

# **Expanding Local Food Production, Storage and Marketing Capacity in Vermont:**

## **Results from the 2007 Farm Producer Survey**



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January 2009

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## Executive Summary

In 2007, the Intervale Center distributed a survey to 301 Vermont farms to assess current marketing practices, farms' capacity to expand production, barriers to production expansion and new activities that could increase the marketing capacity of these farm businesses. The survey's primary focus was on farms in six counties in Northwest Vermont: Addison, Chittenden, Franklin, Grand Isle, Lamoille and Washington Counties.

### FINDINGS

Farms that were located in Chittenden County and the 5 adjacent counties (Addison, Franklin, Grand Isle, Lamoille and Washington) were found to have the following characteristics:

- Most farms (48%) marketed the majority of product sales "direct to consumer" (farmers' markets, on-farm retail and subscription shares).
- 51% of farms were classified as vegetable and fruit businesses.

Farms across the Northwest region identified the top 3 barriers that presented challenges to expanding their on-farm production:

- The top 3 barriers to production expansion identified were: labor (46%), storage (35%) and marketing capacity (35%).
- A higher percentage of farms in Chittenden County indicated that storage was a barrier to expansion (44%). Marketing capacity was not one of the top 3 barriers for farms in Chittenden County.

Farms ranked their preference for the following 3 alternative marketing practices:

- 38% preferred a new broker service to access institutions and larger volume accounts.
- 35% preferred a multi-farm CSA (Community Supported Agriculture) model.
- 18% preferred enhanced storage facilities.

Several other relationships were observed between farm characteristics and their interest in alternative marketing practices:

- Chittenden County farms showed the most interest in storage facilities.
- Vegetable and fruit enterprises are most likely to show interest in storage facilities.
- Farms that identified a marketing capacity barrier were the most likely to be interested in the broker service alternative.
- Farms that identified a marketing capacity barrier were the most likely to pursue joint-marketing with other farms.

## **Introduction**

Amidst a flourishing local foods movement, farm economies are adapting to assure that a growing demand for locally produced food can be met. In the Northwest region of Vermont, the local food system suffers shortfalls in the supply of certain products at various points in the year. Important questions have been raised about: a) the region's capacity to produce the current (and projected) demands for local products, b) the adequacy of current marketing and distribution systems to meet this demand and c) the requirements to promote a food system that is profitable, honorable and convenient for all people.

Between 1992 and 2002, direct food sales to customers increased 140% - at farmers' markets and farm stands - across the state of Vermont (Timmons, 2006). In 2007, over \$4 million of sales were recorded at farmers' markets alone throughout Vermont, a predominantly rural state with a 2005 population of 623,908 (Wonnacott, 2008). Estimates for Chittenden County alone (Population: 149,613) indicate that in 2008, households are expected to spend \$254.5 million on "food at home" and an additional \$208.6 million on "food away from home" (USDA, 2004). These numbers translate to approximately \$463 million dollars in retail food expenditures in just one county. When the "food at home" expenditure is broken down into major food categories, including fresh food products that Vermont farmers are capable of raising, these figures illustrate an opportunity for over \$110 million in annual sales for Vermont-raised meat, poultry, vegetables, fruits and eggs to Chittenden County residents.

Do farm producers and the integrated components of our food economy have the capacity to satisfy a greater portion of these expenditures?

In 2007, the Intervale Center (IC) began the Food Hub project with the goals of determining the consumer demand for local food in Chittenden County and improving our understanding of: a) institutional demand for local food, b) the agricultural sector's capacity to produce for regional markets and c) the capacity for existing and/or new food distribution models to facilitate the flow of products on a local level.

The IC distributed the 2007 Vermont Food Producer Survey to 301 farms in Vermont. One hundred thirteen (113) farms completed usable surveys describing their primary production activities, current marketing practices and potential for expansion into growing local food markets. This report examines a subset of these results to determine the current barriers to expanding farm production and the feasibility of new marketing alternatives to benefit farm businesses.

## **Methods<sup>1</sup>**

Surveys were distributed primarily to farms in Chittenden and the surrounding 5 counties. Farms identified as solely fluid milk producers were removed from the sampled

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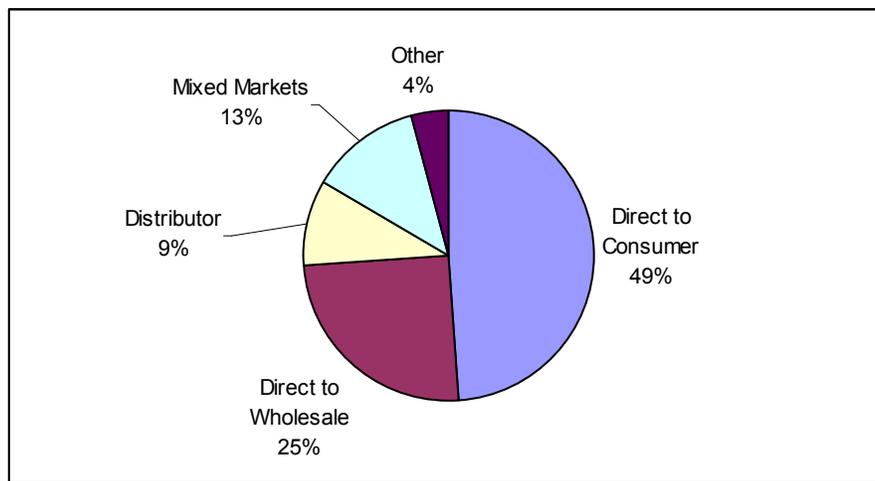
<sup>1</sup> For complete survey methodology refer to the VT Farm Producer Survey Preliminary Report, available on the internet at: [http://www.intervale.org/programs/agricultural\\_development/food\\_hub.shtml](http://www.intervale.org/programs/agricultural_development/food_hub.shtml)

population, as the complexity of fluid milk marketing is not within the scope or resources of the current project. Due to a shortage of meat-producing farms in the 6 county region, the sample of meat farms was expanded to include statewide directories. Approximately 30 farms that had previously worked with the Intervale Center on agricultural development projects were also included in the survey. These farms were located across the entire state and their primary enterprises were spread across all categories; as such, when these farms are included in the analysis that follows, the analysis is termed “statewide.” A total of 301 surveys were distributed by mail according to the Dillman method (2000) in October 2007. 113 usable surveys were received and analyzed.

## Findings

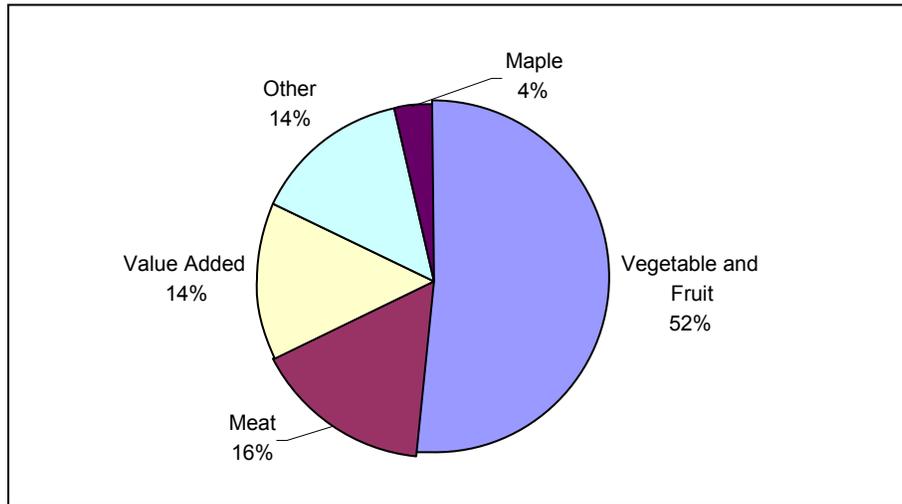
The majority of farms responding to the survey conducted most of their product sales in “Direct to Consumer” outlets. This category includes farmers’ markets, farm retail, Community Supported Agriculture (CSA) subscription memberships and other forms of face-to-face transactions between farmers and buyers. The second most common outlet was “Direct to Wholesale” outlets. This category includes the direct sale of bulk items (per case or relevant quantity) between the farm and restaurants, caterers and grocers. Figure 1 demonstrates the percentage of farms categorized by their market outlet focus for the Northwest region of the state (Chittenden, Addison, Franklin, Grand Isle, Lamoille and Washington counties).

*Figure 1: The primary market outlets for farms in Northwest Vermont (n=97 farms)*



Main Enterprise categories were identified based on the product enterprise that generated the majority of gross sales in 2006. Figure 2 demonstrates that a small majority of farms focused on vegetable and fruit production (29 farms). Meat producing farms were the second most common (9 farms) in this region of the state.

Figure 2: The primary enterprise of farms in Northwest Vermont (n=56 farms)



Seventy-four percent of farms surveyed indicated that they had the capacity to expand on-farm production if profitable markets could be accessed. Farmers were asked to indicate the top 3 barriers to expanding farm production from a list of nine potential issues. The four most common barriers were labor (46%), marketing capacity (35%), storage barriers (35%) and land (34%). The most commonly cited “other barrier” was specific concerns about slaughterhouse access, facility locations, quality and processing fees. Table 1 demonstrates the farm expansion barriers facing farms across 3 different geographic categories: the entire state, Chittenden County and six Northwest Counties grouped together.

Table 1: Percentage of farms that indicated “yes” to specific barriers to expanding production for 3 different geographic categories

BARRIER	STATEWIDE	CHITTENDEN COUNTY	NORTHWEST <sup>1</sup>
Labor Availability	46	48	46
Storage	35	44	34
Marketing Capacity <sup>2</sup>	35	26	34
Land	34	30	36
Adequate Outlets	29	15	26
Production Equipment	24	26	23
Other	22	26	26
Management Capacity	20	30	19
Access to Credit	11	15	12

<sup>1</sup> Addison, Chittenden, Franklin, Grand Isle, Lamoille and Washington Counties

<sup>2</sup> The survey defined Marketing Capacity as the ability to conduct ordering, deliver and find new accounts

The survey found a significant difference<sup>3</sup> in the presence of outlet barriers between Chittenden County farms and farms in the rest of the state (Chi-Square=3.745, p=.053). Table 2 demonstrates that farms in Chittenden County report fewer outlet barriers than the remaining farms across the state.

*Table 2: Percentage of farms (by county) that experience outlet barriers in Vermont (n=96)*

<b>FARM LOCATION</b>	<b>NO</b>	<b>YES</b>	<b>TOTAL</b>
Chittenden	85%	15%	100%
All Other Counties	65%	35%	100%

Storage barriers were found to be of more concern to farms in Chittenden County compared to either the Northwest Region (six counties) or the entire state.

Three major expansion barriers (labor, land and marketing capacity) were analyzed between the six Northwest counties, Chittenden County alone and the rest of the state. No significant difference in these 3 barriers is attributed to farm location. Analysis was conducted to determine if there was an association between the labor barrier and gross income or number of farm employees. No significant associations were observed.

Marketing capacity barriers were analyzed in order to determine if there was any relationship between years farming, years at the current farm, number of employees and farm gross income. No significant associations were observed.

### **Marketing Alternatives**

The survey asked respondents about their interest in alternative marketing models, focusing on 3 marketing alternatives: participation in a multi-farm CSA enterprise, access to product storage facilities and the presence of a broker service that could take responsibility for one or several marketing activities in order to reach higher volume outlets. For example, a broker service could undertake product promotion, transact sales and execute deliveries. The broker service alternative was ranked #1 by the most farms (38.3%), followed by the 2<sup>nd</sup> ranked multi-farm CSA (34.6%) and the 3<sup>rd</sup> ranked storage alternatives (17.8%).

The next step was to analyze if farmer interest in the 3 proposed alternatives could be associated with their location, enterprise type or current marketing practice. We observe there is a significant difference in respondent interest in the broker service alternative among the various marketing groups of farms (Chi-Square=13.338, p= .010). The broker

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<sup>3</sup> What does “statistically significant” mean? In order to assess the relationships between variables (identified pieces of data) we conduct statistical tests to determine if two or more variables change in relationship to each other. When we refer to comparisons that are statistically significant, it means that 90% of the difference in values is attributed to the relationship between the different variables being tested. The remaining 10% or less can be attributed to random chance. Using the example of a reported p-value of .05, we interpret that as meaning 95% (.95) of the difference in values can be attributed to the changes in the other variable.

service alternative is most favorable to the farms that currently market the majority of their sales through Direct to Wholesale outlets (Table 3). Direct to Consumer farms also had the most uncertainty about the broker service, indicating “not sure” more than any other marketing category.

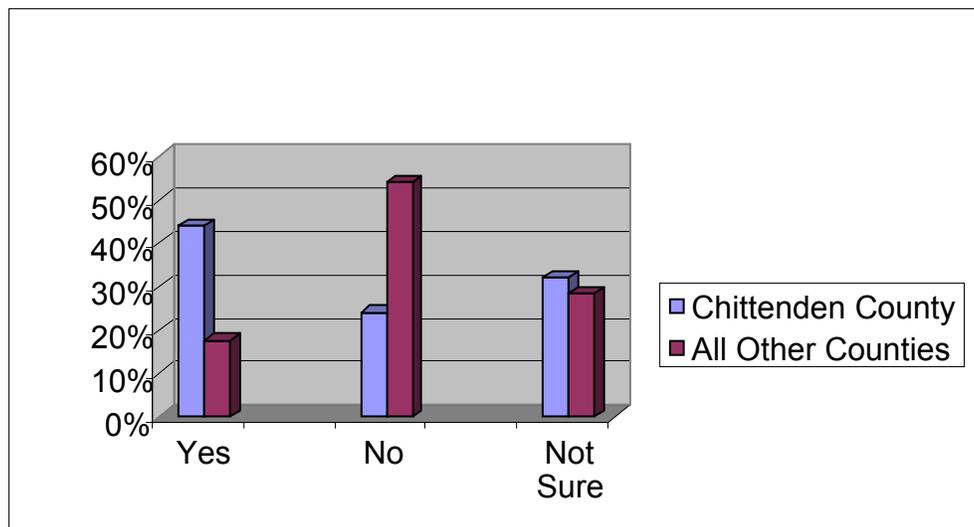
Table 3: Number of farms indicating a preference in a broker service based on current marketing practices (n=78)

CURRENT MARKETING	YES	NO	NOT SURE
Direct to Consumer	13	11	21
Direct to Wholesale	16	2	6
Wholesale Distributor	4	4	1
Total	33	17	28

### Storage

The storage alternative, which was ranked 3<sup>rd</sup> highest among all farms, was most strongly supported by farms in Chittenden County. Figure 3 demonstrates that Chittenden County farms support the storage alternative more than the remaining group of farms (Chi-Square=9.102, p=.011). Over 40% of Chittenden farms supported this alternative while only 20% supported this alternative among producers in the rest of the state.

Figure 3: Interest in storage alternatives based on farm location (n=99 farms)



Looking further, we observe that there is a difference in the interest in storage solutions between the 6 counties that comprise our study area in Northwest Vermont (Chi-square=23.358, p=.009). Chittenden County producers are more apt to support this alternative compared to producers in adjacent counties.

Table 4: Interest in storage alternatives based on farm location by county (n=72)

FARM LOCATION	YES	NO	NOT SURE
Addison	2	13	3
Chittenden	11	6	8
Franklin	2	6	2
Grand Isle	3	4	1
Lamoille	0	1	3
Washington	1	1	5
<b>Total</b>	<b>19</b>	<b>31</b>	<b>22</b>

Of the 11 producers in Chittenden County that indicated an interest in storage, 7 were classified as vegetable and fruit farms. Similarly, looking at the respondents across all counties, 63% of the respondents interested in storage facilities are vegetable and fruit farms.

### Broker Services

There is a significant relationship between the farms that were interested in the broker services option and those that identified having a marketing capacity barrier (Chi-square=5.624, p=.060). The survey defined Marketing Capacity as the ability to conduct ordering and delivery and find new accounts. Of the 32 farms that reported this marketing barrier, 53% were interested in broker services, 6% were not and 41% were unsure (Table 5). From the 59 farms that did not demonstrate a marketing capacity barrier, 36 % were interested in broker services, 25% were not and 39% were unsure.

Table 5: Relationship between the interest in brokerage services and the presence of a marketing capacity barrier (n=91)

			Marketing Capacity Barrier		Total
			No	Yes	
Interest in Brokerage Services	Yes	Count	21	17	38
		% With Identified Barrier	35.6%	53.1%	41.8%
	No	Count	15	2	17
		% With Identified Barrier	25.4%	6.3%	18.7%
	Not Sure	Count	23	13	36
		% With Identified Barrier	39.0%	40.6%	39.6%
Total	Count	59	32	91	
	% With Identified Barrier	100.0%	100.0%	100.0%	

There is also a significant relationship between a farm's marketing capacity and their interest in joint marketing with multiple farm to access markets (Chi-Square= 5.159, p = .076). Farms that experience the marketing capacity barrier are more likely to consider these joint marketing projects. Seventy-seven percent of the farms that identified

marketing barriers would consider jointly marketing products. Farms that did not identify marketing barriers also show interest in joint marketing (31 of 55 farms) but to a lesser degree (Table 6).

*Table 6: Relationship between the interest in joint marketing and the presence of a marketing capacity barrier (n=86)*

			Marketing Capacity Barrier		Total
			No	Yes	
Interest in Joint Marketing	Yes	Count	31	24	55
		% With Identified Barrier	56.4%	77.4%	64.0%
	No	Count	10	1	11
		% With Identified Barrier	18.2%	3.2%	12.8%
	Not Sure	Count	14	6	20
		% With Identified Barrier	25.5%	19.4%	23.3%
Total	Count	55	31	86	
	% With Identified Barrier	100.0%	100.0%	100.0%	

Adequate market outlets were identified as a barrier to expanding farm production by 29% of all respondents (See Table 1). There was no significant relationship found between the total years farming or the years at the current farm and the presence of this barrier. There is a significant relationship between the presence of this outlet barrier and the interest in a broker service (Chi-Square= 14.090, p=.001). Of the 26 farms that identified an outlet barrier, 18 were in favor of broker services, 0 were not and 8 were unsure (Table 7).

*Table 7: Relationship between the interest in brokerage services and the presence of an outlet barrier (n=91)*

			Outlet Barrier		Total
			No	Yes	
Interest in Brokerage	Yes	Count	20	18	38
		% With Identified Barrier	30.8%	69.2%	41.8%
	No	Count	17	0	17
		% With Identified Barrier	26.2%	.0%	18.7%
	Not Sure	Count	28	8	36
		% With Identified Barrier	43.1%	30.8%	39.6%
Total	Count	65	26	91	
	% With Identified Barrier	100.0%	100.0%	100.0%	

## **Multi-Farm Community Supported Agriculture (CSA)**

Thirty-five percent of responding growers felt a multi-farm CSA in the Chittenden County region would benefit their farm. Many growers that had no interest in this marketing alternative provided comments to explain why. Distance from their farm and delivery complications were the most common issues cited.

The support for the multi-farm CSA model was spread widely among all characteristics used to identify the farms. No significant relationships were found between respondents' interest in a multi-farm CSA and farm enterprise type, current marketing practice, farm location or barriers to expanded farm production.

## **Conclusion**

Agricultural development professionals are talking about “scaling it up.” While the term “scaling it up” or the actual methods for doing so have been loosely defined thus far, there is a realization among stakeholders in our food economy that systems must be developed and improved in order for more locally produced goods to reach the marketplace. This survey has identified several steps to increase the capacity for Vermont’s farms to raise more food and supply a greater portion of food products to local markets.

### **Farmers Seek Enhanced Brokerage.**

This survey finds that the development of an enhanced brokerage service – one with the capacity to coordinate orders and warehouse products in order to sell to larger institutions or markets - was the highest ranked marketing alternative for Vermont farms. Interest was spread evenly between vegetable/fruit, meat, value-added and other enterprise types but was significantly associated with the identification of on-farm marketing capacity barriers and the barrier to locate adequate outlets. The interest in a broker service was also most supported by farms that currently sell under the “direct to wholesale” category. Interestingly, 78% of the farms that ranked brokerage service highest indicated they have the capacity to expand production. This finding indicates that there is a group of farms that currently undertake all the responsibilities of wholesale transactions (including bulk packing, order and delivery responsibilities) who perceive benefits from working with another party to facilitate sales to large accounts and who have the capacity and the desire to increase production on their farms.

Working with a broker represents a major commitment to larger volume production. If buyers sign on, they are likely to require consistent product over a longer time period. Growers that interrupt this supply or break commitments may send the wrong message and jeopardize future accounts. Brokerage services could take on any or all of the following marketing responsibilities: 1) product warehousing and storage, 2) product promotion, 3) directly buying and selling product, 4) customer service with buyers and/or 5) delivery of product or contracting with distributors. Brokers specialize in representing a product in the marketplace, and these services come with a cost. Producers may expect to pay from 3%-10% of sales to their broker, depending on the services they receive or the track record of their product. It is not yet apparent in Vermont if current food

distributors can satisfy this role in the food sector or if a new model and new parties are needed.

**Season-extending storage is needed for Chittenden County farm businesses.**

It is clear that different marketing solutions will serve farms better in different locations. Chittenden County farms favored storage more than any other county in the state. These are the same farms that indicated the least problem in finding adequate outlets. In this region many farmers find solid markets from the large concentration of restaurants, grocers and direct customer sales. These farms could produce more food for their communities and extend the selling season into the winter months with storage facilities. This translates into extended cash flow over winter months, increased gross sales over the year and potentially better margins if prices increase over winter months.

Investment in storage capacity would undoubtedly create opportunities to increase agricultural production and satisfy the growing demand for local products through the entire calendar year. Facilities may need to satisfy the following needs:

1) location proximal to supplier farms, 2) adequate loading and receiving area, 3) equipment for handling palletized product, 4) specific controlled environments for various crops, 5) washing and packing equipment to sort and repack sellable product, 6) floor drains for product washing and 7) communication and computing technology for receiving orders, managing inventory and preparing invoices.

Conversations with refrigeration contractors indicate that designing a 500 square foot compartmentalized controlled atmosphere environment in an existing warehouse space could require an investment of \$15,000 depending on its specifications. Less expensive technologies such as the Coolbot™ may satisfy needs temporarily in small, well-insulated spaces, but commercial scale storage is necessary to have a significant impact on regional demand. Furthermore, washing and packaging stages may occur before storage or just previous to sale depending on the product. These decisions will determine if additional investments in barrel washers, sorting systems or packing lines are required. These investments, whether from farms, independent businesses or other sources, are entirely necessary to promote year round local food access in the Northwest region of Vermont. Additional feasibility work is needed to determine the most appropriate scale, location, logistical considerations and potential partnerships necessary to support the development of storage facilities in and around the Burlington area.

**Multi-Farm CSA is an alternative marketing strategy that appeals to a range of Vermont growers.**

Farmer interest in the multi-farm CSA model (35% of first choice ranking) was only slightly less than the interest in broker service (38% of first choice ranking), but there are very few associations that can be linked between this alternative and other characteristics of the farms. That lack of association demonstrates that this model is attractive to a diversity of farms whose managers see the potential of collaborative marketing. Indeed, beyond this survey, the experience from the Intervale Center's 2008 Food Basket Pilot Multi-Farm CSA highlights the adaptability of this alternative to many types of farms and managers. Large growers can easily develop wholesale relationships to sell products

while receiving an added benefit of product promotion and potentially better than wholesale prices. Small growers can also benefit from this model, as the addition of a wholesale account for one or a few crops stands as a nice complement to maximize output from their land base with limited investment in marketing. The CSA share model also secures customers in advance, forwarding working capital back to the joint venture and potentially to growers early in the season.

From the survey, farms supporting this model value the connections that occur from direct marketing to customers and also highly value the preservation of their own farm identity and brand.<sup>4</sup> The multi-farm model opens the door for expansion past the limits of any one farm while also maintaining this essential relationship between individual growers and households.

Joint-marketing projects between farms that follow the CSA model will undoubtedly face a new list of opportunities and challenges as they sell their products to household subscribers. The combination of vegetable, fruit, meat and other foods in this model can present a far greater product mix than any one farm could achieve. Household consumers will be more flexible about product consistency or sizing specifications than wholesale or food service buyers. This model is an obvious first step for parties that are inexperienced or unsure of their ability to aggregate product from multiple producers and ensure reliable product quality.

One issue for the multi-farm CSA model will be determining how much of the “risk-sharing” element of the CSA model will be maintained. In a traditional CSA, members pay a farmer up-front in exchange for a share of that season’s anticipated yields. If yields are low, a member will receive less food. If yields are large, members benefit by getting extra food. In a multi-farm model, it is unclear if the organizers are accountable to find substitute products to assure members satisfaction. Will members be able to translate the risk-sharing mentality to a group of farms, which previously they identified with just one farm? These and numerous new issues are likely to surface as these innovative marketing approaches are launched around the country.

**More work is needed to address the critical issues of labor availability, land access and slaughter infrastructure.**

As everyone in Vermont’s farming community knows, labor availability and affordability, land access and the lack of slaughterhouse infrastructure continue to present significant challenges to farmers. These ongoing challenges are being addressed at many levels throughout the state, as nonprofits, farms, local and state governments, entrepreneurs and communities each have a role to play as we work together to create a more robust, resilient, diverse and fair farm economy for Vermont.

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<sup>4</sup> For more details on farmers survey responses about joint marketing, refer to “Maintaining Farm Identity Through Alternative Marketing Practices,” available online at: [http://www.intervale.org/programs/agricultural\\_development/documents/Maintaining\\_Farm\\_ID\\_Through\\_Alt\\_Marketing2008.pdf](http://www.intervale.org/programs/agricultural_development/documents/Maintaining_Farm_ID_Through_Alt_Marketing2008.pdf)

## Summary

The development of broker services, storage facilities and multi-farm marketing models has the potential to increase access to new markets for farmers and increase the supply of year-round local products in Vermont.

This research shows that while Vermont producers currently use direct marketing outlets more than other methods, most are open to exploring collaborative methods in the interest of reaching a new sector of consumers. The majority of farms report they have the capacity to expand farm production, yet certain marketing barriers, as well as labor, land and slaughter facility limitations, have prevented them from doing so. Critical investments in food storage and distribution infrastructure paired with efficient systems and relationships that connect food suppliers and buyers are now required to support the scaling up of this regional food system in coming years.

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