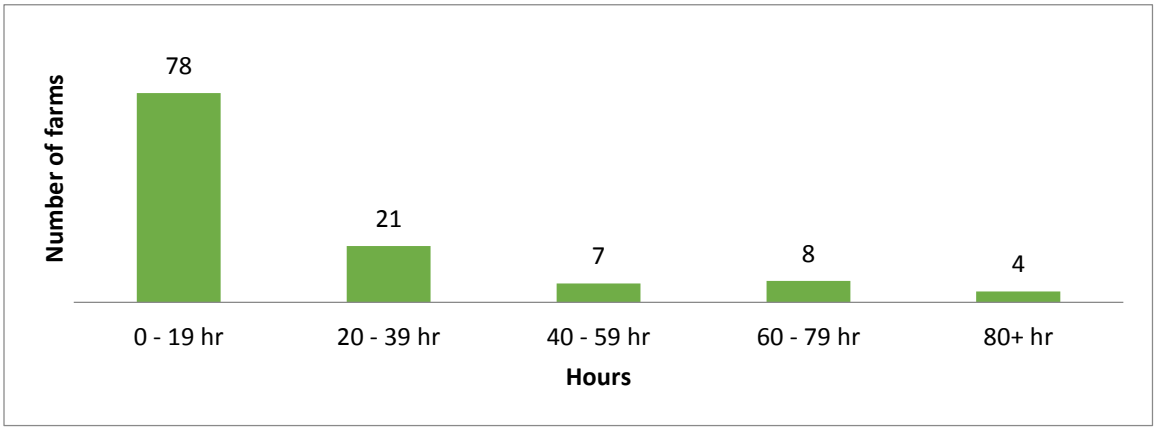
		Farms by gross farm sales			
Market Channel	All Farms	< $25,000	$25,001 to $100,000	$100,001 to $250,000	>$250,000
Farm stand	34%	38%	30%	44%	14%
Community supported agriculture (CSA)	9%	4%	14%	10%	12%
Farmer's market	22%	30%	21%	14%	7%
Grocery stores	5%	5%	6%	2%	10%
Restaurants	6%	6%	5%	14%	5%
Institutions (schools, prisons, hospitals)	1%	0%	4%	0%	0%
Direct sales to food co-ops or buyer's club	5%	7%	5%	2%	8%
Wholesalers or distributors	14%	8%	13%	14%	43%
Auction	3%	3%	2%	1%	1%
TOTAL	100%	100%	100%	100%	100%

Table 3 shows that the majority of small and medium-sized farms sold 50 to 60 percent of product through DTC sales. Farmers prefer these market channels as they tend to receive retail prices for products sold. CSA farms sell shares in advance of growing the product and create a growing plan to meet the needs of shareholders. Medium to large farms engaged in CSA operations. Large scale farms were less likely to sell direct to consumers. The size of grocery stores, institutions, and wholesale market channels require quantities of products and food safety certifications that can be difficult for small and mid-sized farms to provide. Figure 3 shows that 5 of the counties had 11 to 50 farms selling to restaurants and retail outlets and that St. Lawrence County had 51 to 100 farms selling to similar outlets. Larger farms are of size and scale to supply wholesale markets. Few farms in the study sold to grocery stores, restaurants, or to institutional buyers. One or more farms sold to wholesalers, especially large farms. National food hub studies show that restaurants and small grocery stores are appropriate distribution channels for local foods.

Time spent marketing product

Producers were asked to estimate the number of hours per week they spend marketing goods, including labor hours spent in direct marketing efforts, phone calls, developing sales brochures, miscellaneous promotional events, etc.

Chart 8. Average hours spent marketing products



Farmers reported spending minimal time and up to 130 hours per week selling product. The average time spent marketing product was 19.6 hours per week and the median value was 10 hours per week. Approximately half of the farmers in the study spent less than 19 hours per week marketing product. Time spent marketing and selling the product can reduce the time spent managing the production enterprise on the farm.

Distribution

Product sold within and outside of the region

Chart 9 shows the majority of producers sold three-quarters to all of their products within the NNY region. This is expected as most of the farms in the survey were small and sold product through farm stands, CSAs, and farmers' markets. Approximately 20 percent sold less than to no products within the 6-county area. Market saturation within the region from products such as apples and maple force growers to seek markets outside of the area.

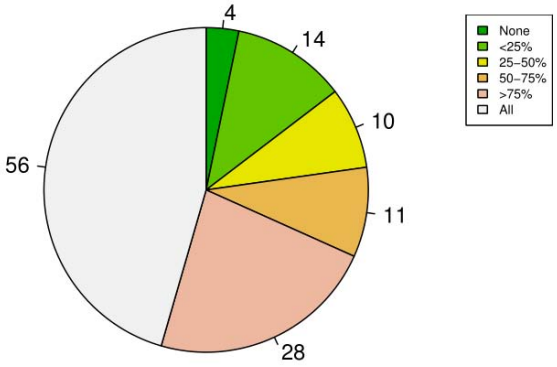
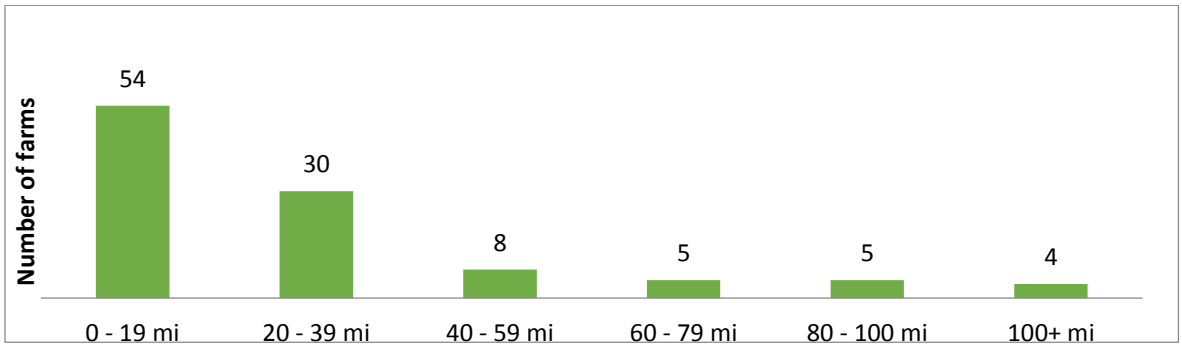


Chart 9. Percent of products sold within the 6-county, NNY region

Distance traveled

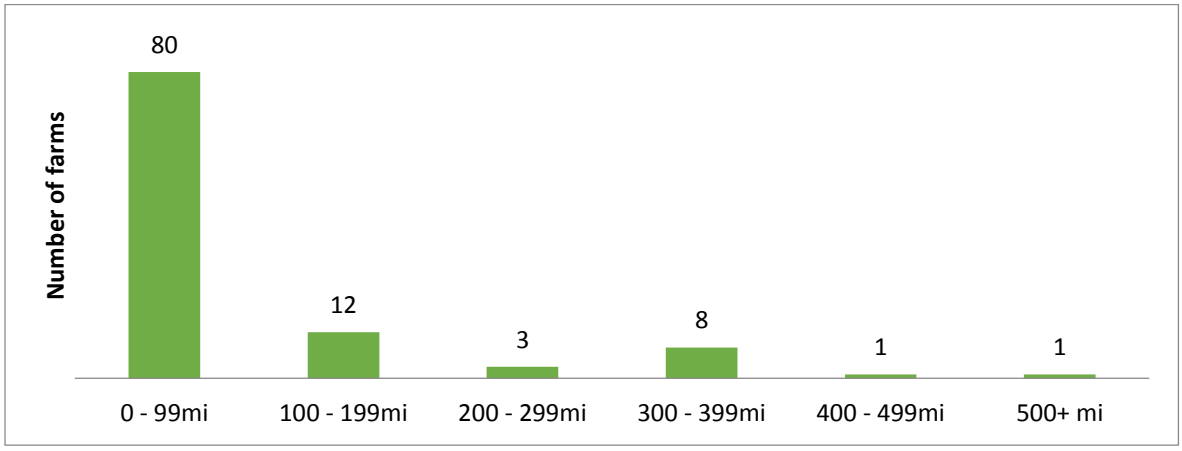
Producers, especially small scale farmers tend to sell at markets closest to them. Producers reported the average distance travelled one way ranged from 0 miles (all product sold at farm stand) to 500 miles. The average distance driven one-way was 34 miles and the median distance driven was 30 miles. Chart 10 shows that two-thirds of all producers traveled less than 40 miles one way to sell product with the majority travelling less than 20 miles. Two-thirds of producers in the survey sold three-quarters to all of their products within the NNY region.

Chart 10. Average distance traveled one-way



One-half of the producers in the survey either sold all the produce at their farm stand, through a CSA, or nearby farmers' market. Thus average distance traveled one way equaled the longest distance traveled one way. Products from NNY farmers may travel longer distances when local markets become saturated or when producers find customers outside of NNY.

Chart 11. Longest distance traveled one-way



Half of the farmers sold into similar market channels and occasionally traveled further distances to move product as well. Chart 11 shows that two-thirds of the farmers traveled less than 100 miles to their furthest customer. The distances traveled one way beyond their local market outlets ranged from 2 miles to 800 miles. Median distance traveled beyond their local markets was 25 miles. One farm reported travelling an additional 800 miles to sell product beyond the average distance to the market. Products moving further distances included high value products such as maple syrup, meat, apples, and wine and commodity products such as dairy and grain.

Distance traveled provides some insight into the physical location of a food hub. Producers were asked, "What is the furthest distance you would be willing to deliver product to a food hub?" Two-thirds of producers in the survey would travel up to 49 miles to deliver product to a food hub. Less than 10 percent were willing to travel more than 100 miles. When forced to move product beyond their preferred markets, they traveled an average extra 77 miles. Hubs could be located at minimum 60 miles apart to as much as 150 miles apart. They need to be located in a place where a cluster of farmers is located with sufficient volume to supply the hub.

Transportation of product is costly. Distance from the farm or production site to the food hub and distance from the food hub to customers are important considerations and need to be carefully weighed when determining food hub locations. The hub may or may not be on a primary road. If on a secondary road, the hub needs to have reasonable access to a main road, approximately 10 to 20 minutes travel time away.

PRODUCERS GEARING UP FOR NORTHERN NY FOOD HUBS

Product availability

A food hub can provide an additional market opportunity for producers who choose to access wholesale marketing channels. Selling to the hub will allow producers to focus more on growing and producing products and less on marketing and distribution of products from their farm. It can allow a farm business to increase in size and specialize in the products to be produced

Farmers were asked of their willingness to produce additional products. Thirty-six farmers indicated that they would increase production if they had the opportunity to sell additional product. Additional acres to support this increased production ranged from one acre to 2,000 acres or an average of 95 acres per farm. Median increase was 10 acres per farm. Chart 12 shows the distribution of types of product that could be available for sale through a food hub. Similar to what is currently available, the largest increases would be in meat, eggs and vegetables followed by syrup and fruit. A farm could report more than one category, if a variety of products were available for sale.

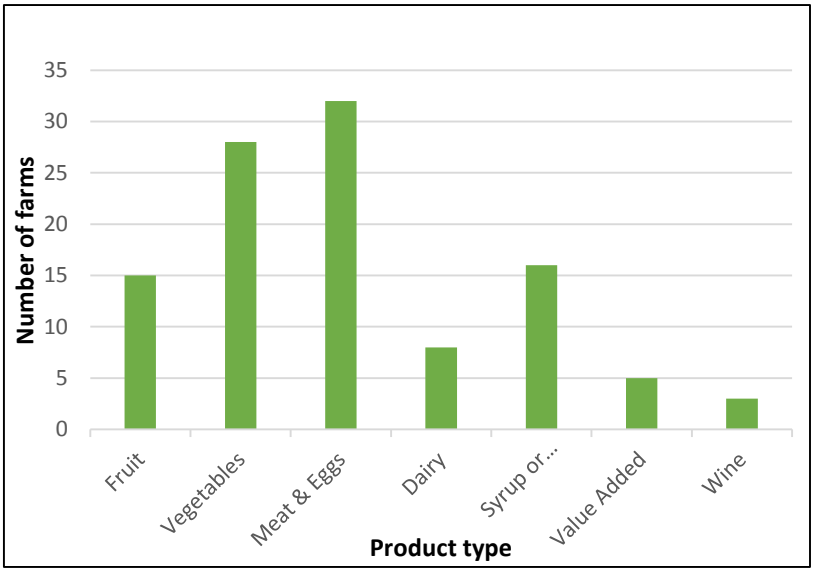


Chart 12. Expansion of product type available in NNY

Farms tended to be diversified in product available. Diversification stems from the previous need on the part of DTC farmers to provide the maximum types of products to attract the greatest number of customers to their farm stands on the farm or at farmers' markets. Product diversity is also derived from complementary enterprises on the farm, e.g. honey from bees that pollinate an orchard or maple sugar enterprise to complement a vegetable operation before the growing season.

The success of businesses engaged in aggregating locally sourced products can be hampered by the seasonal nature of crop production. Season extension technologies are another means by which farmers can increase production. Fifty percent of farmers indicated they were using either heated greenhouses or high or low tunnels to extend the growing season. Others were growing cold tolerant varieties, using row covers to protect transplants, changing the breeding season to level out calving in beef herds, and utilizing vacuum tubing in maple operations. Still others prefer to process or preserve foods.

This diversification provides challenges and opportunities for food hubs that might be established in NNY. For food hubs that physically handle food products, they will most likely be constrained in the types of products they sell because of the investment in refrigerated storage facilities that meet the

needs of the products they procure. At the same time there is a need to have a year-round presence in the market place, thus handling shelf-stable products can be one means to accomplish this.

Production barriers

Some producers expressed a willingness to expand their businesses. On occasion challenges arise that need to be overcome in order for a business to change. Producers were asked to weigh in on some of the barriers that traditionally impede businesses to expand.

Table 4. Resource barriers to local farm and producer businesses

		Farm size by sales in dollars			
	All Farms	< 25,000	25,000 to 100,000	100,001 to 250,000	>250,000
Availability of suitable land	2.54	2.48	2.52	2.86	2.67
Affordability of land	2.54	2.50	2.39	2.64	3.08
Availability of labor	**3.47**	3.20	3.55	4.07	4.17
Availability of financing, access to credit	2.84	2.91	2.77	2.50	3.17
Management skills to run larger operation	2.53	2.52	2.32	2.71	3.08
Cost of equipment, materials, labor to increase production	**3.68**	3.73	3.48	3.64	4.00
Delivery distance	3.21	3.31	3.17	3.00	2.92
Delivery logistics	3.29	3.40	3.29	3.29	3.00
Lack of protein processing facility and/or access to USDA facility	2.57	2.67	2.90	1.92	2.17

Note: Values based on Likert Scale of 1 not significant, 2, little significance, 3 neutral, 4 significant, 5 very significant

Table 4 shows that availability of labor and cost of equipment were deemed to be the greatest barriers to expanding the business. Businesses are challenged to find skilled labor and stoop labor willing to hand plant, weed, and harvest. Some businesses are not of size and scale sufficient to afford full time labor and part time or seasonal labor is difficult to find. Larger farms were more concerned about the availability of labor than smaller farms. Anecdotally farmers mentioned that labor laws are restrictive. For the owners who are the sole labor force for their business, time and lifestyle preferences become limiting factors.

Cost of production can place limitations on some businesses. Small businesses may desire to become more mechanized but the desired machinery can be cost prohibitive to purchase. Small and mid-sized farms may not have sufficient size and scale to receive quantity discounts from suppliers. Large farms in the survey were also concerned about the cost of production. Possibly these farms, while large for our survey, are mid-sized in the population of all NNY farms. Mid-sized farms can be challenged by the cost of hired labor to supplement family labor. They can be constrained by high machinery investment and access to productive land to achieve similar economies of scale of large farms. Another barrier to success frequently mentioned in the literature, but not necessarily mentioned in this survey is the need for improved marketing skills on the part of farmers and producers.

Table 4 reflects that access to USDA certified meat processing facilities is not a significant barrier, possibly this is due to the number of businesses in the survey that either do not produce meat or produce quantities of broilers and turkeys at a level to maintain an exemption from USDA regulations.

Food safety

Food safety is important to farmers and producers. Numerous regulatory agencies require licenses, inspections, and documentation to prove that product for human consumption has been handled in a manner to minimize or eliminate the risks to human health. Farmers adopt practices to reduce the risk of pathogen contamination to various foodstuffs. Meat products such as beef, lamb, and pork need to be processed and inspected in a USDA certified facility for resale. New York State has regulations that allow up to 10,000 poultry to be processed on farm annually without inspection. Section 276.3 of NYS Agriculture and Markets Law regulates home-processed goods and 20-C licensing. The Food Safety Modernization Act (FMSA) is the most recent effort to protect human health by strengthening the food safety system for fruits and vegetables. Farms with less than $25,000 in produce sales are exempt from the regulations. Those with more than $25,000 in produce sales may need to develop and implement a food safety plan and work through a certification process to satisfy buyer requirements. Producers were asked to consider the barriers to create and implement a food safety plan.

Table 5. Barriers to food safety certification

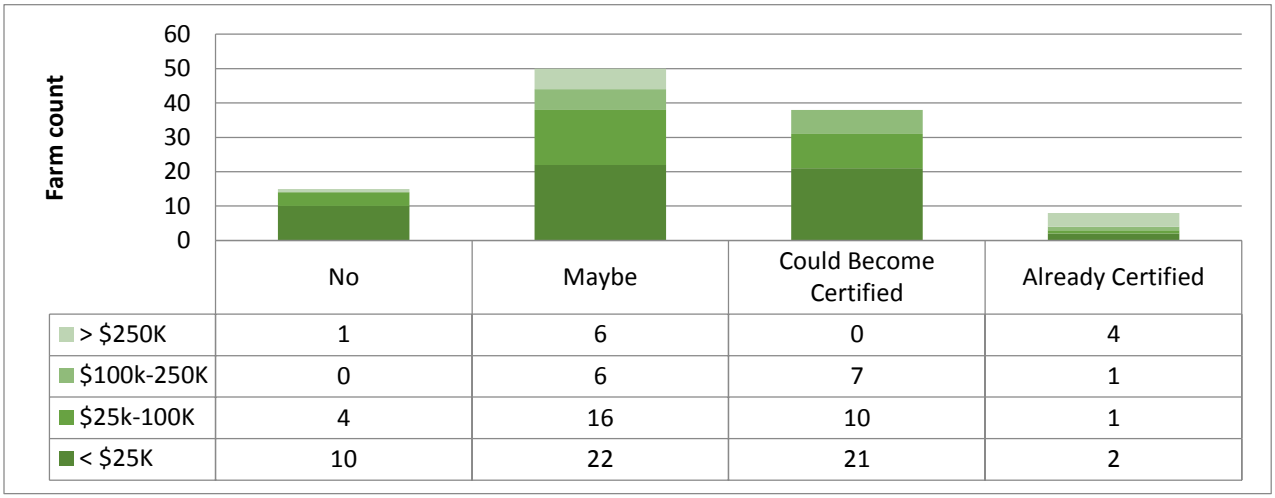
		Farm size by gross farm sales in dollars			
	All Farms	< 25,000	25,000 to 100,000	100,001 to 250,000	> 250,000
Concerns of becoming HACCP certified	3.15	3.26	3.51	3.52	3.51
Concerns about meeting food safety requirements	3.26	3.31	3.19	3.36	3.50
Cost, time, complexity to ***develop*** food safety plan and become certified	**3.51**	3.49	3.38	3.79	4.00
Cost, time, labor to ***implement*** food safety plan	**3.52**	3.59	3.19	3.79	4.08
Access to post-harvest handling facilities (cooling, washing, grading, refrigeration or freezing)	**3.51**	3.77	3.67	3.15	3.08

Note: Values based on Likert Scale of 1 not significant, 2 little significant, 3 neutral, 4 significant, 5 very significant

Farmers completing the survey were asked about the likelihood of becoming certified and the barriers they view as challenging to certification.

Seventy percent of all producers completing the survey indicated that the cost and time to develop and implement a food safety plan were significant to very significant barriers. Table 5 (above) shows that producers with sales over $100,000 view the cost and time to develop and implement food safety protocols are barriers to meet certification standards. Producers with over $250,000 in sales had significant to very significant concerns meeting food safety certification requirements. Small scale producers found access to post-harvest handling facilities to be the greatest barrier as the size of sales did not justify the investment in equipment to meet food safety certification standards.

Chart 13. Likelihood to develop or implement a food safety plan



	No	Maybe	Could Become Certified	Already Certified
> $250K	1	6	0	4
$100k-250K	0	6	7	1
$25k-100K	4	16	10	1
< $25K	10	22	21	2

Chart 13 above shows that forty-five percent of respondents indicated that they were open to the idea of becoming certified if there was demonstrated demand for the certification in the marketplace. Thirty-five percent indicated that implementing a food safety plan could be a real possibility if food buyers demanded the certification. Producers are coming to the realization that to move away from DTC sales and into wholesale marketing channels, food safety certification will be a reality. The Cornell University Food Science Department is spearheading a national program to assist farmers with developing food safety plans. Producers can develop their own food safety protocols or can hire consultant to help them design a food safety plan. Developing the plan is less costly than implementing and maintaining compliance with the plan.

Compared to cohorts of smaller sales, a higher percentage of larger farms were currently certified as they sold into wholesale markets that required third-party audits and certification. Smaller producers indicated that they would not become certified as the volume of sales excluded them from FSMA regulations and the trusted relationship between the farmers selling directly to customers made it unnecessary. Ten percent of the producers indicated that they would cease operations in the near future because of age, life style, or lack of a next generation to carry on or purchase the farm business.

Services desired by producers

Any food hub established in NNY has to meet the needs of the upstream suppliers/producers to secure the necessary product volume and attract the interest of downstream buyers interested in NNY products. Possibly there is a business or individual within the region with the capacity to expand operations to market NNY products on behalf of other farmers. The possibility also exists to form a new business that would serve as a food hub. Marketing and sales functions are highly desired by producers in the survey. Producers were asked to weigh in on services provided by a food hub that would be relevant to their businesses. Over 70 percent of producers indicated that a food hub handling sales and marketing functions was important to very important. The average time spent marketing product was 19 hours, which could be used to expand the production function of the business or delivering product to the hub.

Table 6. Services related to aggregation

	All Farms	Farm size by sales in dollars < 25,000	25,000 to 100,000	100,001 to 250,000	> 250,000
Handles sales and marketing so I can focus on production	**3.83**	3.79	3.93	3.50	3.89
Offers pick up service	**3.65**	3.58	3.81	3.58	3.22
Offers cooling service	3.57	3.74	3.67	3.25	3.00
Offers washing, grading, and/or packing service	3.01	3.16	2.96	3.25	2.33
Offers temperature-controlled cold storage	**3.66**	3.74	3.81	3.33	3.22
Offers freezer storage	3.32	3.40	3.56	3.17	2.44
Offers processing service	3.02	3.14	3.15	2.92	2.33

Note: Table values based on Likert Scale of 1 not important, 2 little importance, 3 neutral, 4 important, 5 very important

Besides providing marketing services, Table 6 shows the preference on the part of producers to have product picked up at their farm. A business that provides pick up services is important especially to farms with sales between $25,000 and $250,000. Larger farms have vehicles to move product. Ownership of vehicles specifically for product transport is cost prohibitive to smaller farms. Transportation is costly. Washing and grading was less needed. Most washing, grading, and packing is done on the farm as standard practices. If product is to be picked up at the farm, it needs to be inspected before transport. Quality standards must be adhered to in order to insure downstream buyer satisfaction. Transport vehicles must have the capability to maintain cold chain and product quality.

Producers were also asked to identify other services or processing that could prove useful in adding value to the products. Services included refrigerated and freezer storage and processing such as dehydration, pickling, smoking, bottling, etc. (See Appendix E for comprehensive list). Slightly less than half were interested in some type of refrigerated storage or short- or long-term freezer space. Less than one-third of survey participants were interested or very interested in any shared use, value-added processing facilities.

Table 7. Operations and distribution

	All Farms	< 25,000	25,000 to 100,000	100,001 to 250,000	>250,000
Has own transport capabilities	**3.59**	2.98	**3.67**	**3.62**	3.33
Strategically linked to an existing distribution hub or service	3.19	2.57	3.03	3.31	3.08
Operates on a seasonal basis	2.75	2.25	2.36	2.92	2.42
Operates year round	**3.50**	2.67	**3.68**	**3.77**	3.00
Distributes products in NNY only	2.44	2.00	2.19	2.29	2.67
Distributes products in NNY, Canada, Northeast	3.03	2.17	3.07	3.31	3.08
Is a web-based trading site	3.07	2.47	2.96	3.17	3.18
Has 'brick-n-mortar' & warehousing, refrigeration, freezer capabilities	**3.56**	3.08	**3.55**	**3.62**	2.92
Distributes products ONLY produced in NNY	3.14	2.88	2.70	2.79	3.08

Note: Table values based on Likert Scale of 1 not important, 2 little importance, 3 neutral, 4 important, 5 very important

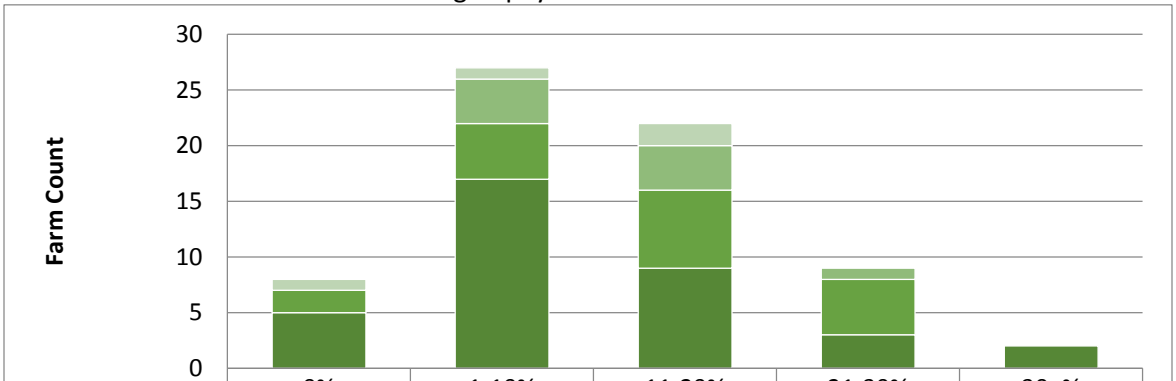
Food hubs manage the aggregation, marketing, and distribution of locally-sourced foods. Some hubs are "virtual" where transactions are made through the Internet. Other hubs have physical facilities. Table 7 shows that a physical facility was important to very important to two-thirds of survey producers and supports the notion that producers will deliver to a central location. Farmers want a facility where they can bring fresh-picked product to be cooled and refrigerated. A web-based trading site had little appeal to producers.

Some food hubs operate year round and others operate seasonally, usually during fruit and vegetable harvest. To be successful, most hubs need to be in the market place year round. Operating year round was important to half of respondents. Half of the producers sold fruits and vegetables and half indicated that they utilized some form of season extension and/ or value added processing. Early and late-harvest fruits and vegetables increases the length of time that the hub would have fresh produce available. Access to protein products, maple, and processed products ensures product availability year round when fresh fruits and vegetables are not available.

A food hub that only distributes NNY-sourced products had little traction with producers. Perhaps producers realize that they may not have sufficient volume to support the hub year round and products sourced from other areas are necessary for long term hub success. Producers did not support the notion that the hub should only sell to customers in NNY. They have little to no preference where their product is distributed once it leaves the farm.

Producers were asked about the percent commission they were willing to pay for services rendered by the food hub. Some chose to pay nothing with the cost of services passed on to buyers. Another producer indicated that he would pay as much as 45 percent commission on the product sold. The average commission to be paid was approximately 15 percent. The following chart shows that 40 percent of the producers were willing to pay up to 10 percent commission with another 30 percent willing to pay between 11 and 20 percent. Overall producers have reasonable expectations in fees for services that they would expect to be charged.

Table 8. Percent of commission willing to pay*



	0%	1-10%	11-20%	21-30%	30+%
> $250K	1	1	2	0	0
$100k - 250K	0	4	4	1	0
$25k - 100K	2	5	7	5	0
< $25K	5	17	9	3	2

*Only 68 of 125 producers chose to complete this question

As mentioned before, transportation costs are one of the biggest expenses in any market channel. Table 7 indicates that many farmers are interested in having product picked up at their farm for delivery to a food hub or customer. The most efficient use of a delivery vehicle is that it delivers a full load of product from a central location and secures product to transport as it returns to its original destination or "make it pay both ways." In reality aggregation points are pre-determined and producers deliver products to these centers. Producers were asked how far they were willing to transport product to a food hub.

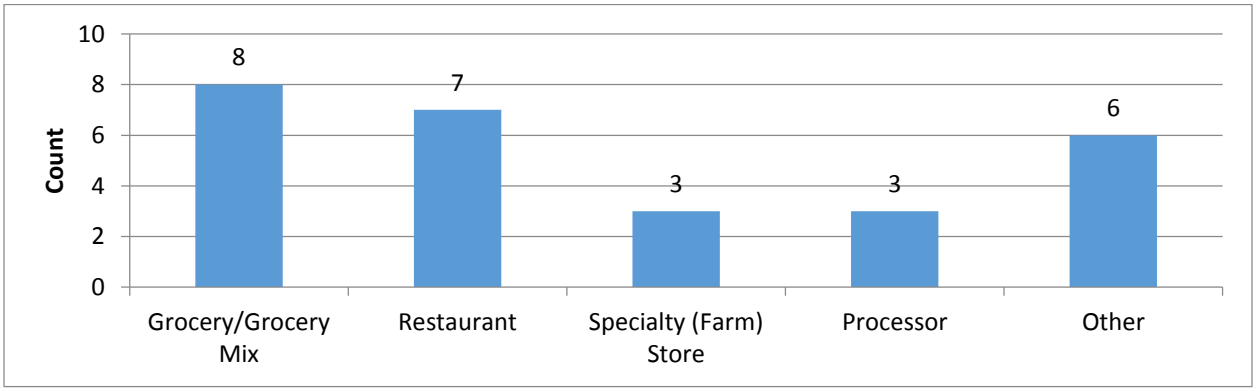
Summary

Nationwide, food hubs source product from small and mid-sized farms. Farms of similar size located in NNY are interested in providing product to one or more food hubs that would be developed within the region. Vegetables, fruits, maple, and meats are the largest volume products produced in the area. Most of these products are sold direct to consumers with farmers receiving retail prices. The most significant barriers to scaling up production by producers are the availability and cost of labor and the cost of equipment and input supplies. Food safety certification is also a barrier. Small scale producers prefer that the hub pick up product at their farm. However, most producers would drive 30 to 50 miles one way to deliver product to the hub. Producers prefer a "bricks and mortar" facility to "virtual" food hub and that a food hub operate year round. Desired volume produced with certifications required by law and buyers will be critical for the startup and long term success of food hubs located in NNY.

NORTHERN NEW YORK BUYERS

Another focal point of this report is to gauge the interest of food buyers (which can include producers purchasing product for resale) in purchasing locally-sourced products from food hubs located in Northern New York. This portion of the report includes responses and opinions from 27 buyers who sell food items to customers and consumers located or doing business within the region. The survey was not exhaustive and significantly more buyers are engaged in purchasing products than were surveyed.

Chart 14. Buyers by type



NOTE: Grocery/grocery mix can include chains and independent grocery or convenience stores as well as providing other food services such as an in-store restaurant, or sale of specialty items.
Other includes mill (1), K-12 school (1), contract management (1), distributor (1), caterer (1).

The 27 buyers provided information by completing a convenience survey. The buyers were asked to select one of fourteen options to best describe their businesses. Some chose multiple options as they engaged in several types of activities. Chart 14 shows that buyer types were combined into groups as a means to achieve a critical mass in which to aggregate the data. Because of the limited number of businesses, generalizations of the overall business populations can be difficult.

Figure 5 shows that most of the buyers surveyed are located in Essex and Clinton Counties. Buyers recorded location by zip code, thus some of the locations overlap.

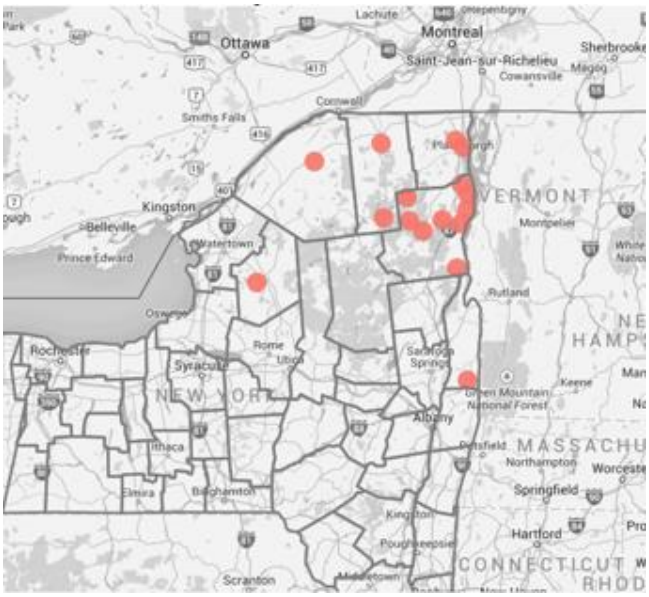


Figure 5. Location of survey buyers

Table 9 identifies the number of food and beverage businesses, restaurants and food service businesses and institutions located in NNY. The business patterns below are summarized from 2013 data of the U. S. Census Bureau of the Department of Commerce released in April 2015. The largest number of food establishments are located in Jefferson and Clinton Counties.

Table 9. Six-county business patterns in food retail

	County totals						
	Clinton	Essex	Franklin	Jefferson	Lewis	St. Lawrence	Total
FOOD AND BEVERAGE							
Supermarkets and other grocery (445110)	22	19	12	30	3	28	114
Convenience stores (445120)	10	3	3	3	1	6	26
Grocery & related product wholesalers (4244)	10	1	7	10	1	5	34
General line grocery/merchant wholesalers (424410)				1		1	2
Specialty food stores (4452)	5	7	1	9	2	3	27
Meat markets (445210)	2	2			2	0	6
ACCOMODATIONS AND FOOD SERVICE							
Food service contractors (722310)	11	4	0	1	0	6	22
Caterers (722320)	5	1	0	3	0	0	9
Restaurants & other eating establishments (72251)	131	118	73	252	40	158	772
Full service restaurant (722511)	70	80	41	119	27	94	431
Limited service restaurant (722513)	44	22	21	104	12	47	250
Cafeteria, grill buffet, buffets (722514)	1	0	1	3	0	5	10
Snack, non-alcoholic (722515)	16	16	10	26	1	12	81
EDUCATIONAL SERVICES							
Elementary & secondary (61111)	3	8	5	14	1	7	38
Jr. colleges (61120)	0	1	0	0	0	0	1
Colleges & universities (61130)	0	0	1	2	0	0	3
Technical schools (61151)	0	0	0	1	0	0	1

Source: County Business Patterns, United States Census Bureau, 2013

Retail grocery

This project reports on the perspectives of 8 grocery/grocery mix operators when the 6-county, NNY area contains 114 grocery stores and 26 convenience stores. Supplemental information was secured from the National Grocers Association to better illustrate the trends within the market sector.

The National Grocers Association conducts periodic consumer surveys (Lempert). Access to locally grown products is important to customer satisfaction. Their 2014 survey showed that:

- When choosing their primary food store, 87 percent of consumers indicated it was very important (44.2 percent) and somewhat important (43 percent) that a supermarket offer locally grown produce and packed goods. "Leading the 'very important' component (44.2 percent overall) are: Hispanics (53.3 percent), single-person households (49.4 percent) and adults between the ages of 50 and 64 years old (46.2 percent).
- Sixty-four percent of adults shop "where they do" because of the availability of organic foods.
- Customers rated their primary grocery store on "offers locally grown and sourced packaged goods." Sixty-seven percent rated their stores as excellent (27 percent up from 18 percent in 2009) or good (40 percent).
- When asked, "Which of the following would signal to you that a supermarket cares about you?" The highest ranking signal is that the store is clean and well organized (55.3 percent). Of the 18 choices, "has fresh, local organic foods available" ranked 5th with 20.8 percent followed by "cashiers (& baggers) are fast, friendly, & offer help to my car" with 20.7 percent.
- For three-quarters of respondents, fresh foods are the main draw to the supermarket. Cleanliness of the display was most important to 66 percent of shoppers and locally grown produce was important to 22 percent of shoppers with source traceability important to 10 percent.

Locally-sourced products are important to the customers of retail grocery stores. They are important in maintaining customer loyalty and are on par with the interaction of cashiers and baggers. To maintain competiveness in the market place, retail grocer must carry locally source products. Table 10 below indicates that people consume locally grown foods more frequently than organic foods.

Table 10. Frequency of customers consuming local or organic

Frequency	Eat locally grown foods (%)	Eat organic foods %
Never	1.3	5.8
Rarely	14.6	32.4
On special occasions	2.5	3.0
Once a month	8.6	5.4
Once every other week	18.0	12.2
Twice a week	15.2	8.7
Three times a week	17.5	10.4
Once a day	11.0	9.1
Multiple times during the day	11.3	13.0

Source: 2014 National Grocers Consumer Survey

Restaurants

This project reports on the perspectives of 7 restaurants and caterers when the area has over 1,100 other similar establishments. In all, 11 total businesses reported principle activities in preparing and serving food to customers. Supplemental information was secured from the National Restaurant Association to better illustrate the trends within the market sector.

Eleven businesses of the NNY survey reported that principle activities were focused on preparing and serving food for customers.

The National Restaurant Association conducted an online survey in October 2014 completed by 1,276 chefs and members of the American Culinary Federation to identify future trends in customer preferences. The American Culinary Federation has 20,000 members. The *2015 Culinary Forecast* noted that over 70 percent of the chefs indicated that locally sourced meats and seafood, locally grown produce, and new cuts of meat were "hot trends." While locally sourced foods had been identified as a trend since 2009, slightly over 20 percent of those completing the survey indicated that local foods would continue to be a customer preference for the next 10 years (National Restaurant Association).

Table 11. TOP 20 FOOD TRENDS

1. Locally sourced meats and seafood
2. Locally grown produce
3. Environmental sustainability
4. Healthful kids' meals
5. Natural ingredients/minimally processed foods
6. New cuts of meat
7. Hyper-local sourcing (e.g. restaurant gardens)
8. Sustainable seafood
9. Food waste reduction/management
10. Farm/estate branded items
11. Non-wheat noodles/pasta
12. Gluten-free cuisine
13. Ancient grains
14. Whole grain items in kids' meals
15. Non-traditional fish
16. Ethnic-inspired breakfast items
17. Nutrition
18. House-made/artisan ice cream
19. Fruit/vegetable kids' side items
20. Artisan cheeses

"What's Hot in 2015?" –
National Restaurant Association

Wholesale

The Sysco Corporation engaged the Wallace Center, Winrock International to conduct a pilot project to procure locally-sourced foods in 2008. Rick Schnieders, Sysco Corp. Chief Executive Officer, 2003-09 recognized that the company's customers wanted more flavor, variety and meaningful connections to the people and places from which food was sourced. He determined that the requests for product diversity and connection to producers was not going away, in fact, demand for "romance, memory and trust" was growing significantly. The best way to retain and expand the customer base was to find new ways to source a greater variety of product tied to strong social and environmental values (Cantrell). Sysco "coaches growers on sustainable practices and helps to connect small and local farms with chef-driven restaurants (Sysco website July 14, 2015). Sysco's broadline operating companies are locally focused supplying food and non-food products to chain and non-chain restaurants. A Sysco broadline facility is located in Warners, NY, 10 miles west of Syracuse.

Other buyers

Several buyers reported themselves as small scale processors and on-line buying club. They purchased fruits, vegetables, meat and grain. Three businesses reported selling products such as maple or honey at a farm stores and specialty shops such as health stores or gift shops.

Buyers define local

Similar to producers, buyers were asked to define 'local' in terms of place and distance. Table 12 found below shows that almost half reported 'local' as within NNY. Others anecdotally described 'local' as within 50 miles, the Adirondacks, 100-mile radius preferred, but New England acceptable, Northern NY and Vermont, and Southern Quebec.

Table 12. NNY buyers' definition of 'local'

Region or distance	Number of responses*
Northern New York	10
New York State	3
New England	5
Northern NY and Ontario, Canada	2
Less than 350 miles (would include major NE cities, Montreal, Quebec)	2
More than 350 miles	1

*Some buyers chose more than one.

One large wholesale buyer said, "Our definition of local includes foods that are grown, raised or produced in the same state or geographic region. In many cases, our clients will have specific definitions of local, so we have many, many different definitions we honor on behalf of our clients."

Demand for local

Ninety percent of NNY surveyed buyers noted that, "Customers are asking for more local." Products most desired were organic, both certified and non-certified, more fruits and vegetables, and more meat products including grass-fed animals. The trends that are emerging include convenience in both prepared foods such as soups and meals, and convenience – "Can I get it where I shop or dine now?" Customers would like to purchase more local products year round. Buyers are concerned as they are challenged by the willingness of the customer to pay a premium for locally-sourced products. Buyers promote that they source local foods to their customers through numerous ways including word of mouth, farm tours, advertising on menus, advertising in print media, flyers, banners, radio, and social media.

Table 13. Reasons for sourcing locally produced foods

Reason to purchase local	Number in top 3	Scaled score*
Fresher food	13	32
Better taste	9	27
Customer demand	9	20
Support local economy	9	14
Support local farms	8	10
Environmental responsibility	8	8
Marketing, 'good for business'	4	5
Costs less	2	3
Food safety concerns	1	2
*Three points assigned to each first choice, two points to second choice and 1 point to third choice which is then summed up across all observations.		

Products purchased

Table. 14 shows the diversity of products purchased by buyers completing the survey along with the volume of product purchased on a weekly basis. The table demonstrates the need for food hub operators to consider how to source adequate volumes of product to meet the diverse needs of the buyers and manage inventory. Consideration also needs to be given to the size of the packaging of various products.

Table 14. Range in product volume purchased by NNY buyers

FRUITS AND VEGETABLES		
Category	Number of buyers reporting	Range in volume purchases per week
Tree fruit	10	30 to 84 lbs.
Berries	5	30 to 100 lbs.
Greens (includes lettuce)	9	1 to 20 lbs.
Vegetables (includes tomatoes)	13	10 to 500 lbs.
Root vegetables (includes onions)	11	5 to 3,000 lbs.
Unique: Herbs, garlic, elderberries, crab apples, local nuts, mushrooms, maple. Seasonal purchases may double or triple products purchased.		
PROTEIN		
Category	Number of buyers reporting	Range in volume purchased per week
Eggs	13	1 - 60 cases
Chickens	6	6 to 60 lbs.
Beef cuts	10	5 to 250 lbs.
Ground beef or hamburger	10	5 to 80 lbs.
Pork cuts	6	6 to 10 lbs.
Bacon or sausage	6	4 to 25 lbs.
Lamb or goat	4	10 to 11 lbs.
Bison	2	6 to 10 lbs.
Turkey	1	10 turkeys per week (calculated from annual purchase of 500)
Unique: Two buyers purchase fish, desire to purchase duck, rabbit, venison in the future		
DAIRY		
Category	Number of buyers reporting	Range in volume purchased per week
Fluid milk, cream, half and half	10	½ to 110 gallons
Cheddar, mozzarella, cheese curd	14	3 to 500 lbs.
Specialty or artisan cheeses	9	3 to 960 lbs.
Yogurt, cultured products	6	1 to 36 quarts
Unique: Ice cream, crème fraiche		

Daily or weekly purchases is expected as many products are perishable and buyers prefer the freshest products available. An intermediated company such as a food hub would need the necessary skills and processes to coordinate the supply of product from the producers with the demand of the buyers.

Table 15. Total annual purchasing volume of all product categories

	$1-10,000	$10,001 - 50,000	$50,001 - 100,000	$100,001, 250,000	$250,001 - 500,000	$500,001 - 1,000,000
Fruit & Veg.	12	7	1	1	0	2
Meat	7	9	3	0	0	2
Dairy	13	4	1	0	2	0
Eggs	17	2	0	0	0	0
Honey, Maple, Other	16	4	1	0	0	1

Buyers reported total annual purchasing volume by dollars and by the percent of the product purchased locally. Most (but not all) of the buyers purchased within all of the product categories. Table 15 shows that for all of those reporting, they had purchases of less than $1,000,000 with two-thirds reporting purchases of less than $50,000 per product category. The table above summarizes the buyers who made purchases in one or more of the product categories. One major buyer completing the survey did not have access to information regarding annual purchases. It is important for a food hub to align demand with supply. Most buyers are sourcing multiple products through small purchases.

Buyers also reported the percent of total sales of product sourced from the six, Northern NY counties for each product category along with the percent purchase of organic certified product with the category. Table 16 below shows approximately 30 percent of the buyers sourced over half of total purchases from local sources. The remaining half of total purchases were either purchased for off-season use or to supplement product that could not be sourced locally during the growing season. Dairy and eggs were the highest percentage purchases as was maple and honey. Half of the buyers did not purchase organic products. While the demand for organic continues to grow, it remains a small percentage of the total food supply.

Table 16. Percent of total purchased product local or organic by number of buyers

	Fruits and vegetables		Meat		Dairy		Eggs		Other (maple, honey)	
Percent	Local	Organic	Local	Organic	Local	Organic	Local	Organic	Local	Organic
0	1	10	8	16	8	15	6	13	7	11
<10	6	7	6	2	4	1	6	5	5	5
10 to 25	4	1	1	1	1	2	0	0	1	1
26 to 50	5	0	1	1	3	1	1	0	0	0
51 to 75	5	2	4	1	1	1	0	1	2	1
75 or more	3	3	4	2	7	3	9	5	9	7

Utilization of 'seconds' or under-grades

Utilization of 'seconds' or under-grades is an emerging trend in the local food movement as a means to build sustainability across the system. Table 17 shows that half of the buyers reported purchasing under-grades, mostly sourced from NNY. Seconds or under-grades may be purchased at a discounted price, utilized in value-added processing or provide a means for creating a creative culinary experience. Slightly over half of the buyers surveyed reported that they purchased seconds or under-grades. One concern worth mentioning is that if a food hub's mission was to 'sell the highest quality available,' selling seconds or under-grades conflicts with the business goals. Prices paid by buyers for under-grades is significantly lower than for premium grades, while handling charges on the part of the food hub remain constant. Another concern is that the costs to handle under-grades would exceed the prices paid. Careful consideration should be given to sale of under-grades as they are likely to be sold at a loss.

Table 17. Number of buyers purchasing under-grades

Seconds or under-grades purchased	Local (n=14)	Organic (n=10)
0%	0	4
<10%	2	2
10 – 25%	1	1
26 – 50%	0	0
51 – 75%	1	0
75% or more	2	1
100%	8	2*

Note: *Reported as non-certified organic

Purchasing decisions

Buyers were asked about the flexibility in making purchasing decisions of local foods and the frequency of purchase. Some buyers can be limited in the purchases they make by contractual agreements, budgets or pricing limitations. Table 18 below shows that almost half of the buyers had flexibility to purchase product from a local supplier at any given price. Buyers with the most flexibility in purchasing included restaurants, independent grocery stores and specialty shops. This is expected as local owners of have control over purchasing decisions and preferred suppliers, compared to larger businesses with company buyers procuring large purchases through wholesalers or distributors. One buyer was constrained in purchasing, only working with producers who could provide a product consistently for a period of 2 to 4 weeks. Buyers mentioned that cost was a concern as most producers did not have competitive wholesale pricing. One-quarter of the buyers noted that the seasonal nature of the growing season is a limiting factor for purchasing local, which indicates a desire to increase purchases of locally-sourced products.

Table 18. Flexibility in purchasing locally-sourced products

Flexibility	Count
Very flexible, can purchase any quantity from any local supplier at any given price	12
Somewhat flexible, have some vendor, budget and pricing limitations	7
Not flexible, procured within existing contracts	2
Seasonality limits flexibility	5

Chart 15. Pricing approach to NNY products

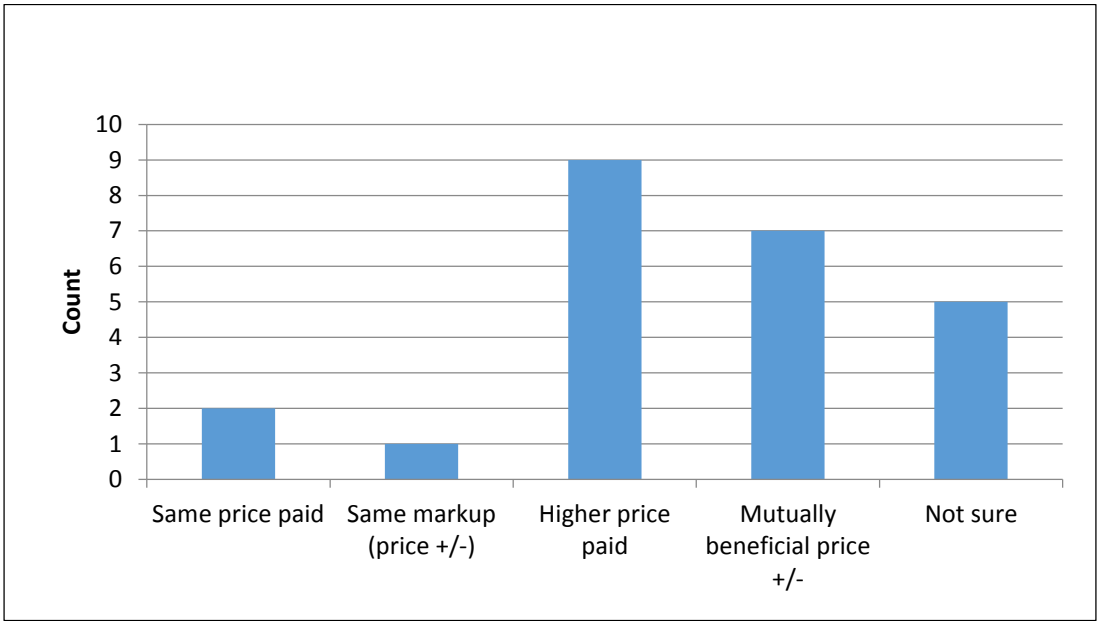
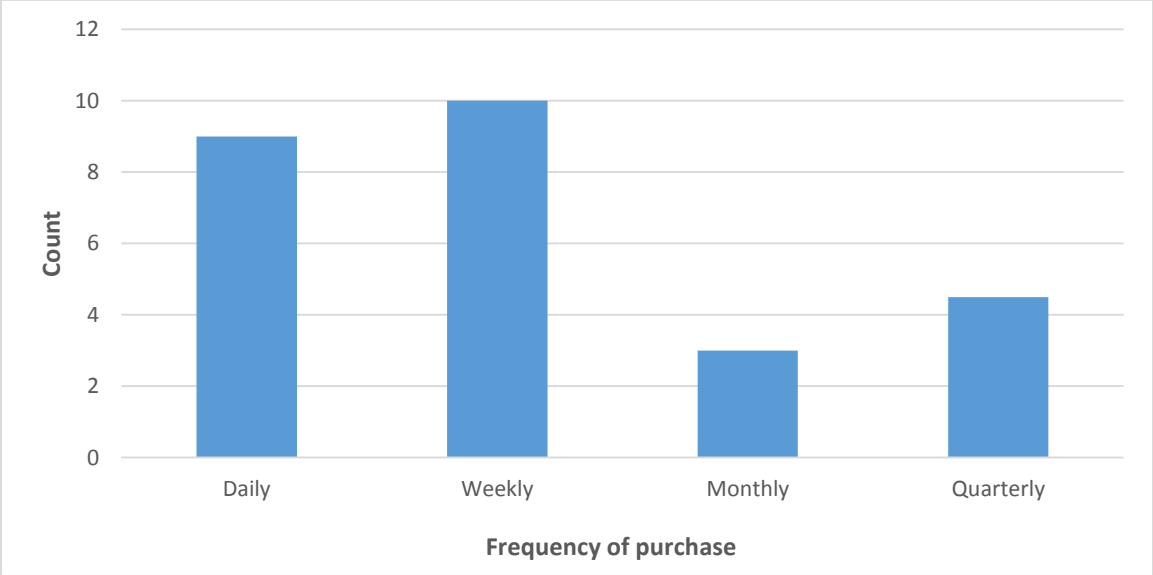


Chart 15 above shows that buyers paid higher prices for locally sourced products or negotiated a mutually beneficial price between themselves and the suppliers. The benefits accrued to buyers in purchasing locally-sourced products included supporting the local economy and the livelihoods of the persons within the area, price points that help local businesses grow, loyal customer base, and mutually beneficial relationships that develop – "we buy, they buy." A few buyers believe that local sourcing has positive environmental impacts, e.g. reduces fuel costs, less packaging.

While many buyers expressed a willingness to pay more for locally-sourced products, half mentioned that price was a challenge and added costs to their business in terms of outlays for the product itself, reduced margins overall to the business and labor needed when ordering from multiple suppliers. Availability of product also presented challenges equal to pricing – seasonality limiting supply as mentioned previously as well as over-abundance of similar products. Consistent supply and quality is a challenge. Product delivery had mixed responses. Some buyers appreciated the delivery to the door but many found logistics in delivery was "time consuming and variable" and "you never know when it will arrive."

Some buyers reported that they purchased product monthly, seasonally or annually. Chart 16 shows that most products were purchased weekly.

Chart 16. Frequency in local food purchases



A large wholesaler mentioned a preference to not purchase directly from the farmer as the company does not have the personnel to manage all of the relationships. The wholesaler also noted that they do not have the loading dock capacity to off-load small quantities of product delivered from numerous farms. The wholesaler also "relied on vendor partners to ensure food safety practices, thus they preferred to work through an approved distributor.

Chart 17. Relative difficulties in procuring local foods

Likert scale with 1=not difficult at all, 2=not very difficult, 3=neutral, 4 difficult, 5=very difficult

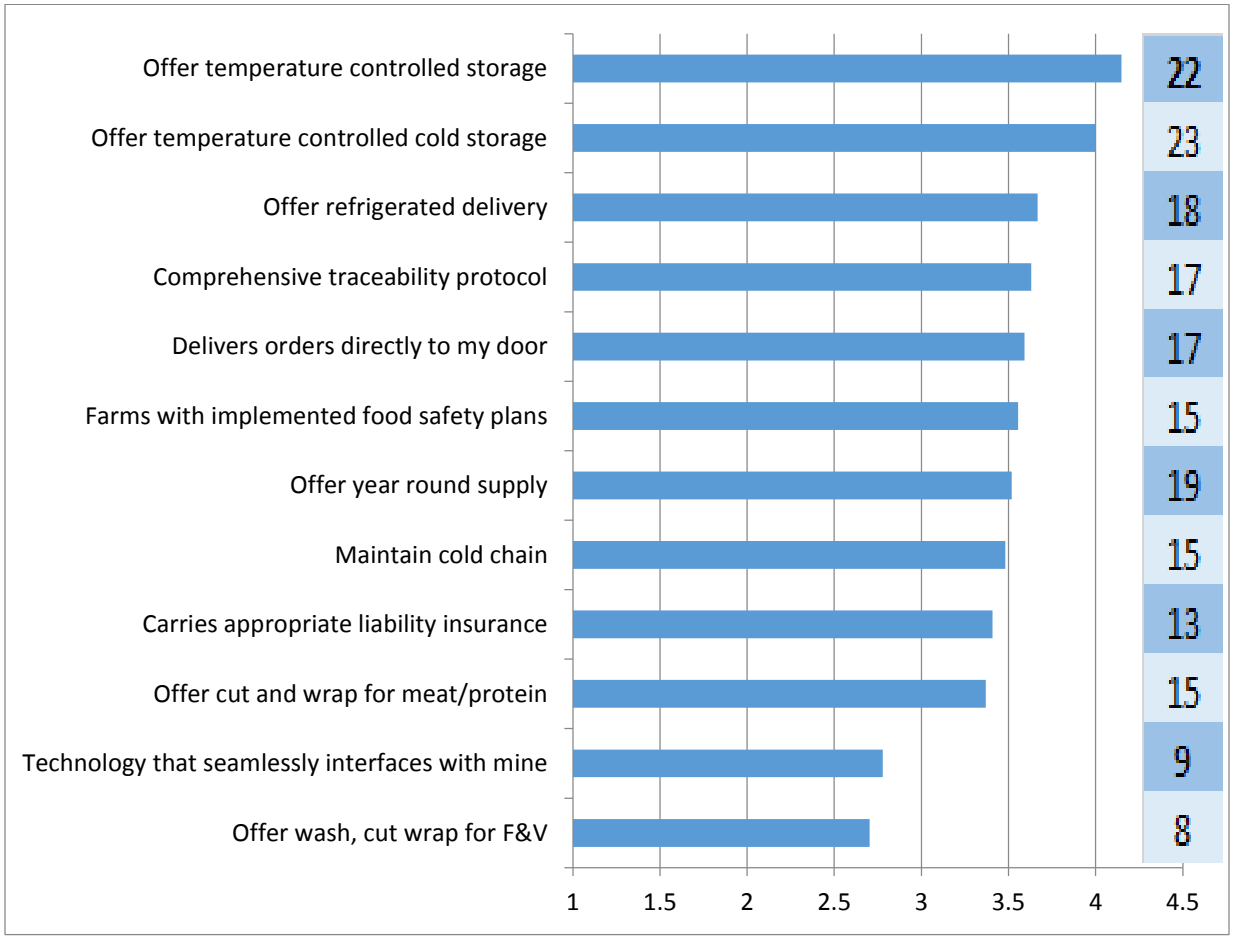
Table 17 above hones in on three critical points. Logistics in coordinating deliveries of product, finding the suppliers that can provide necessary quantities at desired times, and product prices are the three most challenging obstacles to overcome followed by government policies and regulations that impact the sector.

The majority of the buyers were either restaurants or locally-owned independent retail grocery or convenience stores with some ability to prepare foods. Buyers shared information regarding their expectations regarding food safety, labeling, and packaging. Forty percent of buyers had no formal requirements regarding purchase of local foods (including limited requirements for food safety plans, audits, certifications) while one-quarter of the buyers relied on requirements stipulated by the distributors. Knowledge of farm practices used to grow the product was important. The need for product traceability (12 percent) emerging. When focused specifically on packaging standards, 60 percent of buyers required USDA standards (especially those purchasing meat products and distributors purchasing for resale). One-third of buyers had their own standards by which they purchased product and 11 percent required that the cold chain be maintained. Recyclable packaging materials was required by 4 percent of buyers.

Buyers' preferences for Northern New York Food Hubs

Buyers expressed the difficulties in the distribution and logistics in procuring local foods. Even though the survey was completed by a small number of diverse buyers, agreement coalesced around four main areas. When asked what critical services a food hub should provide for buyer satisfaction, temperature controlled storage and delivery direct to the buyers door was most critical to buyers followed by traceability protocols and food safety (Chart 18). As noted before, buyers prefer access to year round supply.

Chart 18. Important services in aggregation and distribution*

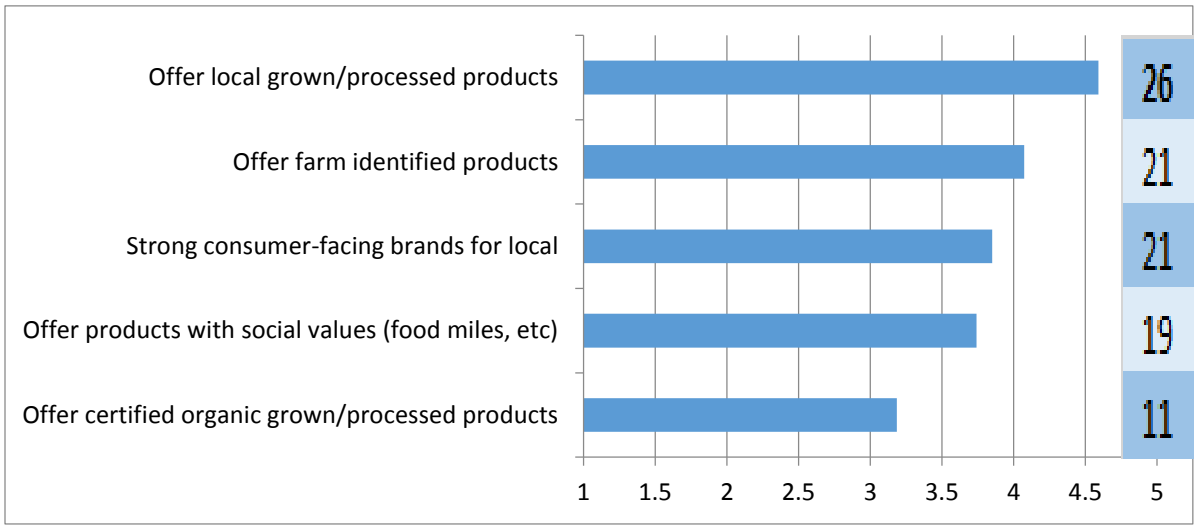


Note: Likert scale: 1 is not important, 2 is little importance, 3 neutral, 4 important, 5 very important
*The numbers to the right indicate the number of buyers who believe it to be important or very important.

The purpose of a food hub is to source and market local foods. Chart 19. identifies buyers' preference for marketing services. Marketing local foods can occur in three ways. One way is that the food hub develops a brand and markets the business as a source of locally procured goods. Farm identity is maintained for traceability purposes but not for marketing purposes. Tuscarora Organic Growers is an example where local organic produce is marketed under the cooperative's brand not under the farmer's name. Another way a food hub develops and markets the business is to source local products but maintain the farmer's identity along the market channel. The food hub is relied on as a source of

product from a specific farm. The third way is that the food hub markets local foods to a wholesaler. The wholesaler can promote the source-identified product downstream to the next buyer.

Chart 19. Important marketing services*



Note: Likert scale: 1 is not important, 2 is little importance, 3 neutral, 4 important, 5 very important
*The numbers to the right indicate the number of buyers who believe it to be important or very important.

The first marketing strategy, branding the product under the food hub business, is easier as the hub can acquire sufficient product from numerous farm suppliers to meet buyers' orders. This strategy also supports the third strategy to maintain the brand throughout the supply chain.

The second strategy, branding the farm name can be more difficult as the preferred producer may or may not have the desired quantity of product available for at any given time. Offering locally grown or processed products was most important to the buyers. Maintaining the identity of the farm from which the product was sourced was important to very important to three-fourths of the buyers. Developing brands of the food hub and the farm that resonate with the buyers and their respective customers was equally important.

Foods that articulate important social messages such as fewer food miles traveled, sustainably grown, animal-welfare certified, etc. are one means of differentiating and branding in the market place. Social values will become increasingly important and can provide a strategic competitive marketing advantage. Certified organic products was important to very important to almost one-half of respondents. Several buyers indicated that purchasing product from farmers 'grown without pesticides' or 'non-certified organic' was an acceptable alternative to certified organic.

At a minimum, producer identity needs to be retained for food safety traceability purposes. Product from more than one farm may be needed to fill a buyer order. In a cooperative-structured food hub, product tends to be pooled. For these reasons it will be difficult (but not impossible) to retain the producer identity for marketing purposes of the product.

Conclusion

Trends and interest to consume locally-sourced products continues. Large and small volume food buyers desire to purchase more NNY produced foods year round. Annual purchasing volume by buyers is less than $50,000 per year for each food category. The definition of local flexes to meet the needs of the buyer. Buyers, especially owners of local businesses have flexibility in purchasing decisions. They are concerned that producers have unrealistic expectations in the prices that will be paid. Scheduled delivery and billing and consistent quantity and product quality are additional challenges to be overcome to build buyer satisfaction. Food safety certifications may or may not be required but the need for product traceability is emerging. There are opportunities to expand the sales of NNY products.

CONSIDERATIONS FOR FOOD HUB DEVELOPMENT IN NORTHERN NEW YORK

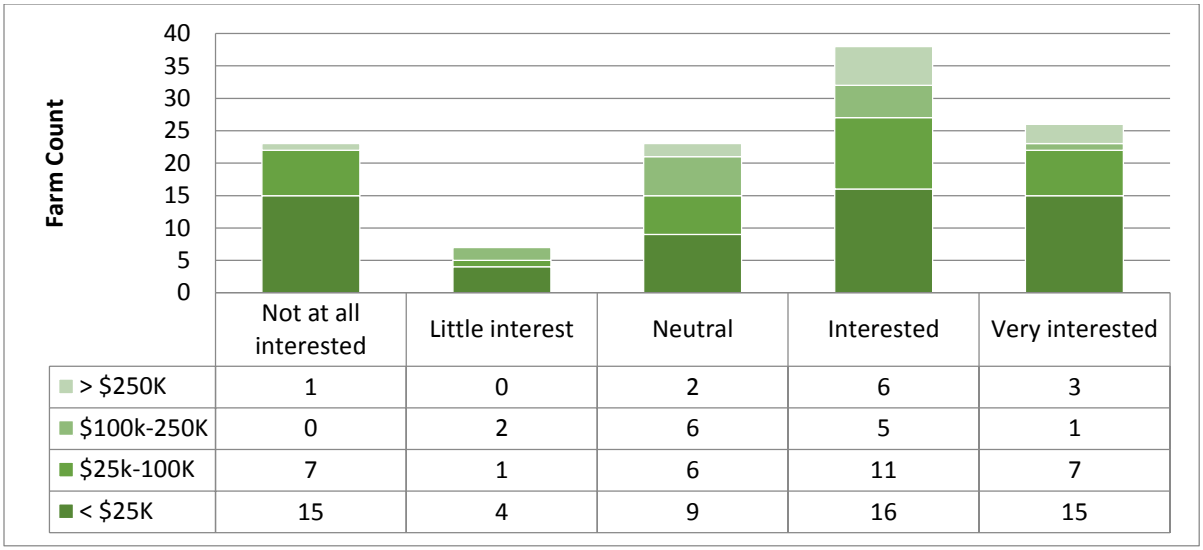
Northern New York food hub enterprises will be successful when they attract sufficient supply from producers and deliver exceptional service to buyers at a price that generates profits to the hub and upstream and downstream businesses. Producers and buyers were asked about their willingness to do business with food hubs if they were to be organized in NNY. The first part of the road map focuses on the attitudes of producers and concerns to be addressed for them to have confidence in selling through a hub. A sizable body of literature has emerged over the past 5 years focused on opportunities of small and mid-sized farmers and producers to access intermediary market channels. The 'best' business structure to aggregate, market and distribute local foods has yet to be identified. Rather, the best model seems to be what works best to meet the goals of the people involved. *Growing Local: Case Studies on Local Food Supply Chains* suggests that an existing business might choose to provide a fee for service. Buyers and sellers were asked about what services they might be willing to provide to support local food distribution in and outside of NNY. If no existing business is willing to expand their operations to conduct food hub-type activities, then it can be feasible to start a new business. The structure of the business will depend on the goals of the owner and its success will hinge on its competitive advantage in the market place. Bench marks are a tool to examine financial success.

Attitudes and interest in development of Northern NY food hubs

Producers' perspective

Ninety percent of both producers and buyers surveyed indicated there was a need for and NNY could benefit from "a business dedicated to aggregation, marketing, and distribution of locally produced products." One of the components of this study is to examine producer and that such a business to provide to garner support of the producers in the region.

Chart 20. Producers' level of interest in a food hub



	Not at all interested	Little interest	Neutral	Interested	Very interested
> $250K	1	0	2	6	3
$100k-250K	0	2	6	5	1
$25k-100K	7	1	6	11	7
< $25K	15	4	9	16	15

Chart 20 shows that approximately one-half of the producers were curious about and had interest in the concept of a food hub. Several expressed a need to know more about what a food hub would offer in prices and services. One half of those interested or very interested in a food hub were very small producers with gross sales less than $25,000. Three-quarters of those interested or very interested in the food hub had gross sales less than $100,000. Anecdotally, one producer said, "We are interested because we have little kids and off-farm jobs with no time to direct-market retail. We are also just beginning with plenty of flexibility to custom grow for larger buyers." Another said, "Need to grow more." And a third producer said, "Volume and wholesale are the only way I can go."

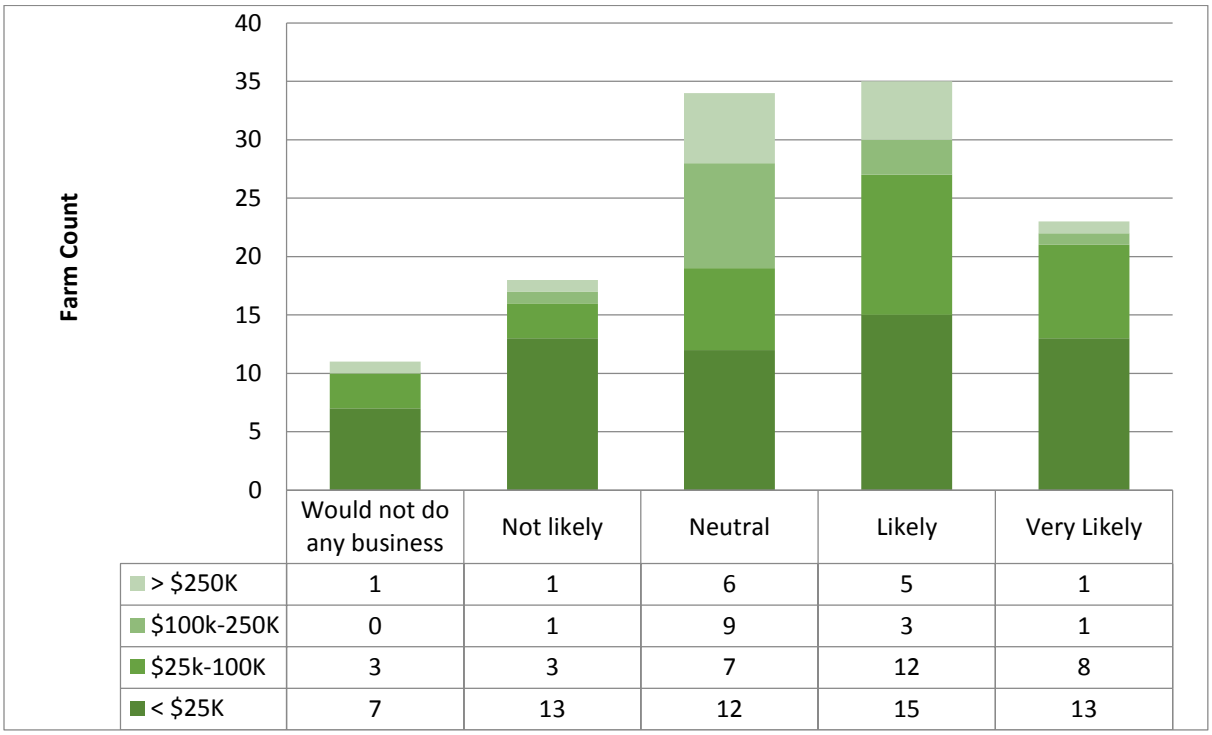
Half of the respondents had no desire to sell to a food hub. Several mentioned that they easily sold all of the products they produced into their current retail markets. Others mentioned that they had neither the time nor the size and scale to sell into a wholesale market channel. Preference for retail pricing was the most frequent answer given for not selling to a food hub.

Curiosity in the concept of a food hub and the opportunity to evaluate the early achievement of a food hub are reasons why producers maintain an interest in the concept of food hubs in NNY but remain uncommitted. NNY food hubs will have to be successful early on to instill confidence and attract additional producers and buyer.

The study considered all product categories. Most food hubs specialize in one product category rather than several categories. Each food category and product inside the category has special needs that must be addressed to maintain product quality. Fruits and vegetables need storage with differing temperatures. Some products are iced down. Some products need to be stored separately as they absorb odors from other products. A food hub that accommodated all these nuances would be extremely expensive. Even when a food hub makes the determination in which to specialize, the challenge becomes how long the business stays open (or not) year round and what other products might be sold to keep it in the marketplace.

Producers were asked about the likelihood of selling to a food hub if the barriers that they perceive in wholesale markets or their conditions to sell through a food hub were met.

Chart 21. Producers' likelihood of doing business with a food hub



	Would not do any business	Not likely	Neutral	Likely	Very Likely
> $250K	1	1	6	5	1
$100k-250K	0	1	9	3	1
$25k-100K	3	3	7	12	8
< $25K	7	13	12	15	13

Chart 21 shows that while larger scale producers were interested in the food hub, they were less likely to sell through the hub as they have established relationships with wholesale buyers. Almost half of the producers in the survey were likely to very likely to use the services of the food hub and many were small scale growers. One-quarter of the producers remained neutral in their likelihood to sell to the food hub.

Northern NY food hubs would provide a wholesale market channel through which small and mid-sized producers could access larger market channels. Eighty percent of respondents were concerned about price as many receive a retail price for product at present. Small scale producers have larger costs per unit of production and wholesale prices may not provide the needed margins to maintain profitability. Half the producers in the survey did not have additional product available to sell through a food hub. Half of the producers were also concerned about scaling up their output without a guaranteed sales

contract. Thirty percent of the farmers were concerned that new food hubs would compete for the same customer base.

Food hubs are successful when they meet the needs of both producers and buyers. One of the challenges to food hubs is to balance the required supply with the demand. Pre-season crop planning is one means to align the supply of product with the expected demand. Producers were asked about interest in pre-season crop planning and expectations on pricing. Slightly more than 50 percent of survey participants were interested in developing a pre-season plan. Below, Table 19 shows that few of the producers were interested in pre-season planning with the largest farms decidedly against the management tool. This is of particular concern as a best practice of cooperative-structured food hubs is to develop a pre-season growing plan and harvesting schedule for product the sold through the organization (Severson).

Table 19. Supply control and price setting

	Farms by sales				
	All Farms	<$25,000	$25,000 to $100,000	$100,001 to $250,000	> $250,000
Engage in pre-season crop planning	3.27	3.45	3.12	3.31	2.60
Do business on a consignment of commission basis	2.87	2.98	3.11	2.46	2.00
Do business on a direct purchase basis	**3.79**	3.72	4.03	3.57	3.40
Set prices on a contract basis	3.43	3.46	3.48	3.25	3.20
Price set based on spot market	2.94	3.02	2.88	2.91	2.50
Price some on contract and some on spot market	3.17	3.17	3.33	3.00	2.80

NOTE: Table values based on a Likert scale of 1= not interested, 2=little interest, 3=neutral, 4=interested, 5=very interested

The prices paid to the farmers and by the buyers need to be competitive in order that the hub is a preferred place to sell and purchase products, respectively. Eighty percent of all producers preferred that the food hub make outright purchase of product for resale. No other pricing system had traction. Anecdotally, some farmers reported a preference for a contract, especially when expanding production. For the most part buyers prefer not to contract for purchases, unless it is an extremely large purchase of product (Severson). Farmers reported little interest in contracting for price. Pooled pricing is a mechanism used by cooperatives. Products are procured and sold during a given time span with all funds going into the 'pool.' The selling price can change throughout the time span. Farmers receive payment calculated by the average per unit selling price minus the cost of handling times the volume of product they committed into the pool.

Buyers' perspective

Buyers were asked about their general interest in procuring product from a NNY food hub. Chart 22 shows that sixty percent indicated that they were likely to very likely to buy directly from the hub that purchases and aggregates local products.

The likelihood that a buyer would purchase product from a NNY food hub will be dependent on the services that the food hub can provide to address the challenges of delivering a consistent product in a timely manner at a price point fair to both the hub and to the buyers.

In summary, while producers and buyers expressed interest in purchasing local products through NNY food hubs, success of a food hub can only be achieved if sufficient quantity of a product can be procured at a price satisfactory to the farmer and meet the specifications and price point of the buyer.

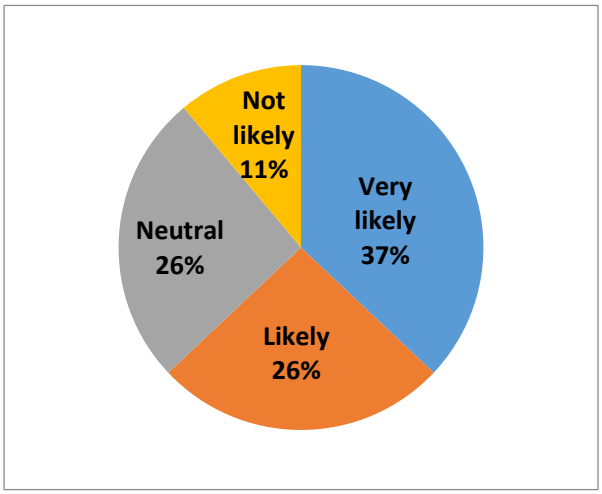


Chart 22. Buyers' interest in procuring product from a food hub

Fees for services rendered

One of the opportunities for food hub development is that existing service providers might expand their aggregation, marketing, and distribution activities. Producers and buyers were asked about the existing services that they might provide.

Producers' interest in fees for services

Table 20 below shows no particular interest on the part of producers in providing services. As noted earlier cost of equipment and access to labor are the largest barriers to success of these farms. Potentially farmers could come together to share equipment as a first step towards collective action to work together. Once trust was built and success was achieved they could choose to form a food hub to aggregate, market and distribute products collectively.

Table 20. Services provided by producers

	Farms by sales				
	All Farms	<$25,000	$25,000 to $100,000	$100,001 to $250,000	> $250,000
Cooling produce (to remove field heat) from nearby farms	1.72	1.63	1.77	1.77	1.80
Transport animals to USDA slaughter facility	1.98	2.04	2.00	1.64	1.56
Serving as drop off/storage site for product collected from nearby growers	2.00	1.96	2.35	1.67	1.64
Deliver product for other nearby farmers to food hub site	2.19	2.25	2.46	1.73	1.44
Provide temperature-controlled cold storage on my property	1.96	1.84	2.31	1.69	1.78
Sharing equipment with nearby farms	2.65	2.70	2.73	2.50	2.18
Coordinating labor with nearby farms	2.73	2.81	3.00	2.42	2.00
Providing processing services	2.16	2.02	2.42	2.17	2.20
Serve as drop off/storage site for supplies collectively purchased with surrounding growers	2.32	2.20	2.62	2.17	2.27

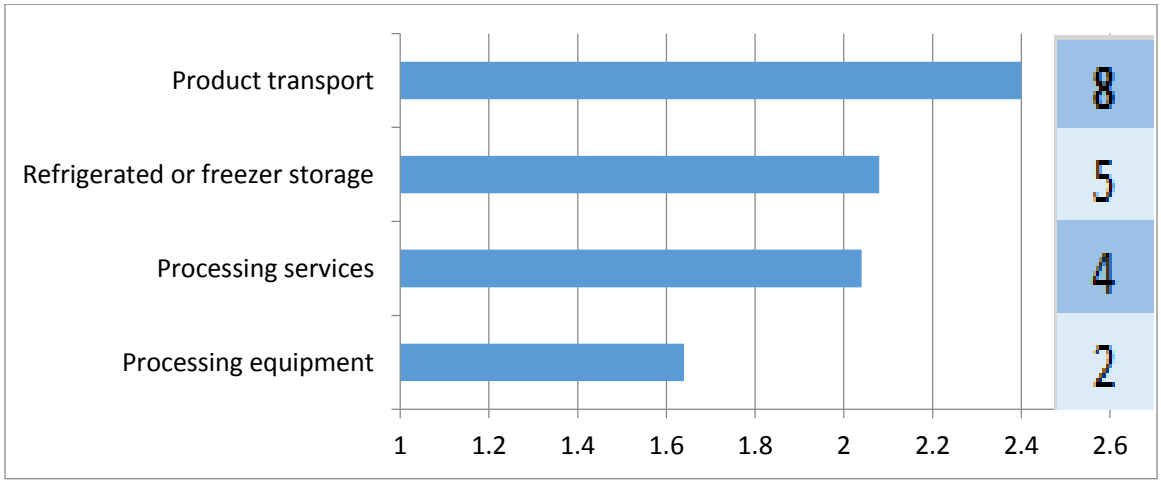
NOTE: Table values based on Likert scale of 1=not interested, 2=little interest 3= neutral, 4=interested, 5=very interested

Approximately 10 percent of producers were interested or very interested in providing services such as cooling or refrigerating produce, serving as a drop off site, or providing processing services.

Buyers' interest in fees for service

Buyers were also asked of their interest to provide transportation, storage and processing services. Similar to producers, there was little interest on the part of buyers to provide services. Some of the buyers did express interest in providing one or more services related to transportation, providing refrigerated or freezer storage and processing services. One-third of buyers (n=8) were interested or very interested in transporting product. Five indicated that they have available refrigerated or freezer space to store locally sourced products.

Chart 23. Buyers' interest in providing services for fee*



NOTE: Table values based on Likert scale of 1=not interested, 2=little interest 3= neutral, 4=interested, 5=very interested
*Numbers to right indicate those buyers who were interested or very interested

While few producers or buyers expressed an interest in providing services for fee, an important next step would be to contact those persons interested in providing services to ascertain interest and capacity to provide those services. As the survey was limited in the number of participants, there could be someone else with the interest to develop a food hub business. If no one is interested in expanding their current business to engage in food hub activities then a new business needs to be formed at a size and scale to meet the business goals of its owners as it buys and sells NNY products.

Business structure

Food hub businesses located in NNY could be organized in numerous ways. One person might see an opportunity for local foods business and choose to develop a sole proprietorship. Two or more individuals might join together and form a partnership. A group of people might come together to form a limited liability company, corporation or cooperative. The business structure chosen impacts how investments are made into the business, profit distribution, decision making, and personal liability of the owners. Producers and buyers were asked to weigh in on their interest in ownership and operations of a food hub business.

Producers' perspective

Table 21. Producers' interest in food hub ownership and investment

	Farms by sales				
	All Farms	<$25,000	$25,000 to $100,000	$100,001 to $250,000	> $250,000
Become owner and/or operator of a food hub	2.10	2.22	2.15	1.83	1.80
Become an investor in a food hub	2.41	2.40	2.57	2.58	1.90
Become a member of a grower-owned co-op	**3.13**	**3.12**	**3.34**	**3.23**	2.60
Be on the management team of the food hub	2.54	2.68	2.71	2.15	2.00
Be part of the workforce of a food hub	2.38	2.64	2.37	1.92	1.70
Provide services on contractual basis for food hub	2.64	2.74	2.56	2.77	2.22

NOTE: Table values based on a Likert scale of 1= not interested, 2=little interest, 3=neutral, 4=interested, 5=very interested

Overall, the producers surveyed had little interest in establishing a food hub. Table 21 above shows that farms with sales less than $100,000 were more interested in a food hub than those farms greater than $100,000. A cooperative-structured food hub had slightly more traction, than say becoming an investor or shareholder in a corporate-owned food hub. Cooperative-structured businesses have been a means by which farmers have come together based on a shared need not met in the market place. The table above implies that there is very little energy on the part of producers surveyed to be owners of a food hub. However, the table above does not reflect that 16 producers are interested to very interested in becoming an owner or operator of a food hub; 30 producers are interested in investing in a food hub; and 49 producers are interested in membership of a cooperative-structured business.

A food hub will be more successful early on and build the confidence of its suppliers when it addresses the concerns and needs of producers. Producers were asked to provide their perspective about a pre-selected list of potential concerns.

Chart 24. Producer concerns

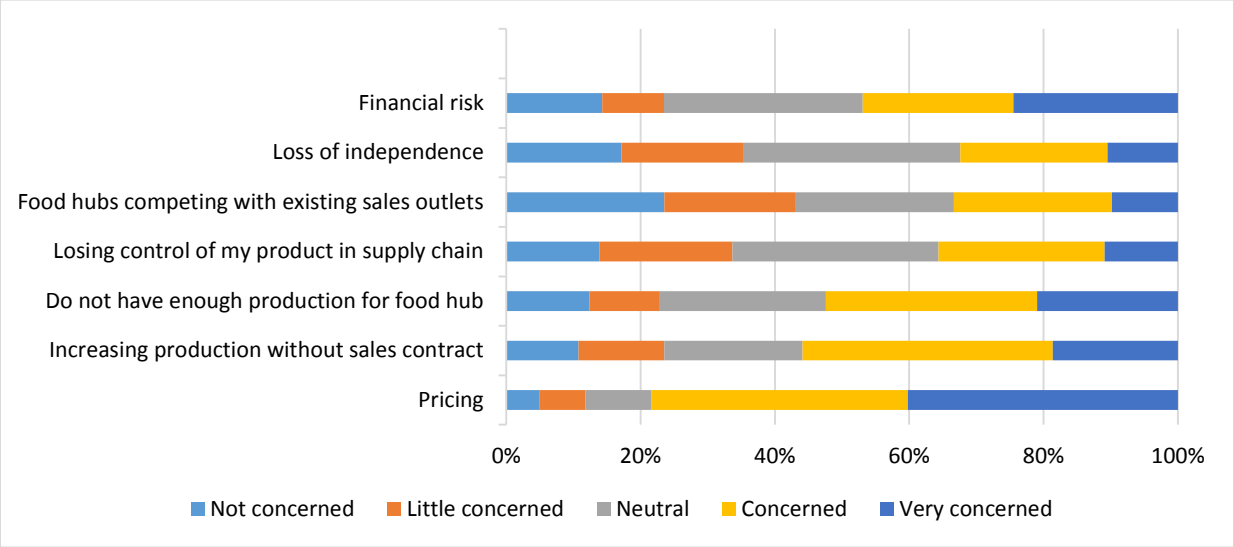
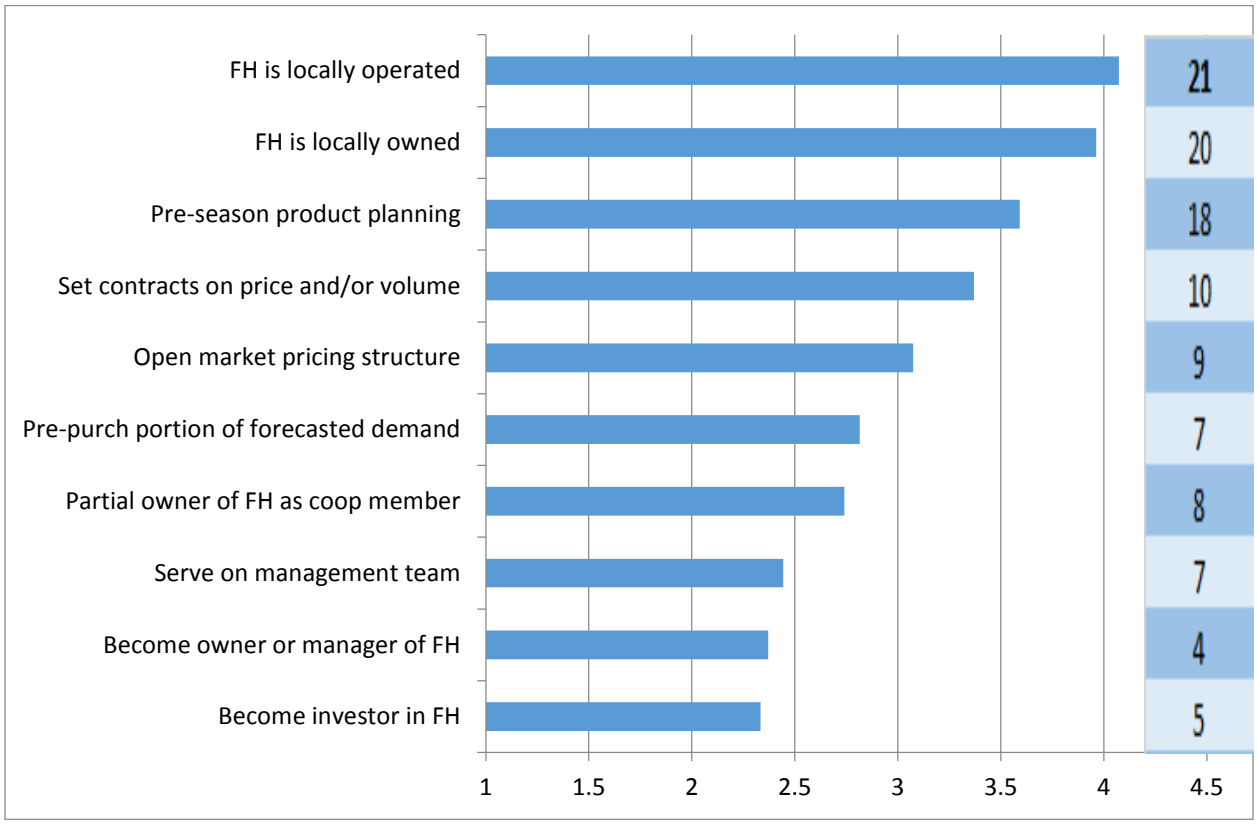


Chart 24 shows that producers are most concerned about the pricing that they expect to receive from the food hub. A food hub is a wholesale market channel and would result in lower prices paid, compared to selling directly to consumers. Many of the producers currently receive retail prices and sell mostly direct to consumers. They prefer not to receive wholesale prices from selling into wholesale markets. Costs of production are high and over 50 percent were concerned that without a sales contract there is no 'guarantee' that the product would be sold. Producers are also concerned about the challenge of scaling up production. They lack confidence that the hub would pay a price that covers costs of production and provides sufficient profitability to the business. While of slightly lesser concern, many of the producers in the area have established relationships with buyers and do want an additional competitor in the marketplace.

Buyers' perspective on food hub ownership and contracts

Chart 25. Buyers' interest in food hub ownership and investment*



Note: Likert scale: 1 is no interest, 2 is little interest, 3 neutral, 4 interested, 5 very interested
*The numbers to the right indicate the number of buyers who are interested or very interested

A preponderance of the buyers believe that the food hub should be locally owned and operated. Local business ownership builds credibility with the buyers that the food they purchase through the hub is sourced from NNY producers. As availability of local products is challenged by the growing season, buyers would be interested in informal commitment plans to purchase product, if they could expect that the product would be available for a longer duration. As with most of the food industry, relationships between buyers and sellers is critical and there are few contracts between them stipulating product, quantity, or price. Trust and reputation are critical to the buyer-seller relationship in the food business (Severson). Similar to producers there was little desire to own, manage, or invest in a food hub.

Producers and buyers surveyed share similar attitudes in their interest in owning, managing and investing in a NNY food hub. *Growing Local: Case Studies in Local Food Supply Chains* developed case studies of efforts local apples, blueberries, spring mix, beef, and dairy businesses working to access mainstream market channels (King). The case studies demonstrated that entrepreneurial business owners identified and acted upon an opportunity to market their products into the mainstream supply chain. The authors noted that cooperatives offer economic advantages for producers to access mainstream market channels. However producers in many circumstances were not willing to give up their independence. More troubling was that leadership on the part of directors and managers was not always evident nor was the commitment on the part of cooperative member-owners to provide the

needed product. At the same time, one cannot overlook the power of a small group of highly-motivated individuals to work together to achieve a common goal. Small clusters of farmers could informally work together to aggregate product to meet the needs of local buyers. The challenge of such arrangements is that without the corporate veil, each producer could be personally liable.

Food hub business structure

Food hubs can operate under a number of different business structures. There is no one model that works best. The decision of which structure to operate will depend on the goals of the individuals involved and the needs to be addressed in Northern New York. A food hub will need to develop a business that builds credibility with producers, buyers, and investors including commercial lending sources. It will need to establish fees and markups to generate appropriate profit margins that make it competitive in the market place and provide business viability.

Business organizations consist of two types – for profit and not-for-profit. Note, not-for-profit does not mean that a business does not seek profit or is not profitable, rather the business is organized to serve a social, community or public need. Benchmarks are one tool that can be used to measure the feasibility of a business. Several benchmarking studies have been conducted by the National Good Food Network (NGFN) through the Wallace Center at Winrock International. They indicate that approximately 38 percent of food hubs classify themselves as non-profit, 36 percent as for-profit businesses, 20 percent as cooperatives, 4 percent as government owned, and 2 percent as informal collaborations (Fischer).

The most successful food hubs tended to be for-profit or cooperative in structure, have been in operation for over 10 years, and worked with a large number of producers (Fischer). Efficiency ratios were calculated on the 75 food cooperatives able to itemize expenses and revenue. Efficiency ratios measure the proportion of total expenses to total revenue. Operations with an efficiency ratio of less than 1.00 have revenues that exceed expenses, while operations with an efficiency ratio greater than 1.00 have expenses that exceed revenues. The Survey reported that the average efficiency ratio for all food hubs was 1.07 (Fischer). Tables 22 and 23 show the business efficiency ratios by business structure and years of operation. Ratios are a means to test proposed budgets and financial statements that would be included in future feasibility analyses. They are a means to monitor progress through time.

Table 22. Business efficiency ratios by business structure

	No. of food hubs	Average	Median	Range
All hubs	75	1.09	1.00	0.04 – 6.79
Non-profits	29	1.20	1.00	0.04 – 6.79
Cooperatives	12	0.94	1.00	0.11 – 1.55
For-profits	34	1.06	1.00	0.33 – 3.53

(Source: Findings of the 2013 National Food Hub Survey, Fischer)

Table 23. Business efficiency ratios by years in operation

	No. of food hubs	Average	Median	Range
All hubs	77	1.09	1.00	0.04 – 6.79
0 – 2 years	24	1.14	1.00	0.11 – 4.41
3 – 5 years	24	1.03	1.00	0.04 – 3.53
6 – 10 years	8	1.68	1.05	0.29 – 6.79
11 – 15 years	7	0.89	1.00	0.09 – 1.10
16 – 20 years	4	0.82	0.96	0.33 – 1.01
Over 20 years	10	0.74	0.94	0.17 – 1.00

(Source: Findings of the 2013 National Food Hub Survey, Fischer)

Another benchmarking report, the *Food Hub Benchmarking Study, Report of Findings 2013* examined the financial statements of 15 food hubs for 2012 and 2013. The average age of the hubs was 11 years old. The report noted the following:

- 73% of food hubs took ownership of the product they handled
- Of total revenue – 84 percent came from product sales, 9 percent from grants and contributions and 6 percent from other enterprises
- Net worth was 57 percent
- Mark-up multiple was 1.24

Averages do not necessarily provide the most accurate description of data. The report separated the financial data of the 15 hubs by averaging the lowest third and the highest third of various financial parameters. Table 24 below shows the wide array of financial performance. The information is provided as a means to create 'what if' scenarios for NNY food hubs.

Table 24. Selected economic performance measures by percentiles

	33rd percentile	Median	67th percentile	Average
Net margin	1%	5%	14%	-3%
Gross margin	24%	30%	45%	21%
Total sales	$824,573	$1,105,579	$1,460,148	$1,653,780
Cost of goods sold	$409,333	$626,492	$918,690	$1,260,780
Total overhead costs	$167,072	$278,889	$624,632	$444,533

Source: Food Hub Benchmarking Study, Report of Findings 2013

Table 25. Profit and loss

Income statement	2013 Benchmark (n=48)	2013 Top 25%	2012 (n=18)
Revenue	100.00%	100.00%	100.00%
(Less) Cost of goods	71.95	69.41	67.63
(Less) Cost of sales	13.56	14.51	11.04
(Equals) Gross margin	14.49	16.09	21.33
(Less) Overhead costs	16.28	12.32	24.29
(Equals) Net margin or profit	-1.79%	3.76%	-2.99%

Source: Food Hub Benchmarking Study, Report of Findings 2013

For profit businesses

A for-profit business is developed for the purposes of generating profit and return on investment to its owners. The type of business organization chosen by the owners is dependent on the owners' goals and concerns about personal liability, residual ownership rights, profit distribution, IRS tax preferences, business continuity, and access to capital. It is important that business owners have experience and understanding of the food industry. It is important that knowledgeable with experience are hired and compensated at industry levels. Whether for-profit or not-for-profit, it is important to recognize that most startup businesses will need sufficient operating capital early on to pay for product, payroll, and overhead expenses. As noted in Table 23 above, most food hub businesses did not consistently make a profit until they had been in business for 10 years. A goal for hub organizers is to be profitable in 3 to 5 years.

Table 25 above shows that margins tend to be slim. Larger hubs can spread overhead costs over more units to maintain margins compared to smaller hubs. Some food hubs automatically tack on a surcharge to the producer and/or the buyer for providing their services. If a food hub in NNY chooses to operate seasonally, it needs to handle sufficient volume while in operation to cover overhead costs incurred year round.

Sufficient numbers of NNY producers selling adequate amounts and product to meet the needs of customers buying through the food hub will be necessary to ensure long term viability of the business. The *Counting Values Food Hub Financial Benchmarking Report* was released in 2015 (Fisk). The report summarizes the analysis of 48 of 300 food hubs doing business in the United States. This is a follow up to a similar study released in 2013 utilizing 2011/12 financial statements of 18 food hubs. The report further defines a food hub. Philosophically, these food hubs strive to bring good food (food products and practices) that is healthy for the body, green for the planet, fair for producers and workers, and affordable to all." Their beliefs are incorporated into the foods they sell, their marketing efforts and the buyers they serve. These characteristics separate it from the commodity market. Financial solvency is critical to the continuing operations of food hubs.

The report noted the following:

Profitability:

- Highest performing 25 percent had a 4 percent profit compared to the average of negative 2 percent.
- Those with sales greater than $1.5 million averaged profits of 2 percent
- Food hubs in operation for 5 to 10 years had a 1 percent profit
- For-profit food hubs averaged 1 percent profit compared to non-profit food hubs that averaged minus-7 percent profit before accounting for grant income or contributions.

Efficiencies:

- The top 25 percent 4 percent profit through 3 percent lower costs of goods sold and through higher labor productivity. Labor costs were 39 percent higher but those workers outperformed their counterparts by 56 percent (sales per worker equivalent).

Not-for-profit businesses

Not-for-profit organizations are established to pursue a public purpose and are accountable to a board of directors. Non-profits can be useful to explore an innovative idea and as a result they may take on more risk than a for-profit business. They may attract funding (funds not generated by business activities) that allows them to subsidize certain functions, which may impact and even harm for-profit businesses providing similar services and competing for the same customers and producers. Non-profits develop in two different ways. For example, a non-profit concerned about access to healthy foods or food security could engage in hub activities (rent refrigerated space, hire staff, etc.) bringing buyers together for the purpose of providing fruits and vegetables to at-risk neighborhoods. They develop an additional enterprise to benefit the public good. A second scenario is that a group of people desire to support new and beginning farmers that have challenges in accessing wholesale markets. They develop a food hub with the intention of maximizing prices paid to farmers.

Non-profits need to make sure that the mission and core values of their organization supports food hub activities and that they have access to the necessary expertise, leadership and financial resources. Input from farmers and producers is important when developing a non-profit food hub. Non-profits working with local farmers in local communities to provide product to local buyers reflects the unique culture, conditions and infrastructure of any given community. Revenue for the non-profit food hub comes from transaction fees charged to producers and buyers, fund raising activities, donations, and grants. The board of directors of the non-profit must have familiarity with the food system in order to make decisions in the best interest of the hub. They must also have the capability and resources necessary to hire competent management. More information about the pros and cons of various business structures can be found in Appendix F (Phases & Factors of Business Structures).

Forming a group-action business

A group of individuals can come together to form a business – for profit or not-for-profit. Early on it maybe some informal collaborations – sharing space at a farmer's market, trucking cattle from nearby farmers to processing facilities, etc. These informal arrangements build trust of the collaborators and insights into what people value, their goals, attitudes regarding risk, ways of acting, etc. Tipping points can arise as collaborations expand. Examples of tipping points include the need for formal contractual arrangements, when insurance and risk become a concern and when property should be owned together. Group action businesses can also be formed when a group of people see that by working together they can achieve a common goal. Usually this results in some 'economies of scale' where, for example, the group aggregates a sufficient volume of product to access a mainstream market channel or decides to form a plan to market products from a specific area. Group action businesses, whether a cooperative or another type of organization require a core group of leaders to build consensus about the potential of the idea, secure the commitment from those who would participate, finalize the business through creating and adopting legal agreements filed with the state, and setting up a system of financial accounts.

The early leaders can be challenged by producers and buyers who take a 'wait and see' attitude about the success of the business. Leaders need to develop a business plan to determine what is financially feasible. Care should be given that excessive promises are not made as a means to secure commitment. The business plan should also include realistic estimations of commissions that might be charged, mark ups, handling fees, equity requirements, etc.

The survey of NNY producers indicated that most farmers were not interested in serving in a leadership role of a cooperative-structured business. As the survey was completed by only a few producers, for a cooperative or other group-action business to be successful, it will need strong leadership. The survey also indicated that many of the producers would be taking a 'wait and see attitude' before they were willing to commit. Sufficient volumes of product need to be committed to the food hub in order for it to be financially viable. One-third of the buyers indicated that they would be interested in ownership of a food hub through a cooperative-structured business. Perhaps a buyers-owned food hub would have more traction than a producer-owned food hub. Buyers could aggregate orders and purchase product at volume discount year round. This would reduce the issue of seasonality. The buyer-owned food hub could source local product during the growing season and source product outside of NNY the remainder of the year.

All businesses work through a life cycle. Those that are destined to be successful will eventually peak and plateau. When the plateau is reached, revitalization strategies need to be identified and implemented for continued financial viability. Figure 6 shows the lifecycle of a cooperative. This cycle is similar for all business structures. The first phase is an exploratory phase when an individual or group of individuals determine that a food hub concept has traction and is worthy of additional time and investment to work through forming and starting the business, completed in Phase 2, the Organizational Design phase. Phases 1 and 2 together may take up to 5 years to complete. The health of the business might be challenged as adjustments are made to fine-tune the business processes to build competitive advantage. In Phase 3 the business in running, early glitches experienced in the start-up phase have been overcome and the business is expanding. Managers and leaders of the business need to recognize when sales seem to plateau or there are changes in the marketplace that reduce the vitality of the business. New strategies need to be adopted to revitalize the business and start again. If not, the business is doomed to fail.

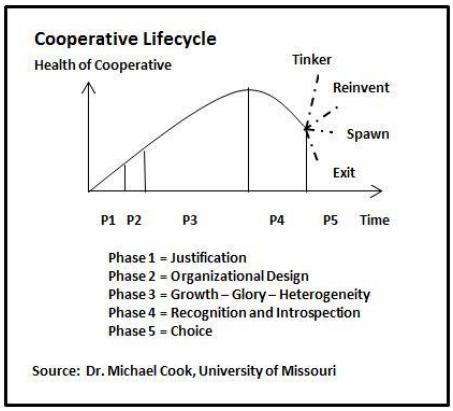


Figure 6. Cooperative lifecycle

Labor

The skills of the persons working for a food hub will be critical to the success of the venture. Labor costs are also one of the largest costs of a food hub. For managers of a hub, experience in the food industry is critical to the success of the organization. Experienced managers come with existing relationships with the companies to which they would sell product. Cooperatives and non-profit board of directors must have a clear understanding of the business and hire and hold accountable the general manager. Besides the general manager, other staffing functions can include sales and procurement. The procurement staff needs to be assertive to make sure product is delivered to the food hub and the sales staff needs to be aggressive in getting the product sold.

If the food hub has a storage warehouse and truck fleet, competent people need to be hired to safely move product into and out of the facility. Drivers need to be properly licensed to drive trucks. Truck drivers employed by the food hub must be personable, as they can be the 'face' of the business. They may need an "assistant" to help make deliveries, especially for a high number of stops in metropolitan areas. Many employees are cross-trained to be able to fill in the gaps, especially during the peak of the

harvest season. If the food hub handles fruits and vegetables, employees should be trained to inspect produce as it enters and leaves the warehouse and empowered to reject produce not meeting quality requirements. No matter what the product, they should understand their role in product handling and food safety protocols to maintain product quality.

Some non-profit food hubs and early-start up food hubs may rely on volunteers as a labor force. It is illegal for volunteers to 'work' at a for-profit business. Volunteers require training similar to paid workers. Food hub operators need to honestly evaluate whether or not there is a sufficient pool of dedicated volunteers to provide the necessary labor to support the operations. Depending on the size and scale of the food hub, the number of days the food hub is open, and the product handled, the business may have some full time and some seasonal employees. Food hub operators need to determine if there is sufficient labor available to fill seasonal or temporary positions.

The *Food Hub Benchmarking Study, Report of Findings 2013* found that the fifteen food hubs they surveyed had 5.2 full time equivalents. Table 26 shows the time devoted to various functions of the food hub and is broken out as follows:

Table 26. Labor expenses in full time equivalents

Employee role	Paid FTE
Production/growing	0.5
Sales	0.9
Delivery/distribution	2.1
Management	0.7
Office/IT	0.8
Marketing	0.2
Total	**5.2**
Number of W-2s issued	10

Source: Food Hub Benchmarking Study, Report of Findings 2013

The study also found that labor costs as a percent of sales was 17.4 percent. Labor costs per FTE was $48,867 and sales per worker equivalent was $286,788.

Neither the NNY buyers nor producers indicated that they were particularly interested in providing a staffing function for food hubs located in the area. Organizers of the food hub need to identify qualified people in NNY who would be willing to work for the food hub. They should seek out persons and agencies who could provide training relevant to food hub workers. They can connect with area colleges, Cornell Cooperative Extension associations, and job training programs.

Food hub activities

Aggregation

The Food Hub Benchmarking Study, Report on Findings 2013 examined the efforts of 15 food hubs located throughout the United States. The report found the average number of vendors selling to a food hub was 79 with 57% being farmers-producers. Food hubs were asked what percent of product was sourced from their main vendor. The average was 16 percent. Purchases from the largest 10 vendors

was 50% of total product marketed. Approximately one-third of the food hubs required their vendors to have food safety certifications. Average days in operation was 301 days. Average sourcing distance was 521 miles. Another study of 18 food hubs found the number of vendors from which product was sourced were located between 15 to 400 miles from the hub with the average being 75 miles and the median being 41 (Fischer). And yet another study found the average distance product was sourced was 385 miles (Fisk). Two-thirds of NNY survey producers traveled less than 100 miles to sell product as most of the product was sold at the farm or at the local farm market (Chart 10). Location of a food hub has to balance the amount of product that can be procured from any given area based on the distance producers are willing to travel and the delivery costs they are willing to bear against the costs to transport the product to buyers. Collection points could be established where farms would aggregate product at one point to be trucked to the food hub. Some producers who participated in the study were willing to provide such a service. Two concerns must be addressed when producers provide services for the main food hub. First, the producer providing the aggregation point or trucking service must have the storage facilities to maintain the quality of product before it moves to the main food hub. Second, the product must meet and maintain quality standards so that when it arrives at the food hub it will not be rejected.

The seasonality of local foods sold through a food hub needs to be considered when locating a food hub. Several options emerge. The growing season for local fruits and vegetables in NNY is limited. It can be extended through greenhouse operations and high-season tunnels. Most food hubs deal with fruits and vegetables. Operators of a food hub have to decide if the hub will operate only when local produce can be procured. If the food hub is to focus on produce only, then the food hub owner may choose to stay in the market place year round by sourcing similar products from outside the region. Another option is that produce farmers team up with a distributor in the area who desires to carry NNY source-identified produce. Hubs that operate in the short season, tend to not be profitable unless they handle high volumes of product in the growing season.

A food hub may choose to sell a diversity of products to remain in the marketplace. One scenario would be to create a virtual food hub where farmers list their products for sale via the Internet and customers make purchases of those products with the hub responsible for the logistics in transportation between the producers and the buyers and billing and collection services. In this scenario, the hub may or may not take ownership of the product. The producer can store the product at desirable temperatures and the hub does not have investment in warehouse and storage facilities. Surveyed producers preferred “bricks and mortar” facilities to a virtual food hub.

Marketing and sales

Marketing locally sourced products from NNY presents many opportunities. Many of the buyers surveyed indicated a need to access more locally-sourced products. One national food hub study indicated that slightly over 50 percent of the food customers were located within 50 miles of the hub with an additional 21 percent located within 100 miles of the food hub. Restaurants and small grocery stores provide opportunities for additional sales. The buyers’ survey showed that persons procuring local products had some latitude in the price and quantity of local products they were willing to purchase. The concern on the part of the buyers is that, while they are willing to pay higher prices for locally-sourced product, they will not pay significantly higher prices. Both producers and buyers need to manage costs and the subsequent margins in order to maintain business viability.

NNY is also near large metropolitan areas, i.e. New York City, Boston, Montreal, and Ottawa. The NYS Department of Agriculture and Markets has employees tasked with forging relationships with upstate producers and downstate consumers. Operators of NNY food hubs could connect with NYS DAM staff to build markets for NNY-sourced products. One of the opportunities for NNY is to consider how the area might be branded based on locality. Some counties might consider branding themselves based on proximity to the St. Lawrence River, or the Adirondacks or Lake Champlain.

Customers

National food hub studies show that food hubs have a variety of buyers who completed the NNY Buyers' Survey. The study of 82 food hubs found that almost 60 percent of the food hubs derived one-third of their sales from restaurants and caterers. Thirty percent of food hubs supported CSAs where they derived half of their total gross sales. The hubs' own retail outlets were also major sources of gross sales. These food hubs were located nearer to large metropolitan areas. Corner stores and small grocery stores were customers of 40 percent of food hubs, but total gross sales were only 14 percent on average of the total sales. Food consumer cooperatives are interested in selling locally sourced products. About one-quarter of food hubs sold to food co-ops and derived approximately one-quarter of their gross sales. About 25 percent of the food hubs were selling to schools, hospitals, and colleges. However gross sales from these institutional buyers was less than 10 percent (Fischer).

Food hubs are actively seeking out ways to service institutional buyers. NNY has similar institutional buyers. Pricing is extremely competitive. The NYS Correctional System is interested in purchasing product from local farmers. The food hub will have to follow the procurement requirements of the system. Produce must have food safety certification. Fischer's study also suggests that food hubs viewed their greatest growth potential in selling to restaurants and caterers, food cooperatives and buyers' clubs and corner and small grocery stores. Food hubs did see opportunities in selling to distributors and processors. The Sysco broadline facility located near Syracuse, NY could be a potential buyer for NNY goods. A NNY produce food hub could become a member of Upstate New York Growers and Packers. Product could be sold from the area through the cooperative and delivered via the Route 12 corridor. It is important that sufficient supplies be available to meet the demands of distributors and processors.

The *Food Hub Benchmarking Study, 2013* found the 15 hubs surveyed, averaged 326 customers with the product sales to the largest customers averaged 19 percent and the percent of sales to the largest 10 customers being 64 percent. Failure on the part of these large customers to pay can put the food hub at risk. Close customer relations is essential as is "robust credit policies to assure quick payment."

Channel selection

National food hub studies demonstrate the breadth of customers with the desire to purchase locally-sourced product. Under most circumstances food hubs choose one or two types of wholesale markets in which to sell. Hub operators need to align the buyers' needs with the producers' products in terms of quality, quantity and availability.

The interest on the part of consumers in purchasing local foods and developing a relationship with the farmer has led to a significant increase in the number of marketing efforts through farm stands, U-pick operations, farmers' markets and CSAs, etc. Recent USDA research suggests that these direct marketing activities have peaked and for farmers to continue to expand their businesses they will need to seek out

mainstream market channels (Low). Time constraints of consumers and their need for convenience makes grocery stores an appropriate market channel to sell locally-sourced identified products (King).

NNY Consumer perspective on preference for locally-sourced foods

Northern NY residents were also surveyed about their attitudes in purchasing locally-sourced products (Appendix J). The assessment was also a convenience survey conducted by Extension educators within the 6 counties of NNY. Two hundred fifty-seven people completed the survey with three-quarters of them being female. The majority of the consumers queried were from Clinton and Essex Counties and 60 percent were between 50 and 69 years old (Charts 26 &27). Ninety percent of consumers indicated that they purchased locally-sourced products once per month. Similar to the commercial buyers queried, most consumers purchased fruits, vegetables, and eggs. Few buyers reported purchasing maple or honey products while 40 percent of consumers reported purchasing maple products and a similar number reported purchasing beef, baked goods and prepared foods.

Chart 26. Number of consumers surveyed by county

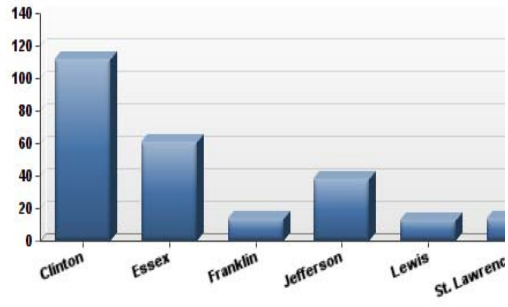


Chart 27. Number of consumers surveyed by age

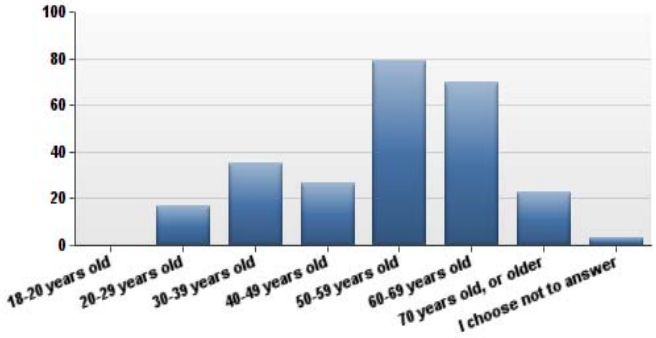


Table 27. Northern New York consumer attitudes regarding local foods by percent

	Strongly disagree	Disagree	No opinion	Agree	Strongly agree
Purchasing locally grown products is important to me.	0.8	0.0	3.1	35.0	45.3
I purchase locally grown products at least once per month.	0.8	2.8	3.9	**33.9**	**58.3**
Having a relationship with the farmer is important to me.	1.2	3.1	24.4	31.9	39.4
I receive good value for the price I pay for local products.	0.8	1.2	9.4	**46.5**	**42.1**
I support the local economy by purchasing local products.	0.8	0.0	3.1	**37.4**	**58.7**
Purchasing locally grown products is good for the environment.	1.2	1.2	6.7	**28.7**	**62.2**
I find easy access to locally grown products in the summer.	0.4	0.8	2.8	**34.3**	**61.8**
I find easy access to locally grown products in the winter.	**8.3**	**41.7**	25.6	20.1	4.3

Numerous studies have been conducted regarding consumer attitudes associated with purchasing locally sourced products. These studies show purchasing local products is important to consumers. They feel local products to be fresher, taste better, to be of higher quality. They feel their purchases support local farmers, benefit the community, and are good for the environment.

Table 27 shows that NNY consumers have attitudes similar to others living throughout the United States. Over 90 percent of those consumers surveyed agree to strongly agree that they received good value for the price they pay, that their purchases helped to support the locally economy and that buying locally grown is good for the environment. One belief held by consumers is that locally sourced products brought to a local market and purchased by local consumers will result in less food miles traveled and a lower carbon foot print. This is not always the case. Other consumers confuse local with organic and believe that local foods are produced without crop protectants, commercial fertilizers, antibiotics, etc. Having a relationship with a farmers was not necessarily important to one-quarter of NNY consumers surveyed. Similar to the buyers, consumers found it difficult to source local products outside of the growing season. Ten percent of those surveyed sourced most of their local products from their own gardens or the gardens of family, neighbors, and friends. Purchasing local products supplemented the products they already grew.

Adirondack Harvest is an important program promoting locally sourced products. It is a means to connect local consumers with local producers. The program is similar to other programs such as Pure Catskills supported by the New York City Watershed Agriculture Council and Local Heroes Program based in South Deerfield, MA. Examining the efforts of similar programs is one way to determine if there is a need to modify Adirondack Harvest or to document that the program is meeting its goals. Adirondack Harvest could be a leadership tool to develop a food hub in the area.

Distribution

Infrastructure needed to support food hub activities is highly dependent on the services provided by the business. Analysis of 15 food hubs included in the *Food Hub Benchmarking Study, Report of Findings 2013* showed that a hub with sales over $1.5 million, open 300 days had warehousing space of 9,000 square feet and two loading docks. Food hubs that physically handle the product usually conduct operations out of a medium-sized warehouse between 5,000 and 10,000 square feet.

Facility amenities are highly dependent on the products it sells. Most food hubs specialize in certain products. The more products a hub offers, the greater the need for a diversity of storage needs. Distribution facilities need separate storage areas to control for temperature and humidity of products in storage at any given time. The facility should have sufficient space to maintain the cold chain. The facility should be located in an area that can meet the needs of the business as the food hub grows. Additional warehouse space and equipment is necessary, especially if the hub operators decide to provide additional services such as light processing or freezing (Matson 2015).

Food hubs that provide fewer services require less infrastructure. Web-based food hubs provide a mechanism via the Internet for products to be purchased. They may coordinate the delivery between the producer and the buyer. They may or may not take possession of the product or utilize a "just in time" approach that minimizes the need for storage and truck fleet (Matson 2015).

The physical delivery of product will be dependent on trucks. Trucks need to be well maintained to make delivery in a timely manner. Box trucks are appropriate for local deliveries. In some cases product may need to move long distances requiring the use of a tractor trailer. Hub operators will need to decide whether or not they will own a truck fleet, rent a truck, or hire a truck with driver. Transportation costs must be carefully calculated as they are one of the largest costs to a food hub.

CONCLUSION

This report examined the interest and capacity to source locally-sourced foods from Northern New York farms. This is by no means an exhaustive study as only 125 producers out of 3,900 farmers completed the questionnaire. Some of the 3,900 farmers are strictly interested in producing for the commodity market. Most of the small and beginning farmers located in the county are interested in providing product to the food hub. Buyers are also interested in purchasing locally-sourced product through the food hub if product is priced at reasonable levels and if consistent quality and quantities of product can be delivered at the desired time. Restaurants and caterers are especially interested in purchasing local products.

There is no specific recommendation regarding the type of food hub that would be most successful in NNY. Rather this report focuses on some of the potential prospects that could develop within the region if someone was to identify an economic opportunity to source and supply local products. Many of the large farms have established relationships with larger retailers. They do not see the need for a food hub. Small and mid-sized farms tend to be the largest number of suppliers interested in providing product. Concerns were identified about the cost of scaling up production relative to the wholesale prices they would receive. Buyers require high quality, consistent quantity delivered at a scheduled time at a reasonable price point.

Collaborating with other resources in the area can reduce capital investments in food hubs. Some farmers and buyers indicated that they had interest in providing some of the services offered by a hub. If a new enterprise was to be established, it is appropriate to see how existing NNY resources might be used such as a local truck fleet or leased warehouse facility.

Human resources is a critical element for success. It is appropriate to build a team of advisors such as Cornell Cooperative Extension educators, retired executives from SCORE, bankers, etc. The food hub manager should have background and experience in the procurement and sale of food products. That expertise should be properly financially rewarded. If the hub is run by a non-profit or cooperative, the board of directors needs to have familiarity with the farm and food system and hold the manager accountable. Many hubs rely on volunteers in the early part of their development, a plan should be put in place to transition to a paid staff. Opportunity and need exist to establish and develop one or more food hubs in NNY.

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APPENDIX A. SPECIALTY CROPS GROWN IN NORTHERN NEW YORK

FRUIT & VEGETABLES		Clinton	Essex	Franklin	Jefferson	Lewis	St. Lawrence	Total
Vegetables harvested	Farms	45	33	48	60	29	122	337
	Acres	511	210	1,063	315	76	484	2,659
Vegetables harvested for processing	Farms	7	9	4	12	5	14	51
	Acres	5	10	(D)	41	2	10	68
Vegetables harvested for fresh market	Farms	45	33	47	59	29	121	334
	Acres	506	200	(D)	41	2	10	759
Total fruit	Farms	26	14	23	51	7	50	171
	Acres	(D)	(D)	84	287	41	(D)	412
Bearing age acres	Farms	25	8	15	31	1	28	108
	Acres	2,422	(D)	59	50	(D)	155	2,686
Non-bearing age acres	Farms	11	8	48	36	7	35	145
	Acres	(D)	14	25	237	(D)	(D)	276

Source: 2012 U. S. Census of Agriculture, New York State Table 37

HONEY		Clinton	Essex	Franklin	Jefferson	Lewis	St. Lawrence	Total
Colonies	Farms	14	12	11	17	20	33	107
	Number	184	44	112	1,540	88	692	2,660
Pounds collected	Farms	10	5	7	9	14	22	67
	Number	9,273	202	5,500	98,138	3,127	32,976	149,216
Sales $000	Farms	8	3	7	7	12	18	55
	Number	20	(Z)	12	194	6	82	314
MAPLE	Farms	67	27	47	41	108	92	382
	Taps	343,464	41,768	70,610	45,666	5,493	94,361	601,362
	Gallons	46,642	7,575	9,879	5,493	27,465	15,876	112,930

Source: 2012 U. S. Census of Agriculture, New York State, Table 37

APPENDIX B. OTHER CROPS

PROTEIN		Clinton	Essex	Franklin	Jefferson	Lewis	St. Lawrence	Total
Beef cows	Farms	128	61	155	192	78	318	932
	Numbers	1,354	853	1,762	2,935	1,102	4,071	12,077
Hogs & pigs sold	Farms	31	21	53	46	37	88	276
	Numbers	525	321	881	658	558	2,042	4,985
Sheep & lamb sold	Farms	10	10	20	18	10	49	117
	Numbers	104	65	1,558	759	90	819	3,395
Milk goats (inventory)	Farms	14	11	14	10	5	51	105
	Numbers	112	(D)	108	26	313	360	919
Meat goats sold	Farms	10	7	16	16	9	18	76
	Numbers	(D)	59	59	82	79	121	400
Layers in inventory	Farms	72	63	118	126	81	232	692
	Numbers	(D)	3,000	4,555	(D)	2,229	6,489	16,273
Broilers/meat chickens sold	Farms	17	16	26	17	11	29	116
	Numbers	1,851	3,203	1,268	793	1,497	4,668	13,280
Turkeys sold	Farms	6	5	9	7	6	7	40
	Numbers	326	113	88	28	164	353	1,072
Ducks	Farms	12	2	11	15	7	11	58

Source: 2012 U. S. Census of Agriculture, Tables 1, 2, 12, 15, 17, 19

APPENDIX C. ORGANIC FARMS

ORGANIC	Clinton	Essex	Franklin	Jefferson	Lewis	St. Lawrence	Total
Farms USDA NOP certified	6	8	15	30	3	53	115
Farms USDA NOP exempt	3		3	3	1	8	18
Farms w/acres in transition	2		4	3		10	19
Total organic sales, number of farms	8	7	16	27	4	54	116
Total sales ($000)	923	351	691	4967	74	7008	14014
Farms w/sales $1 to $5,000	3	3	6	7	1	9	29
Total sales ($000)	2	1	9	11	(D)	15	38
Farms with sales >$5,000	5	4	10	20	3	45	87
Total sales ($000)	921	350	681	4956	(D)	6992	13900

Source: 2012 U. S. Census of Agriculture, Table 9

APPENDIX D. OTHER FARM PRACTICES

OTHER PRACTICES- Number of farms	Clinton	Essex	Franklin	Jefferson	Lewis	St. Lawrence	Total
Rotational or MIG pasture	155	115	52	99	N/A	250	671
Marketed directly to retail outlets	40	73	27	42	9	75	266
Produced & sold value-added commodities	49	63	29	37	7	97	282
Marketed product directly through CSA	12	17	11	5	2	18	65
On-farm packing facility	10	23	11	21	4	24	93

Source: 2012 U. S. Census of Agriculture, Table 43

APPENDIX E. INTEREST IN STORAGE AND PROCESSING FACILITIES

SERVICE/PROCESS	Number reporting	Not interested	Little interest	Neutral	Interested	Very interested
A. Refrigerated storage	93	32	4	12	23	22
B. Short-term freezer storage	95	36	2	10	26	21
C. Long-term freezer storage	94	41	3	11	20	19
D. Fruits and vegetables – canning or bottling	93	47	2	10	22	12
E. Fruits and vegetables – dehydrated	91	51	1	15	12	12
F. Fruits and vegetables – fresh cut, slice, chop	89	52	4	12	12	9
G. Fruits and vegetables – pickling	89	51	2	9	18	9
H. Fruits and vegetables - juicing	87	51	1	12	15	8
I. Fruits and vegetables - ripening	88	55	7	12	8	6
J. Fruits and vegetables - IQF	78	50	0	14	8	6
K. Meat – cut and wrap	91	44	2	10	18	17
L. Meat – long term freezer storage	91	43	11	0	19	18
M. Meat - smoking	88	46	1	11	16	14
N. Meat - grinding	89	44	2	11	16	16
O. Meat – sausage producing capabilities	87	44	3	12	15	13
P. Meat - dehydration	88	50	3	15	10	10
Q. Dairy - bottling	84	62	1	12	5	4
R. Dairy - fermentation	85	64	1	11	5	4
S. Dairy - refrigeration	85	62	1	13	4	5
T. Dairy – freezer space	85	62	2	13	4	4
U. Maple/honey confections	89	49	1	17	12	10
V. Assemble dry ingredients	87	58	2	12	10	5
W. Baking	86	58	3	14	6	4
X. Oils and dressings	86	57	2	14	7	6
Y. Prepared meals	87	57	2	12	10	6
Z. Sauces, salsa, condiments processing	88	47	2	9	16	14
OTHER (please describe): ‘ **‘All production of wine has to be under a licensed producer's control-not a hub-unless they got a license for the TTB and SLA.’ ‘Co-pack, I have neither recipes nor time’ ‘not currently doing our own VA products but have rejects (tomatoes, etc.) that I'd like to use’ ‘Small farm – retired-operation.’ ‘We wouldn't process dairy in a shared facility but potentially lease space for long-term "cheese cave" type storage.’ ‘flash-freezing.’**						

APPENDIX F. PHASES AND FACTORS IN BUSINESS STRUCTURES

APPENDIX G. BUILDING THE SUCCESS OF FOOD HUBS THROUGH THE COOPERATIVE EXPERIENCE

SOURCE: Severson, R. M. and Schmit, T.M. 2015. Building the Success of Food Hubs through the Cooperative Experience. Cornell University, Charles H. Dyson School of Applied Economics and Management. Ithaca, NY. Extension Bulletin 15-04. April.
Access: http://dyson.cornell.edu/outreach/extension-bulletins

KEY CHALLENGE	SUCCESSFUL COOPERATIVES
Balancing supply and demand	• Work collaboratively with grower members to construct pre-season commitment plans identifying the level of available supplies and expected delivery dates to construct weekly sales forecasts. • Pulse the buyers in the off-season to evaluate their buying experience and gain knowledge of products needed in the next season.
Consistent product quality and food safety standards	• Farmer members wash, sort, grade, and pack at the farm prior to delivery to the aggregation facility. • Product inspected upon delivery and tracking number assigned. • Product handled to maintain quality and safety standards of the buyer and to minimize risk and liability of foodborne outbreaks.
Aggregating sufficient quantities of product to be sold at competitive prices	• Devote sufficient time to establish and maintain strong relationships with buyers AND their member-suppliers. Trust and reputation are important in both dimensions. Most buyers will not contract to purchase product. • Utilize sales staff to manage expectations of buyers as member-farmers may not have the capacity to deliver desired quantity at specified time. • Recognize long term growth requires the cooperative to encourage members to expand production along with securing more buyers or larger volume buyers. • Develop a brand for marketing purposes, recognizing the brand may not transcend the market channel in which the product is sold.
Changing consumer preferences	• Recognize the palate of the consumer is becoming more diverse. • Understand that farmers will grow limited quantities of new products until they gain experience in production and have confidence (through their cooperative) that there is sustained demand.
Accessing infrastructure at reasonable cost	• Operate cooling and refrigeration facilities with the capacity to adjust temperature and control moisture to levels that maintain product quality and extend shelf-life for a diverse range of products. • Understand that transportation costs are one of the largest costs to the business, especially long distances. • Conduct careful analysis of infrastructure costs when evaluating the investment in a building, purchase of a truck, or contracting for refrigeration space, long-hauls, and deliveries.
Business stability	• Recognize that the member's capacity to produce, the cooperative's capital, facilities and staff need to be in balance across the business. • Hire staff with expertise in the food system and provide training when necessary.

STEPS TO FORM A COOPERATIVE

SOURCE: Cooperative Development Institute, PO Box 1051, Northampton, MA 01061-1051
www.cdi.coop

1. **WHY FORM THE COOPERATIVE? WHAT IS THE NEED?**
   - Identify preliminary needs or opportunities and resources
   - Convene a core group of interested individuals

2. **ORGANIZE:**
   - Hold a meeting of potential members to discuss needs and options
   - Select a steering committee to coordinate the group

3. **RESEARCH FEASIBILITY:**
   - Survey potential members
   - Conduct market research
   - Prepare feasibility study

4. **REVIEW FINDINGS AND VOTE TO INCORPORATE:**
   - Report on the results of the feasibility study
   - File articles of incorporation
   - Elect board of directors and adopt by-laws

5. **PLANNING AND FINANCING:**
   - Prepare a business plan
   - Continue researching financing options
   - Identify facility options, purchase and lease arrangements

6. **RECRUIT MEMBERS:**
   - Prepare materials describing the co-op; hold meetings
   - Establish member investment options
   - Conduct a member equity drive

7. **SECURE FINANCING:**
   - Finalize outside financing sources and terms

8. **BEGIN OPERATIONS**
   - Hire a manager
   - Establish the business

CHALLENGES TO BE OVERCOME:

- Lack of agreement on the true need to be addressed.
- A business not structured to meet the goals of its members or shareholders. Failure to recognize there are advantages and disadvantages to all business structures.
- Potential members may not understand their roles and responsibilities. Potential members lack confidence in the steering committee
- Feasibility analysis inadequately prepared
- Business plan that fails to recognize the economic reality of the cooperative, external forces (regulations, competition) or fails to realistically project income and expenses and labor costs.
- Failure on the members to have realistic expectations of the business
- Failure of members to do adequate volume of business with the co-op
- Poor quality of products or services provided
- Insufficient equity and operating capital
- Inappropriate pricing policies
- Poorly designed governance structure
- Ineffective board of directors
- Hire unqualified manager
- Under-invest in management compensation
- Lack of strategic plan

QUESTIONS TO ASK BEFORE PREPARING LEGAL DOCUMENTS

SOURCE: Cooperative Development Institute, PO Box 1051, Northampton, MA 01061-1051
www.cdi.coop

IDENTITY

1. Who are your members?
2. What is the purpose of the cooperative?
3. Who will serve as the start-up board of directors to oversee the cooperative development activities?

MEMBERSHIP

1. What is the criteria for membership?
2. Who are the eligible members?
3. What equity will members contribute?
4. Will members each have one vote? Or will there be weighted voting?
5. Are their financial obligations for voting?
6. Are all members treated the same? Or are there classes of members?
7. How can a member terminate his/her membership? How can the cooperative terminate a member's membership?

BOARD OF DIRECTORS

1. Who is eligible to serve on the board?
2. What are the duties of board members?
3. How many seats should there be on the board?
4. Will you have board members from outside of the organization?
5. How long will a board member serve?
6. How are board members elected? Removed?
7. Are they paid? Are expenses reimbursed?
8. How will vacancies be filled?
9. How often will the board meet? What quorum is required? What meeting notice is required?
10. Will there be standing committees of the board? If yes, what are they and what are their functions?
11. Will there be officers? If yes, what offices, terms, duties, selection process?

CAPITAL STRUCTURE

1. What will the capital structure be? (Will you issue shares of stock? Membership/Common stock? Preferred stock? How many shares? At what value?
2. What are the rights and responsibilities of each stockholder?
3. Will shares earn dividends?
4. What will the redemption procedure be?

PATRONAGE DIVIDENDS

1. What is the basis for distributing patronage dividends to members?

MEMBERSHIP MEETINGS

1. How often will members meet? Who can call a special meeting? What notice is required? What quorum is required?
2. What issues will members decide? (as opposed to policies/decisions made by the board of directors)
3. How will members vote (proxy, mail, electronically)?
4. How will by-laws be amended?

MEMBERSHIP AGREEMENTS

1. What will members receive for doing business with the cooperative?
2. What will members agree to give (examples: all of product produced from their farm, production practices stipulated by the cooperative)?
3. How will money change hands?

4. How will quality be evaluated?
5. How will the agreement be enforced?
6. How will the agreement be terminated or renewed?

ADDITIONAL RESOURCES

SELECTED WEBSITES:

Cooperative Development Institute: http://www.cdi.coop/
Cooperative Development Institute (CDI) is the source for cooperative business development in the Northeast. CDI's mission is to build a cooperative economy through the creation and development of successful cooperative enterprises and networks in diverse communities in Massachusetts, New Hampshire, Vermont, Connecticut, Maine, Rhode Island and New York. Cooperative Development Institute staff specialize in helping people work together to plan and launch a cooperatively owned business. We help existing privately held businesses convert to ones owned by their employees or the consumers of their products and services, we help start-up cooperatives, and we support existing cooperative businesses.

Cornell University Cooperative Enterprise Program: http://cooperatives.dyson.cornell.edu/
The program focuses on agriculture, food system, and rural-based businesses and associations. The program is a resource for people desiring to form a cooperative or learn more about the unique nature of a cooperative-structured business, and for cooperative leaders as they govern and manage these unique member-owned companies.

United States Department of Agriculture, Rural Development, Cooperative Services
http://www.rd.usda.gov/publications/publications-cooperatives
We provide many publications, reports and educational materials. These are primarily authored by USDA staff, but include publications by University partners and other cooperative specialists. Select the desired Category from the list above. Our publications are grouped into 3 series, Cooperative Information Reports (CIR-series), Research Reports (RR-series), and Service Reports (SR-series)

Wallace Center, National Good Food Network, Food Hub Resources:
http://ngfn.org/resources/food-hubs
Excellent food hub resource with numerous research reports, assessment tools, and benchmark studies related to food hub development. Includes a consultant database and Food Hub Community of Practice discussion group

SELECTED MATERIALS – FOOD HUB DEVELOPMENT:

Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. *Regional Food Hub Resource Guide*. U.S. Dept. of Agriculture, Agricultural Marketing Service. Washington, DC. Service Report 73. April 2012.
http://www.ams.usda.gov/sites/default/files/media/Regional%2520Food%2520Hub%2520Resource%2520Guide.pdf

Matson, James, Jeremiah Thayer, and Jessica Shaw. *Running a Food Hub: Lessons Learned from the Field.* U. S. Dept. of Agriculture Rural Development. Washington, DC. Service Report 77. Vol. 1April 2015.
http://www.rd.usda.gov/files/SR_77_Running_A_Food_Hub_Vol_1.pdf

Matson, James, Jeremiah Thayer, and Jessica Shaw. *Running a Food Hub: Lessons Learned from the Field.* U. S. Dept. of Agriculture Rural Development. Washington, DC. Service Report 77. Vol. 2 July 2015.
http://www.rd.usda.gov/files/SR_77_Running_A_Food_Hub_Vol_2.pdf

Barham, James and Fidel Delgado. *Building A Food Hub From the Ground Up: A Facility Design Case Study of Tuscarora Organic Growers.* U. S. Dept. of Agriculture Agricultural Marketing Service. Washington, DC. February 2015. http://dx.doi.org/10.9752/CSG206.02-2015>

SELECTED MATERIALS – COOPERATIVE ORGANIZATION:

Brockhouse, John W. and James J. Wadsworth. *Vital Steps: A Cooperative Feasibility Study Guide*. U. S. Dept. of Agriculture Rural Business-Cooperative Service. Washington, DC. Service Report 58. December 2010. http://www.rd.usda.gov/files/sr58.pdf

Wadsworth, James. ed. *Co-op Essentials: What They Are and the Role of Members, Directors, Managers, and Employees.* U. S. Dept. of Agriculture Rural Business-Cooperative Service. Washington, DC. Cooperative Information Report 11. June 2001 revised August 2014. http://www.rd.usda.gov/files/publications/CIR%252011%2520%2520Co-op%2520Essentials.pdf

APPENDIX H. FOOD HUB EXAMPLES

1. Fifth Season Cooperative, Viroqua, WI

Business structure: Multi-stakeholder cooperative
Personnel: 4
Est. sales: $350-$400,000 (projected 2014)
Est. producers: 25
Established: 2010
Customer base: food service distributors and industrial buyers, restaurants, institutional buyers
Membership classes: Producers (growers), producer groups (agriculture businesses that aggregate and sell produce), processors (produce value-added product), distributors (local businesses that transport products), buyers (institutions and retail stores) and workers (cooperative employees)
Unique: Sells its own processed and frozen vegetable blends along with dairy, value-added meat, and shelf-stable products; relationship with Reinhart Foodservice, La Crosse, WI, broad product-line foodservice distributor with commitment to purchasing local foods, Reinhart also provides trucking function

2. La Montañita's Cooperative Distribution Center, Albuquerque, NM

Business structure: Cooperative
Personnel: 8
Est. sales: $5.5 million (FY 2014)
Est. producers: 700
Established: 2007
Customer base: Owns 5 store fronts and supplies Whole Foods and local natural grocery stores, schools and universities
Unique: Owns Cooperative Distribution Center which sells to retailers and restaurants. Large distributors deliver product to cooperative. Cooperative also provides pick up services for small and medium size producers. Manage transport costs through pick-up and back-hauling services.

3. Capay Valley Farm Shop, Esparto, CA

Organization: S-Corp.
Personnel: 10
Est. sales: $1,000,000
Est. producers: 45
Established: 2007
Customer base: Independent specialty retailers, restaurants, and corporate cafeterias.
Unique: Operates CSA-style "FarmShares" program for individuals and families (many delivered to corporate cafeterias). Expanded wholesale enterprise delivering product to corporate and commercial cafeterias. Just-in-time system to purchase product from farmers. Farmers set price with markup added to the cost. Sells some dry goods and shelf-stable products. Meat products handled through brokerage arrangement with nearby slaughter facility

4. Sandhills Farm to Table Cooperative, Whispering Pines, NC

Business structure: Multi-stakeholder cooperative
Personnel: 8
Est. sales: $460,000 (2013)
Est. producers: 30 to 100
Established: 2009
Customer base: 1,400 – 1,500 households
Unique: Owned by producers, consumers, and employees. Seasonal multi-farmer CSA. Offers produce, shelf-stable items, bread, pasta, meats, eggs, and dairy products. Farmers typically receive 70 percent of retail price.

5. Idaho's Bounty, Boise, ID

Business structure: Producer-Consumer Cooperative
Personnel: 10
Est. sales: $900,000 (2013)
Est. producers: 70 to 100
Established: 2006
Customer base: 2,000 customers including households, Whole Foods, Albertsons, local grocery store chain, consumer cooperative
Unique: Operates in 3 locations with a main warehouse leased from a member producers in 2 locations and leased office space and refrigerated storage from a local juice company in a third location. Product held in refrigerated space for very short period of time. Product packed at the farm. Small producers deliver product to designated areas where it is then loaded on another truck for transport to one of 3 locations. Orders placed through website or mobile app. Product sorted at warehouse and then delivered to pick up location.

6. Nashville Grown, Nashville Grown

Business structure: Non-profit
Personnel: 4
Est. sales: $60,000
Est. producers: 12-54
Established: 2012
Customer base: Wholesale customers
Unique: Producers include "backyard" gardeners and full-time farmers. Small-volume producers deliver to food hub. Hub repacks product (no washing) to meet customer quantity and variety needs. Moving towards washing and preparation of certain items on an "as-needed" basis. Producers submit information on product availability a week in advance along with desired pricing. Mark up applied. Food hub aggregates supply estimates and creates order form. Product harvested and delivered with little to no storage in between.

7. Red Tomato, Plainville, MA

Business structure: Multi-structured non-profit
Personnel: 6
Est. sales: $3.75 million (2013)
Est. producers: Over 40
Established: 1996
Customer base: 10 distribution centers and 200 retail and food service customers
Unique: Logistics of pickup and transport are outsourced reducing overhead costs. Approximately 90 percent of revenue returned to farmers. Moved away from traditional warehouse and delivery truck system to coordinate the setup of clusters of 2 to 5 farmers to consolidate shipments at larger farms with refrigerated storage space utilizing a 'just-in-time inventory approach. Manager works with producers to estimate product availability 2 weeks in advance to create product availability list. When orders are received, individual farmers are responsible for packaging their products and consolidating them into pallets for shipment. Packaging is customized by each farm allowing the farm's logo to be prominent for point-of-sale marketing. Once pallets are packed, Red Tomato contacts regional trucking firm to pick up and deliver product to the customer.

APPENDIX H. PRODUCER'S SURVEY

APPENDX I. BUYER'S SURVEY

APPENDIX J. CONSUMER'S SURVEY