

## **Increasing farm income and local food access: A case study of a collaborative aggregation, marketing, and distribution strategy that links farmers to markets**

Michele C. Schmidt,<sup>a,\*</sup> Jane M. Kolodinsky,<sup>b</sup> Thomas P. DeSisto,<sup>c</sup> and Faye C. Conte<sup>d</sup>

Submitted 22 February 2011 / Accepted 7 March 2011 / Published online 25 August 2011

*Citation:* Schmidt, M. C., Kolodinsky, J. M., DeSisto, T. P., and Conte, F. C. (2011). Increasing farm income and local food access: A case study of a collaborative aggregation, marketing, and distribution strategy that links farmers to markets. *Journal of Agriculture, Food Systems, and Community Development*, 1(4), 157–175. <http://dx.doi.org/10.5304/jafscd.2011.014.017>

Copyright © 2011 by New Leaf Associates, Inc.

### **Abstract**

As consumer interest in locally grown food increases, farmers and organizations are working on inventive ways to supply fresh and affordable local food to residents. The Intervale Center, a nonprofit in Burlington, Vermont, partnered with small and midscale farmers to create the Intervale Food Hub, a collaborative of staff and farmers that aggregates, markets, and distributes local products through both a multifarm community supported

agriculture (CSA) program and wholesale. Informed by surveys conducted to assess supply and demand in the region, the Food Hub provides businesses, restaurants, retailers, institutions, and individuals with year-round access to a diverse mix of fresh and value-added local food. The Intervale Center serves as a local distributor, purchasing products from up to 30 farmers and coordinating packaging, marketing, distribution, and business operations. Year-round, shared space is available to conduct business operations, including packaging and short-term storage. After three years of operation, the Food Hub has begun exploring ownership structures and geographic expansion. Using a participatory action research approach, this case study reviews the enterprise's development and outcomes. We provide a qualitative assessment of farmer and staff perceptions of successful practices and limitations, and conclude with recommendations for future research.

### **Keywords**

aggregation, collaborative, community supported agriculture, CSA, direct marketing, distributor,

---

<sup>a,\*</sup> *Corresponding author:* Center for Rural Studies, 206 Morrill Hall, University of Vermont, Burlington, VT 05405 USA; +1-802-656-0256; [mschmidt@uvm.edu](mailto:mschmidt@uvm.edu)

<sup>b</sup> Department of Community Development and Applied Economics, 202 Morrill Hall, University of Vermont, Burlington, VT 05405 USA; +1-802-656-4616; [jkolodin@uvm.edu](mailto:jkolodin@uvm.edu)

<sup>c</sup> Center for Rural Studies, 206 Morrill Hall, University of Vermont, Burlington, VT 05405 USA; +1-802-656-3021; [tdesisto@uvm.edu](mailto:tdesisto@uvm.edu)

<sup>d</sup> Department of Community Development and Applied Economics, 206 Morrill Hall, University of Vermont, Burlington, VT 05405 USA; +1-802-656-3021; [faye.conte@uvm.edu](mailto:faye.conte@uvm.edu)

food system, participatory action research, social entrepreneurship, Vermont, wholesale

## Introduction

Over the past four decades, researchers across disciplines have characterized a strong community food system as being locally based, ecologically sustainable, affordable for consumers, and economically viable for producers (Feenstra, 1997; Garrett & Feenstra, 1999; Herrin & Gussow, 1989; Kneen, 1993; Lappé, 1975; Lappé & Collins, 1978). More recently, experts in many fields from business and marketing to health and nutrition stress the importance of supporting and sustaining community food systems as a strategy for improving public health. Reducing the prevalence of obesity and diet-related chronic disease has long-term cost-saving benefits to society (Hamm, 2008; Story, Hamm, & Wallinga, 2009).

A community food systems approach identifies the relationships required to get food from farms to consumers. Feenstra (1997) includes producers, distributors, and consumers who take part in the system. Story et al. (2009) add mechanisms and structures for food production, processing, distribution, acquisition, preparation, and consumption. A systems approach respects the complexity of all components and their interactions because there is no one strategy or consistent solution (Stephenson & Lev, 2004). Jarosz (2000) states that the strength and vitality of a food system are critically related to the extent that relationships within regional food networks are based upon trust and cooperation among food suppliers, producers, workers, brokers, and consumers.

Amidst a flourishing local foods movement in the United States, farm groups are working to define and address the needs of their communities. A growing number of Vermonters and Vermont-based institutions desire fresh, locally produced fruits, vegetables, livestock products, and processed foods (USDA NASS, 2007). Between 2002 and 2007, Vermont farmers saw a statewide increase in sales from direct markets of 140%.

Vermont farmers earned US\$9.5 million from direct market sales in 2002 (an average of US\$8,226 per farm), which jumped to US\$22.8 million in 2007 (an average of US\$15,511 per farm). In response to these local market forces, farmers throughout the state are seeking new business opportunities through collaborative and innovative market linkages (Berlin, Lockeretz & Bell, 2009; Kolodinsky, DeSisto & Schmidt, 2009; Timmons, 2006). The Intervale Center is a nonprofit in Burlington, Vermont, that is dedicated to strengthening community food systems. With a 23-year history of revitalizing 350 acres of land, enhancing the viability of farming, and engaging the community in support of sustainable agriculture, the Intervale Center was uniquely poised to pursue market development opportunities with farms.

Supported by funds from a U.S. Department of Agriculture Sustainable Agriculture, Research and Education (SARE) grant, the Intervale Center and farmers sought to strengthen one component of a local food system by initiating a farmer collaborative called the Intervale Food Hub. The dual goals of the Intervale Food Hub are to increase (1) farm profitability and (2) convenience in accessing locally grown food. Managed by the Intervale Center, the Food Hub aggregates, markets, and distributes local products to individuals, businesses, grocers, restaurants, and institutions through both a multifarm community supported agriculture (CSA) program and wholesale marketing and distribution.

This paper focuses on staff and farmer perceptions of the process over time to create, implement, and refine the Intervale Food Hub. Using a participatory action research (PAR) framework, we outline the implementation process of the Food Hub and identify the program's strengths, weaknesses, opportunities, and threats faced in carrying it forward. This case study reveals promising strategies, recommendations, and limitations for other communities to consider when implementing creative approaches to strengthen components of their food systems.

## Background

### *Growing Consumer Demand*

Consumer demand for year-round and convenient access to fresh and local foods continues to grow throughout the country (Berlin et al., 2009; Bruhn, Chapman, Vaupel & Vossen, 1992; Kolodinsky et al., 2009; Thomson & Kelvin, 1994; USDA NASS, 2007). Yet local food systems in regions with limited growing seasons, such as the Northeastern United States, suffer shortfalls in the supply of certain products at various points in the year (Farnsworth, Thompson, Drury, & Warner, 1996; Kolodinsky et al., 2009; Lockeretz, 1986). Questions also remain as to whether current distribution channels can adequately meet this demand (Berlin et al., 2009; Schneider & Francis, 2005; Stephenson & Lev, 2004).

Several studies on local food access in the United States demonstrate unmet consumer demand. Schneider and Francis (2005) found that in a Nebraska county there was potential for increased marketing of local farm products, but also a large gap between high consumer demand and farmers' ability to meet this demand. In Oregon, Stephenson and Lev (2004) found strong consumer demand for local food in convenient venues such as supermarkets. However, on the supply side, farms face obstacles to distributing their local food products using commercial outlets. A USDA meta-analysis across 15 local food case studies provides suggestions for ways farms can reach these markets (King et al., 2010). The report concluded that "farms and businesses in local supply chains can be successful if they offer unique product characteristics or services, diversify their operations and have access to processing and distribution services" (King et al., 2010, iv).

### *Collaborative Marketing and Distribution Strategies*

Aggregating products from multiple farms is a strategy that can support a larger-scale distribution of local products to markets ranging from individuals to institutions. Collaboration reduces barriers that wholesale markets face with direct purchasing of local products, providing products that are predictable, priced fairly, delivered regu-

larly, and of high quality (Azuma & Fisher, 2001; Grower's Collaborative, 2010; Johnson & Stevenson, 1998). While preserving farm identity and traceability, collaboration can also decrease farms' marketing costs and maximize production capacity (Campbell & Pearman, 1994; Day-Farnsworth, McCown, Miller & Pfeiffer, 2009; Fricker Group & Sunflower Strategies, 1994). Farmer collaboratives can share resources such as packing materials, storage space, distribution channels, revolving capital, expertise, and consumers (Campbell & Pearman, 1994; Fricker Group & Sunflower Strategies, 1994). Producers can also form a cooperative, where farms make a financial investment or pay a membership fee to cover overhead costs or pay for shared resources. Such aggregated models allow small-scale farmers to "scale up" by combining their products with that of other growers to gain access to larger markets that require a larger and/or more consistent volume of products than they are able to supply alone (Day-Farnsworth et al., 2009; Grower's Collaborative, 2010).

Collaborative approaches often link producers and consumers through a distributor, such as a non-profit, for-profit, professional, cooperative, or collaborative organization or group (Day-Farnsworth et al., 2009; Stephenson & Lev, 2004). There are many examples of successful initiatives that market and distribute local products aggregated from small to medium-size farms to a local market, along with an emphasis on paying farmers fairly. These programs are driven by nonprofits and/or producers, and all have relied on financial support from public and private grant sources. Farm Fresh Connection LLC (2009) is a nonprofit driven business, designed and implemented by the Maine Sustainable Agriculture Society, that brokers local foods to institutions in south-central Maine. Red Tomato (Stevenson, 2009) is a nonprofit that coordinates marketing, sales, and wholesale logistics for family farms in the Northeast. Grower's Collaborative LLC (2010) started as a nonprofit-run virtual farmers' market for California family farms. Despite ample demand for local product, Grower's Collaborative has struggled to become financially self-sustaining and is undergoing changes that will

position it as an aggregator and marketer rather than a distributor.

Farmer-driven alliances and cooperatives include Good Natured Family Farms (Dreier & Taheri, 2008) and Penn's Corner Farm Alliance (Self, 2011), which aggregate products for distribution in Kansas City and southwestern Pennsylvania, respectively. Eastern Carolina Organics (Self, 2009) was a project initiated by the Carolina Farm Stewardship Association in 2004 and in 2005 became a private, grower-owned limited liability corporation (LLC). Grasshoppers Distribution (Self, 2011) is a farmer-owned distribution company that exclusively distributes local food from small-scale farmers in Kentucky and southern Indiana through a CSA program and wholesale.

The Intervale Center is the local distributor for the collaborative of Vermont farmers that supply product to the Intervale Food Hub CSA and wholesale enterprises. The CSA offers subscribers spring, summer, and winter shares, which can be purchased individually or bundled together, that include a variety of local products. Subscriber purchases of CSA shares in advance of the season provide farmers with advance capital. For wholesale distribution, the Intervale Food Hub aggregates, markets, and delivers products biweekly to local restaurants, caterers, grocers, and institutions. This service provides food buyers with product availability lists from farms so they may purchase a wide array of local foods with a single order and single delivery. As a local distributor, the Intervale Food Hub is also committed to providing a consistent market and fair prices for farmers. This case study of the Intervale Food Hub conception and implementation can be used by farming communities and agricultural groups seeking to implement collaborative solutions to strengthen aspects of their local food systems.

## Methods

### *Participatory Action Research*

This case study is grounded in participatory action research and the concept of participatory learning (McIntyre, 2008; O'Brien, 1998; Pretty, 1995;

Wadsworth, 1998). It is also grounded in an adaptive context, as discussed by Meter (2010), acknowledging that participants continually adapted this project to their changing needs and environment. Farmers, Intervale Center staff, and researchers engaged in reflection and action throughout the research process, and results were used to inform the project's implementation (McIntyre, 2008; O'Brien, 1998). Pretty (1995) explains that participatory methodologies imply a process of learning that leads to action, such as how staff and farmers refined implementation practices of the Intervale Food Hub by learning from their experiences and sharing reflective dialogue during focus groups. This research is also grounded in an adaptive context, as discussed by Meter (2010), acknowledging that participants continually adapted this project to their changing needs and environment.

### *Data Collection*

Qualitative data were collected from Intervale Center staff and Food Hub farmers through in-depth interviews and focus groups following standard methodology (Krueger & Casey, 2009; Patton, 2002). Protocols focused on three major themes: (1) critical components to develop and implement the Intervale Food Hub; (2) strategies put into practice by the Intervale Food Hub to support demand for local foods while providing a fair return to farmers; and (3) successful practices and limitations of this model from which other communities can learn. The University of Vermont's Institutional Review Board approved all protocols prior to the study's commencement.

Research staff from the University of Vermont facilitated four focus groups with up to five Intervale Center staff. Sessions were held every six to eight months and lasted for two hours to two and a half hours. Focus group guides were developed for each session to gather information on project development and implementation over time. In-depth interviews with 18 farmers were conducted from August 2009 to November 2009. Although 30 farms initially supplied product to the Intervale Food Hub, only core farmers who formed the formal collaborative in 2009 were interviewed. Three farmers declined participation. The interview

protocol consisted of 10 items. Telephone and on-site interviews took one hour to one and a half hours to complete, and five farmers submitted written responses.

### *Coding and Analysis*

A thematic analysis of the data was conducted using a grounded theory orientation (Coffey & Atkinson, 1996; Glesne, 1999; Patton, 2002). Researchers coded the data using an *a priori* and *posteriori* coding structure. A portion of the coded data was reviewed collectively to resolve any discrepancies and verify code reliability (Patton, 2002). Additional researchers reviewed the findings to check code validity and reliability of the analysis. In cases where codes were revised, data were reanalyzed.

### **The Case Study**

This case study describes the process of creating and refining the Intervale Food Hub. Staff and

farmers reflected on the learning process to identify the strengths and limitations of this approach that may benefit other farming communities. We use a narrative style to present the thematic findings of the Intervale Food Hub implementation process that led to outcomes presented in table 1. The Intervale Food Hub experienced notable expansion over time in the number of drop-off sites, subscribers, revenue streams, and total sales. The number of participating farms declined and leveled out as the collaborative strengthened and business expansion decreased reliance on grant funds. A discussion on the change in percent of sales returned to farms is presented in the Discussion section of this paper. See table 2 for a timeline of major Intervale Food Hub events.

### *Developing the Intervale Food Hub, 2007*

*The Intervale Food Hub farming community.* The Intervale Food Hub facilities are located at the

**Table 1. Outcomes of the Intervale Food Hub** (all values in US\$)

	2008	2009	2010	2011 Projections*	
<b>CSA</b>	Number of members (total of subscribers for all programs, including students)	208	355	555	755
	Number of workplace and student pick-up sites	7	20	25	30
	Summer CSA sales revenue (June–Oct.)	\$68,000	\$106,000	\$158,000	\$175,000
	Winter CSA sales revenue (Nov.–Feb.)	\$30,000	\$76,000	\$93,000	\$93,000
	Spring CSA sales revenue (March–May)	—	—	—	\$45,000
	Fall student CSA sales revenue (Sept.–Dec.)	—	—	\$15,000	\$25,000
	Spring student CSA sales revenue (Jan.–May)	—	—	—	\$18,000
<b>Wholesale</b>	Number of wholesale accounts	—	—	30	45
	Wholesale revenue to restaurants and institutions	—	—	\$45,000	\$85,000
<b>Farmers</b>	Number of participating farms	30	21	24	24
	Total sales returned to farmers	\$60,920	\$125,704	\$200,345	N/A
	Range of sales to farms	\$180– \$8,777	\$600– \$22,423	\$750– \$30,170	N/A
	Percentage of sales from CSA returned to farmers	70%	70%	65%	65%
	Percent of wholesale returned to farmers	—	—	85%	85%
<b>Grant funding</b>	Grant funds used to support budget	\$75,000	\$93,000	\$55,000	\$6,000

\* Projections are based on sales from previous years and the capacity of the Intervale Food Hub to expand.

**Table 2. Intervale Food Hub Implementation Timeline**

<i>Date</i>	<i>Event</i>
<b>2007-2008</b>	<ul style="list-style-type: none"> <li>• Food Hub conducts background research on consumer demand, farmer needs assessment, and institutions and chef wholesale needs assessment.</li> </ul>
<b>Summer 2008</b>	<ul style="list-style-type: none"> <li>• Food Hub launches the pilot year of the business with 122 summer CSA subscribers.</li> </ul>
<b>Winter 2008</b>	<ul style="list-style-type: none"> <li>• In response to consumer demand, Food Hub immediately opens a winter CSA program with 86 members.</li> </ul>
<b>2009</b>	<ul style="list-style-type: none"> <li>• The Food Hub expands the summer CSA to 198 subscribers and moves cold storage space to a barn adjacent to the Intervale Center.</li> <li>• A total of 157 winter CSA shares are sold.</li> </ul>
<b>2010</b>	<ul style="list-style-type: none"> <li>• The Food Hub hires an additional FT staff person.</li> <li>• The Food Hub expands to 325 summer subscribers and 165 winter subscribers.</li> <li>• The Food Hub launches a student share program for the fall 2010 semester with 65 members from a local University and College.</li> <li>• The Food Hub launches a wholesale program, providing 12 restaurants and institutions with wholesale products. Buyers are provided with a product list and delivery of purchased items two times a week.</li> </ul>
<b>2011</b>	<ul style="list-style-type: none"> <li>• The Food Hub continues to plan for summer, winter and spring student CSA programs.</li> <li>• The Food Hub also plans to start a spring share program, providing subscribers with year round local food through three programs.</li> <li>• The Food Hub also plans to include additional wholesale accounts.</li> <li>• The Food Hub collaborative discusses different ownership models.</li> </ul>

Intervale Center in Chittenden County, Vermont, and the CSA and wholesale enterprises serve consumers in this county. Most of the farms supplying the Intervale Food Hub are located in Chittenden and the five surrounding counties of northern and central Vermont. The growing season ranges from 100 to 130 days a year in the colder northeastern counties and 130 to 150 days a year in warmer counties located on Lake Champlain (Orth, 2003). A productive, working landscape and local food access have long been valued in the six-county area. A restaurant review in a local weekly newspaper begins, “Maybe The Farmers’ Diner [restaurant] could only happen in Vermont, where robust, modern ‘localvore’ principles coexist with old-fashioned American ag [sic] of the plaid-clad-farmer variety” (Podhaizer, 2009). Regional plans mention the importance of agriculture and list the loss of agriculture as a potential threat to the economic, social, and environmental health of the area (Addison County Regional Plan, 2008; Central Vermont Regional Plan, 2008; Chittenden County Regional Plan, 2006). In 2007 there were 2,962 farms in this five-county area, accounting for 42%

of total Vermont farms, and 29% of this land (578,786 acres or 234,226 hectares) is used as farmland (USDA, 2007). A farm of 50 to 179 acres (20 to 72 hectares) is the most common farm size. Data show a 5% decrease in acres harvested from 2002 (256,732 acres or 103,896 hectares) to 2007 (241,002 acres or 97,530 hectares); however, the number of farms increased by 7.3% during the same time frame, a rate higher than the statewide increase of 6.3%.

*Exploring consumer demand.* In 2007, the Intervale Center commissioned a household study in Chittenden County (N= 412, a 42% response rate) to explore consumer demand for local food through direct agricultural markets (Kolodinsky et al., 2009). This study found that only 4% of local food shoppers surveyed were currently members of a CSA. Forty percent of non-CSA members expressed interest in joining one, specifically if the share was convenient to access such as through a home or workplace delivery. Consumers’ desired product mix extended beyond produce and included fruit, eggs, dairy, and meat. Residents asked

for greater access to high quality and reasonably priced local foods during the winter months. The Intervale Center also conducted in-depth interviews with 18 restaurant food buyers (Abda, 2007). Common barriers cited by food buyers to regularly purchasing local foods were availability, price, seasonality, variety, consistency, and volume of supply. Seventeen of the buyers were interested in working with a consolidated food distribution delivery service offered by the Intervale Center.

*Exploring farmer needs.* In 2007, the Intervale Center also conducted a mail survey of Vermont farmers to assess marketing practices, farms' capacity to expand production, barriers to expansion, and interest in new activities that could increase farm marketing capacity (Intervale Center, 2009; Schattman & Cannella, 2008). A total of 113 farmers responded for a response rate of 35%. Respondents had been farming an average of 20 years (median 14 years), and total farm acreage (including forested land) ranged from one acre (.4 hectare) to 1,200 acres (486 hectares), with an average of 169 acres (68 hectares). A third of responding farms were five to 49 acres (2 to 20 hectares), 21% were 100 to 199 acres (40 to 81 hectares), 17% were 300 or more acres (121 hectares or more), and 10% were five acres or less (2 hectares or less). Over half of farms (57%) surveyed provided a gross income of US\$49,000 or less.

Seventy-four percent of responding farmers had the capacity to expand on-farm production if they could access profitable markets. Common barriers to expansion were limited labor supply (48%), storage (44%), management capacity (30%), land (30%), marketing capacity (26%), and production equipment (26%). Farmers ranked their preferences for the following three marketing practices: 38% preferred a new broker service to access institutions and larger volume accounts; 35% preferred a multifarm CSA program; and 18% preferred enhanced storage facilities. Farmers who identified a marketing capacity barrier were most interested in the brokerage service alternative and pursuing joint marketing with other farms. This

supply and demand background research informed the conceptualization of the Intervale Food Hub.

To gather more in-depth information, Intervale Center staff also engaged in dialogue with 30 to 50 farmers who participated in the nonprofit's agricultural development programs (Intervale Center, 2007), revealing how the Intervale Food Hub could meet their needs. These farmers generally ran small to medium-sized, organic and/or niche-market family farms, and sought profitable ways to meet growing consumer demand. Most farmers were already selling product in Chittenden County; however, many expressed interest in further diversifying and expanding their production capacity, tapping into new markets, and sharing the costs, benefits, and risks of direct marketing with other farmers.

*Relationship-building efforts.* With this groundwork in place, Intervale Center staff and farmers worked together to develop the Intervale Food Hub enterprise. Good rapport and communication between farmers and staff were essential to developing strong working relationships. Though the Intervale Center had a longstanding history with the farming community, staff took numerous steps to further build trust and rapport. Having open communication channels on an ongoing, as-needed basis was critical to the co-learning process in developing the Intervale Food Hub. Communication between staff and farmers occurred weekly by telephone, email and in-person meetings. Farmers and staff worked individually and as a group to determine product quality, quantity, diversity, pricing, and farmers' desired contribution to the mix. Networking and information-sharing was also critical to project development. Several start-up farmers worked with staff to refine their business and farming practices. Staff also facilitated networking among farmers for peer-to-peer support and mentoring, and referred farmers to community resources when outside expertise was needed. During the interviews, staff described this approach as "applied and real time" business development that created an "open environment for farmers and staff to support each other" as needed. Relationship-building efforts

paid off as the Intervale Food Hub was launched in spring 2008.

#### *Launch of the CSA, 2008*

To prepare for the CSA launch, staff developed a clear and consistent message for all marketing and promotional materials of the Intervale Food Hub. It should be noted that while staff and farmers refined marketing materials over time through an ongoing learning process, the project goals remained the same. Staff streamlined communication with project partners so that individuals worked consistently with specific staff based on expertise or existing relationships. The Intervale Center leased a 4,300 square foot (399 square meter) warehouse space and purchased a walk-in cooler and a delivery van in spring 2008. The CSA's pilot season ran from June to November 2008. Guided by a business plan, staff and farmers estimated a total quantity of products needed on a weekly basis to fulfill shares purchased by 122 subscribers (who were individuals, families, and households).

Intervale Center staff purchased products throughout the growing season from 30 farms. During the pilot season, purchasing of products was less formal and occurred weekly according to product availability rather than in advance of the season.

#### *Partnering with employers to maximize CSA marketing.*

Staff recruited seven businesses in the local area to be pick-up sites for shares during the 2008 CSA program so that their employees could access purchased shares at their workplace (see table 1). The concept of collaborating with businesses enhanced marketing efforts greatly by helping reach a larger, targeted audience and generating greater awareness of the local agricultural movement. However, several challenges occurred while soliciting sites. Many businesses were interested in supporting employee membership, but logistical issues such as use of parking space, customer traffic, security clearance, and prior approval from landlords did not make participation feasible. Several businesses also deferred their involvement until the CSA demonstrated a successful first season.

*Subscriber payment plans.* By mid-May 2008, the

Intervale Food Hub had sold shares to 122 customers at seven business pick-up sites. To increase the affordability of CSA membership, the Intervale Food Hub offered diversified payment options ranging from full, up-front payment to monthly payments of equal installments from May to September. Due to the payment plan options, Intervale Center staff paid farmers 25% of the payments received by May 2008 as advance capital. Farmers were also paid weekly based on items purchased. Staff reconciled farm accounts at the end of the season.

*Minimizing competition and promoting the local foods movement.* Staff made numerous efforts to co-market the Intervale Food Hub CSA alongside all other local CSA and food outlets in the county. Providing information on individual farms on the Food Hub website and other marketing materials minimized competition and educated consumers about all resources available.

*Addition of a winter share.* Staff conducted an online survey of subscribers at the end of the first CSA season to gather their feedback and develop future plans. Customers indicated high satisfaction with their share mix and the convenience of workplace pick-up. They also expressed demand for continued access to the CSA through the winter. Using the aforementioned planning model, staff and farmers immediately developed and sold a winter share option for employees of the seven business pick-up sites. The 2008–09 winter share generated US\$30,000 in sales revenue, compared with the US\$68,000 generated by the summer share (see table 1). The winter share helped provide subscribers with year-round access to local foods and extended farm production and access to a market beyond the growing season.

*Establishing the coordinator position.* By late 2008 staff roles became more defined and specialized based on individual skills and strengths that emerged from working together. One staff person demonstrated significant growth in leadership and coordination skills and became the project coordinator and primary liaison with farmers and consumers. The Intervale Center gave this staff person



more autonomy and decision-making authority, which improved the efficiency and effectiveness of business management. The coordinator's main responsibilities included advertising and marketing, securing pick-up sites, recruiting and invoicing subscribers, paying farmers, and overseeing product aggregation and delivery. This staff person also coordinated the advance crop planning process and was ultimately responsible for ensuring that consumers received high quality and diverse shares.

*Refining the advance crop-planning model.* In planning the second year of the CSA, the collaborative of farmers and staff refined and more formally implemented the practice of developing advance purchasing plans for each farm that itemized what product quantity they would supply to the CSA and during what time frame. This advance planning process enabled the coordinator and participating farms to design a share mix of products that ensured greater quantity, variety, and quality of products for subscribers. The collaborative met several times in winter 2008–2009 to define which farms would supply each product, reconciling diversity of products needed for shares, farm expertise in growing select, niche, high quality products, and prior contribution of farms to the Food Hub. Benchmarks for anticipated products were set for the following year based on the previous year's experience, expected increases in accounts, and any surplus or crop issues that farms faced. Staff and farmers prioritized equitable purchasing of products across farms, while accommodating farmers who wanted to supply more or less to the share mix. The end result of this planning process was a grid that delineated products each farm would supply during the CSA season. The coordinator provided an itemized crop plan to each farm in the spring, confirming the farm's agreed-upon contribution to the Intervale Food Hub in terms of product quantity, price, and delivery schedule. Farmers interviewed liked the organization and clarity of the advanced ordering process because they could more accurately plan for their growing season and manage business finances.

### *CSA Expansion, 2009–2011*

Building on the success of the pilot year, the CSA continued operation through 2009, with share pick-up at the seven original sites plus 13 additional locations and a total of 355 members (see table 1). In 2010, 25 business sites, including the original seven, participated in the CSA and, including the new student share program, membership increased to 555. New subscribers were solicited in a variety of ways. Some business sites sent an email to an employee-wide email list, depending on company policies. Previous subscribers were also contacted directly by email and mail to invite their return and ask for their help in promoting membership to others. Staff also advertised shares through posters and informational tables at businesses. In the second and third CSA seasons, share membership was opened up to the larger public rather than limiting membership solely to site employees by offering the Intervale Center as a pick-up site. However, employees remain the majority of subscribers. In addition to diversifying payment options, the CSA participates in the NOFA-VT Farm Share program. The Intervale Food Hub also launched a student share program for students at two local colleges, offering weekly share delivery to campus sites during the fall (September to December 2010) and spring (January through May 2011) semesters. These two programs had 117 members and grossed US\$33,000 in sales. The Intervale Food Hub plans to continue all four CSA options in 2011.

**Table 3. Examples of Intervale Food Hub Share Types and Cost for Summer and Fall Student Shares, 2010** (all values in US\$)

<i>Share type</i>	<i>Cost</i>
Summer vegetable share (small / large)	\$350 / \$525
Fruit and berry	\$295
Eggs (biweekly / weekly)	\$65 / \$125
Cheese	\$200
Bread	\$110
Meat sampler, monthly	\$250
Chicken, monthly	\$125
Fall student share (basic / deluxe)	\$260 / \$340

Examples of share types and cost are presented in table 3, which staff notes are priced competitively with area CSA programs. Share types are purchased by a number of employees at a variety of local businesses, such as a website development firm, snowboard manufacturer, and hospital. At the hospital, subscribers include doctors, nurses, and food service and custodial staff. In the first three years of the CSA, retention rates ranged from 30% to 40%. In 2009, the CSA had an average retention rate of 40%. Staff anticipates that customer retention will increase with the longevity of the business, as in the beginning, new members try out the program and determine if it is the right program for them.

*Refining product prices and operating margin.* At the start of the CSA, staff and farmers agreed that the prices farmers were paid for their crops were high in comparison to regular wholesale market prices. While high price points were profitable for farmers, in winter 2009 farmers chose to reduce produce prices to better reflect the market needs and help the Intervale Food Hub become economically viable over time. Farmers agreed upon a price list that is less than the original prices but still profitable and fair. Farmers will renegotiate this price list in the future as they see the need to do so. With these changes, the collaborative also agreed to slightly increase the proportion of gross revenue that covers business overhead costs from 30% to 35% to cover operational costs for business marketing, sales, product aggregation and packaging, and distribution to sites. Farmers interviewed recognize the Intervale Food Hub as a low maintenance, all-inclusive account that has a profitable return for farms. Intervale Center staff noted that any increase in the operating margin will be covered by business revenue and prices to farmers will not change from the set amounts (unless change is determined by the collaborative).

*Solidifying the collaborative.* During the first year of the project, 30 farms supplied product to the Intervale Food Hub. However, in the pilot season farmers and staff did not operate as the current collaborative, with farmers involved and invested in decision-making, because business relationships

were newly formed and farmers were still testing the waters of the food hub. By early 2009, 21 of the original 30 farms forged stronger business relationships and formed the base of the current collaborative. Alongside Intervale Center staff, these farmers have taken a more active part in business development, crop planning, and product pricing for upcoming seasons. Nine farmers chose to stop supplying food to the Intervale Food Hub, mainly because the account did not fully align with their individual business goals. For example, a smaller farm decided to market its products through its own CSA rather than participating in the aggregated, co-marketed program. The 21 core farms remain committed to the present, joined by three additional farms in 2010, growing the collaborative to a total of 24 farms. Fewer farms and more subscribers yielded a higher sales volume per farm, depending on quantity and variety of product purchased, with farm sales ranging from US\$180–US\$8,777 in 2008 and US\$750–US\$30,170 in 2010.

*Ownership of the facility.* Another critical change in 2009 was shifting the Intervale Food Hub's warehouse and cold storage facility space from the leased location to a newly renovated barn located adjacent to staff offices and owned by the non-profit. Staff determined that the capacity of the space was suitable to meet storage needs in terms of space per pounds of food (including dry, cold, wet, and frozen food), cooler and freezer space, and general climate and moisture control. The new, central location enhanced CSA operations. Though the overall square footage of the storage space is smaller than the previous site, on-site staff has better organized and utilized the space. Because the Intervale Center owns rather than leases this space, the building and property are maintained and tailored to better meet farmers' needs. In addition, business finances cover depreciation costs. The facility uses a code access padlock, allowing farmers to drop off and store delivery items in designated spaces at their convenience rather than during designated times. Staff offices are located next to this facility so they can meet with farmers who drop off product during business hours. The space is also more suitable for subscribers to visit so they can connect more directly with the business

and farmers. Additionally, the Intervale Center converted the basement of this facility into a regulated, cold storage space that the Intervale Center leases to neighboring farms for long-term winter storage. The Intervale Center is exploring plans to construct another storage, packing, and distribution facility on site to support business expansion.

#### *Expansion to Wholesale Distribution, 2010*

In 2010, the Intervale Food Hub launched a wholesale marketing and distribution program to area businesses and institutions, which is also managed and coordinated by Intervale Center staff. Intervale Food Hub farmers provide staff with a weekly list of products that are aggregated and provided to 30 area chefs and food buyers. Wholesale customers make biweekly purchases from the Intervale Food Hub and, similarly to the CSA, Intervale Center staff aggregate, package, and distribute products to each location. In the first year, wholesale sales reached US\$45,000 and returned 85% to participating farms. Wholesale sales provide farmers with a higher return compared to the CSA because this business is less labor intensive, even though wholesale markets demand a lower price point than a household market. The Intervale Food Hub's goal is to grow the wholesale program to US\$85,000 in gross sales by 2011.

#### *Examining Benefits to Farmers, 2010*

Interviews with farmers at the end of the 2009 CSA season explored their perceptions of how the Intervale Food Hub has benefitted their farm. A common theme that emerged from farmer interviews was that the Intervale Food Hub model, as refined over time, supports farm viability. The Intervale Food Hub is a reliable and fruitful account for farmers because of the advance crop planning and set product pricing. On average, shares are priced so that the farmers receive higher than standard wholesale prices for supplying wholesale quantities of products to the CSA. The price ranges between 5% and 30% above wholesale prices, varying by the crop. Farmers work with the Intervale Food Hub collaborative to set the prices for products they will supply, based on their cost of production as well as a realistic price that the market will bear. In general, farmers net between

60% and 70% of CSA share revenue and 85% of wholesale revenue. Farmers receive 25% of gross CSA sales as capital in advance, providing them with revenue early in the growing season when cash flow is generally limited. This model of advance capital and fair prices insulates farmers from some of the financial risks associated with a farming business. Farmers also benefit from time and cost savings associated with combined storage, marketing, and shared distribution.

Farmers also benefit from the Intervale Food Hub coordinator position, which alleviates farms' cost and responsibility associated with business management. Farmers expressed a high level of trust in business management and overall operations. All farmers interviewed also noted the benefit from working as a collaborative operation. Aggregating products from multiple farms has improved the quantity, quality, and variety of products available for Intervale Food Hub consumers (both CSA and wholesale). Collaborating also minimizes risks shared by a traditional single-farm CSA. For instance, if a single-farm CSA program suffers crop losses, subscribers would receive a reduced quantity or variety of products for the same cost. With multiple farms involved, the coordinator explained that she can make alterations to weekly purchasing plans to replace or substitute items as needed. However, she ensures that each farmer reaches his or her sales targets throughout the season. This practice of "real-time" buying for the Intervale Food Hub protects accounts from any unintended gaps in the quality and variety of their purchase.

#### *Exploring Ownership Models*

While the collaborative has loosely discussed ownership possibilities in the past, the collaborative plans to have more focused discussions on business and asset ownership options in 2011. Because grant funds were secured by Intervale Center staff, farmers were not asked to make a financial investment in the Intervale Food Hub. Grant funds allowed the Intervale Center and farmers to intentionally take an incremental approach to exploring ownership models of the food hub. Farmers are eager to continue this business with marketing and

distribution handled by the Intervale Center. Farmers are also interested in making a financial contribution to help sustain operations after grant funding ends and until the business breaks even (projected to occur in 2012). A small group of farmers who emerged as natural leaders of the group would like to transition the Intervale Food Hub into a more formal farmer cooperative. Staff explained that “some farmers want more decision-making power in the business while other farmers just want to supply product and get paid for it.”

As the Intervale Food Hub continues operation and business expansion, Intervale Center staff and farmers continue to discuss potential changes to the food hub. Who should own the CSA and/or wholesale businesses? Who should own facilities and other assets of the business to ensure they are maintained? What other grant funding, if any, might be available to support smaller needs of the project? How much money are farmers willing to invest and at what point is investment needed or not, such as only investing money if the business needs working capital to purchase assets (e.g., a delivery truck)? Should the business whittle down to a small core group of farmers or break into regional groups of farmers? Furthermore, once the business exceeds a certain scale and profit margin, at what level should the nonprofit remain involved? These questions illuminate the many possible ownership models and their implications that staff and farmers may consider as the Intervale Food Hub continues to expand.

### **Discussion**

Through CSA and wholesale purchasing, the Intervale Food Hub has the potential to provide farmers with solutions to the marketing, distribution, logistical, and storage challenges faced in meeting increased consumer demand. In its first three years, the Intervale Food Hub has demonstrated success in meeting financial targets and projections. If the business continues this upward trend and becomes economically viable by 2012, the Intervale Food Hub will have succeeded in creating a new, convenient, profitable, and fair market for farmers.

A related analysis of farm sales data conducted by the authors demonstrates that Intervale Food Hub sales to farmers significantly increased from 2008 to 2009 by an average of US\$3,188 ( $p=.01$ ) (Schmidt, Kolodinsky, Conte, DeSisto & Hyman, 2010). Supporting these findings, many farmers reported an increase in their farm’s food production, sales, and income because of their Intervale Food Hub account. Several farms located outside of Chittenden County also gained exposure to a new customer base. The Intervale Food Hub’s approach is similar to related ventures such as Eastern Carolina Organics (2009), Penn’s Corner Alliance (2011), and Grasshoppers Distribution (2011). Based on the findings, we present a strengths, weaknesses, opportunities, and threats (SWOT) analysis in table 4 (next page). The following narrative reviews the lessons learned from this case study, including strengths and limitations.

### *Use of Grant Funds*

Grant funds totaling approximately US\$229,000 supported research, business start-up, and development costs to avoid placing a financial burden on farmers, as would happen in a cooperative approach. Utilizing a nonprofit distributor or forming a nonprofit run by farmers are strategies that similar ventures can use to leverage grant funds or donations that offset start-up costs. Both private and public grant funds covered specific aspects of the business, such as background research, business planning, development of marketing materials, expansion into wholesale distribution, website development, and agricultural development work with farmers. However, grant funds generally did not cover the cost of day-to-day business operations. Use of grant funds enabled the staff and farmers to start the business using a participatory learning and adaptive process, allowing time for midcourse corrections rather than forcing hasty decisions to meet a bottom line. The Intervale Center’s ownership of the business allowed staff and farmers time to explore different ownership models using the participatory learning process in order to find the one that will best suit individual and group needs. Similar ventures that have relied on grant funds remain in business,

**Table 4. SWOT Analysis of the Intervale Food Hub**

<b>Strengths</b>	<ul style="list-style-type: none"> <li>• The Food Hub (FH) is made up of an engaged and committed group of farmers and nonprofit staff.</li> <li>• FH sales continue to increase.</li> <li>• The Intervale Center's ownership of the FH provides access to a diversity of farmers, program expertise, and funding.</li> <li>• The FH has significantly expanded the communities' access to fresh, local food.</li> <li>• The FH has attracted new local food customers. In its first year, 85% of subscribers had not previously participated in a CSA.</li> <li>• The FH provides single-contact access to over 25 local producers.</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• The FH meets the needs of only a small portion of the community, although the diversity of shareholder programs is growing.</li> <li>• CSA shares have a high up-front cost for consumers that may not be sustainable.</li> <li>• Some farmers expressed concern about maintaining their individual farm identity and questioned whether subscribers feel a connection to the producing farms because farms are removed from employer-based pick-up sites. The FH has taken many measures to address this issue.</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>• The FH could expand distribution to additional institutional markets, such as countywide farm to school distributions.</li> <li>• The FH could expand its geographic distribution throughout the state and to other states.</li> <li>• Farmer ownership models can be explored.</li> </ul>
<b>Threats</b>	<ul style="list-style-type: none"> <li>• There is a potential divide between the needs of small growers, who want to sell small volumes at high prices, and larger growers, who want to sell higher volume at lower prices. Farmers have agreed upon uniform prices for all growers.</li> <li>• More farms are offering convenient services like those of the FH. The continued growth of CSA programs will force the FH to compete in this market.</li> <li>• Overhead costs of the FH might be too high because the business is labor intensive.</li> </ul>

including Farm Fresh Connection LLC (2009), Red Tomato (Stevenson, 2009), Good Natured Family Farms (Dreier & Taheri, 2008), and Penn's Corner Farm Alliance (2011). The Intervale Food Hub aims to be financially viable and no longer reliant on grant funding by 2012, having the CSA and wholesale markets generate US\$500,000 in local food sales and returning US\$325,000 into the hands of farmers. To reach this breakeven point, the Intervale Food Hub needs to increase both CSA and wholesale revenues.

#### *Strong Working Relationships*

The staff and farmer collaborative of the Intervale Food Hub is the result of strong, ongoing communication and relationship-building efforts, which mirror the conclusions of Jarosz (2000). Communication and relationship-building framed the Intervale Food Hub as a collaborative of co-learners rather than as a set of players in a "top down" approach where experts control and instill

knowledge in local practitioners. Future programs should make sure that staff and farmers build trust and a rapport of mutual respect. Food Hub farmers have become personally invested in sustaining operations and may consider different ownership and investment models. Similar nonprofit-initiated ventures such as the Farm Fresh Connection LLC (2009) and Eastern Carolina Organics (2009) have successfully transitioned to farmer-owned cooperatives.

#### *Paid Staff Coordination*

The Intervale Food Hub's success in building strong relationships was due in part to having paid staff to coordinate business operations and provide consistent communication with customers, project partners, and farmers. The paid coordinator position minimized the strain on farmers' time and resources. Farmers noted a high level of trust and respect for the coordinator of the Intervale Food Hub, who has held that position since the pro-

gram's inception. There is a concern, however, that the trust and rapport between staff and farmers that characterize and bolster the current business model would need to be reestablished if this position turned over.

Current Intervale Food Hub positions include a full-time business manager/coordinator (with benefits), a full-time CSA coordinator (with benefits), and a part-time packing and distribution staff person. These positions are projected to be covered as part of business expenses once the venture breaks even. Staff members also recognize that paid staff positions and their job descriptions may change in the future, depending on who (the non-profit or the farmers) owns the business. Staff members recommend that newer programs with less experience should consider engaging community members and local professionals as an advisory board to provide outside expertise and a consumer perspective.

#### *Multifarm Aggregation*

Aggregating products from multiple farms yielded favorable returns to farms for supplying select, specialty, and niche products to the mix. Aggregating a variety of products from farms of varying size and expertise helped to minimize the shared risks inherent in a single-farm CSA or wholesale program, such as smaller quantity or less variety of products during difficult growing seasons. Ventures should consider tailoring an advance planning and payment model, as used by the Intervale Food Hub, to best meet farmer needs. However, a challenge to this approach is maintaining equity among farmers in terms of the volume, price, and diversity of products the farmers wish to provide. In a multifarm model, there is also the potential for tensions to divide growers based on preferences, such as small growers who want to sell small volumes at high prices and larger growers who want to sell more volume at lower prices.

#### *Farmer-led Development of Pricing*

The Intervale Food Hub is committed to providing a consistent market and fair prices for farmers. In the winter of 2009, farmers agreed on the price list for Intervale Food Hub purchases. The business

returns between 65% and 70% of CSA and 85% of wholesale gross sales to farmers. The Food Hub is currently running on a combined 40% margin, and the goal is for all expenses to eventually be covered by revenue.

During the first year of CSA operations, farmers enjoyed high prices set for wholesale quantities of food. However, many questioned whether the prices were sustainable, suggesting that prices should be lowered to increase affordability and maintain or increase demand. Farmers and staff realized this limitation of the Intervale Food Hub's price structure and instituted several strategies to balance affordability for customers while providing a reasonable profit margin. In 2009, farmers agreed upon a reduced yet fair price list for summer and fall/winter seasons, including different unit prices for CSA and wholesale products. The Intervale Food Hub also offered alternative payment plans so customers could pay down their account on affordable terms. The Food Hub participates in the NOFA-VT Farm Share program and in the past offered subscribers the opportunity to make a donation in support of reduced-rate shares. As an improved strategy, in 2011 the Food Hub developed a low-income access program where 1% of all share sales are put into a fund to subsidize 30 shares for qualified low-income households. The Food Hub has also acquired an EBT machine so that members can pay with food stamps.

In addition to alternative payment strategies, staff and farmers recommend that other programs, specifically single-farm CSAs, consider offering a "working membership" option, as suggested by Fieldhouse (1996) and Kneen (1993), to increase the affordability of share membership and further engage CSA members. A working membership is not feasible for the Intervale Food Hub because simple volunteer options such as providing on-farm labor are not available from the business as a whole, while packing and distributing shares are complex processes requiring high levels of management and quality control.

### *Partnering with Local Employers*

A strong marketing strategy of the Intervale Food Hub was to partner with local employers, universities, and colleges to provide employees and students with convenient share pick-up sites. The Food Hub reached a large target market through word-of-mouth referrals and visibility during share pick-up times. Staff members hope that subscribers will continue to encourage their employers to purchase wholesale products to sell on site or serve in cafeterias, which has occurred in the cafeterias of several CSA businesses. Staff and farmers recommend that similar ventures work with employers and insurance companies to promote cost sharing or reimbursement of CSA membership for individuals because of the preventative health benefits associated with eating a diet high in vegetables and whole foods. Though Food Hub shares are available for purchase by the general public and are no longer restricted to employees, employees remain the majority of Food Hub subscribers. The general public might benefit from increased access to shares if the Food Hub selected conveniently accessible public places as pick-up locations, in addition to alternative pricing options. Staff members and farmers also recommend using the program website as a tool for real-time brokering so that subscribers can make specific share selections or purchase additional products at their convenience.

### *Maintaining Farm Identity and Traceability*

Because the Intervale Food Hub fuses a brokerage and CSA model, the direct connection of the producer to the consumer is limited when compared with a single-farm CSA. Farmers questioned whether subscribers feel a connection to the producing farms since the farms are removed from employer-based pick-up sites. Some farmers also expressed concern about maintaining their individual farm identity while participating in the collaborative. Food Hub staff co-marketed individual farms alongside the Food Hub and informed subscribers weekly of the individual farms that supplied each product. Farmers recommend that similar collaborative programs use multiple marketing formats to inform subscribers about individual farms, their specialties, and where

customers can find their products (e.g., local grocery stores, farmers' markets, or pick-your-own locations). The Food Hub also provided subscribers with opportunities to get to know farmers more directly at varying levels. Opportunities included an electronic newsletter sent to subscribers that lists weekly share contents per farm and highlights a different farm each week; the Intervale Food Hub website that included farm descriptions, contact information, and links to farm websites; and Food Hub and general community dinners hosted by the Intervale Center, which were events and celebrations where subscribers and the public could meet farmers and sample and purchase products directly from them.

### **Conclusions**

Using the published literature, informant expertise, and participatory learning research methods, this case study describes the process of creating and refining the Intervale Food Hub and its business outcomes. Through the Intervale Food Hub, farmers benefitted from creative strategies to secure stable, new markets and mitigate challenges with marketing, distribution, and storage. Consumers gained weekly access to a variety of fresh, local agricultural products that were delivered conveniently to their workplace as prepackaged shares. Wholesale purchasing also increased the use of local foods by 30 area businesses, schools, and restaurants. A preliminary analysis of financial data shows that this approach has effectively increased income for all participating farms (Schmidt et al., 2010), while providing customers with increased year-round access to fresh, local food. The Intervale Food Hub incorporates innovative strategies to assist farmers with securing new, stable markets that provide a relatively high financial return for their products with low overhead costs.

Critical components of the project's progress to this point include:

- Use of grant funding and revenue-generating opportunities;
- Relationship-building strategies;
- Staff coordination of the business;

- Multifarm collaborative and aggregation;
- Combined marketing, storage, and delivery;
- Maintenance of farm identity and traceability;
- Real-time and peer-to-peer business assistance to farmers;
- A CSA that features weekly workplace delivery of a high quality and diverse share, available year-round; and
- Wholesale to 30 area businesses.

Agriculture professionals and practitioners seeking to implement creative solutions to support their local food system should consider the promising practices and limitations observed in this case study.

The Intervale Food Hub enterprise and other food systems businesses and programs could benefit from additional research conducted on household and institutional consumer demand for local food products and additional needs of area producers to serve expanded markets. The following are recommendations from researchers and program staff on future research topics:

- Future research could include conducting shareholder and communitywide surveys on an annual basis to build relationships and awareness of the local foods movement, determine shifts in consumer needs, and generate new ideas to improve program offerings.
- Intervale Center staff members recommend conducting consumer studies to determine what facets of the program consumers value, which may offer insight on ways to maximize consumer satisfaction, membership renewal, and project expansion. This information could also inform household-level educational materials about the local food movement, which could be distributed to households, work places, and other

community sites such as schools, churches, medical offices, and civic centers.

- Future research should explore the experiences of farmers as this initiative evolves over time, examining how farms benefit from the Intervale Food Hub, both financially and in other ways. Other questions include: what percentage of total farm revenue comes from Intervale Food Hub sales and how does this percentage change over time? Does the multifarm business model protect individual farms from the financial hardship associated with crop loss?
- Other areas to explore include the production levels required to meet large-scale demand, the optimal number of farms necessary for a profitable program, and how much money, if any, farmers should pay to invest in and take ownership of the business.

### Acknowledgements

The authors would like to thank the Intervale Center staff, including Sona Desai, Mandy Davis, Travis Marcotte, and Mark Cannella, and Intervale Food Hub farmers and subscribers for providing their time and thoughtful contributions to this case study. We also appreciate the support of research staff at the Center for Rural Studies and students in the Department of Community Development and Applied Economics at the University of Vermont. This project was funded in part by a USDA Sustainable Agriculture Research and Education (SARE) grant.

### References

- Abda, L. (2007). *Determining the feasibility of a Burlington food hub among Chittenden County restaurants*. Unpublished Survey. Burlington, Vermont: Intervale Center.
- Addison County Regional Planning Commission (ACRPC). (2008, May 14). *Addison County regional plan*. Retrieved from [http://www.acrpc.org/pages/publications/reg\\_plan.htm#PDF](http://www.acrpc.org/pages/publications/reg_plan.htm#PDF)
- Azuma, A. M., & Fisher, A. (2001). *Healthy farms, healthy kids: Evaluating the barriers and opportunities for farm-to-*



- school programs*. Portland, Oregon: Community Food Security Coalition.
- Berlin, L., Lockeretz, W., & Bell, R. (2009). Purchasing foods produced on organic, small and local farms: A mixed method analysis of New England consumers. *Renewable Agriculture and Food Systems*, 24, 267–275. <http://dx.doi.org/10.1017/S1742170509990111>
- Bruhn, C., Chapman, E., Vaupel, S., & Vossen, P. (1992). Consumer attitudes towards locally grown produce. *California Agriculture*, 46 (4), 13–18.
- Campbell, L., & Pearman, C. (1994). *Locally produced foods sold in Renfrew County: Survey of food retailers and distributors*. Ontario, California: Association for Agricultural Self-Reliance.
- Central Vermont Regional Planning Commission (CVRPC). (2008). *Central Vermont regional plan*. Montpelier, Vermont: Author. Retrieved from [http://www.centralvtplanning.org/Full\\_Copy\\_CVRegionalPlan.pdf](http://www.centralvtplanning.org/Full_Copy_CVRegionalPlan.pdf)
- Chittenden County Regional Planning Commission (CCRPC). (2006). *Chittenden County regional plan*. Winooski, Vermont: Author. Retrieved from [http://www.ccrpcvt.org/index.asp?Type=B\\_BASIC&SEC={9611EE71-D664-4599-919B-64B6DFOC79CA}](http://www.ccrpcvt.org/index.asp?Type=B_BASIC&SEC={9611EE71-D664-4599-919B-64B6DFOC79CA})
- Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data: Complementary research strategies*. Thousand Oaks, California: Sage.
- Day-Farnsworth, L., McCown, B., Miller, M., & Pfeiffer, A. (2009). *Scaling up: Meeting the demand for local food*. Madison, Wisconsin: UW-Extension Ag Innovation Center & UW-Madison Center for Integrated Agricultural Systems. Retrieved from [http://www.cias.wisc.edu/wp-content/uploads/2010/01/baldwin\\_web\\_final.pdf](http://www.cias.wisc.edu/wp-content/uploads/2010/01/baldwin_web_final.pdf)
- Dreier, S. & Taheri, M. (2008). *Innovative models: Small grower and retailer collaborations*. Arlington, VA: Wallace Center at Winrock International. Retrieved from <http://www.wallacecenter.org/our-work/Resource-Library/wallace-publications/Good%20Natured%20Family%20Farms%20Innovative%20Model.pdf>
- Eastern Carolina Organics. (2009). *Your local farm to table connection*. Pittsboro, North Carolina: Author. Retrieved from <http://www.easterncarolinaorganics.com>
- Farm Fresh Connection. (2009). *Wholesale distribution*. Portland, Maine: Maine Sustainable Agricultural Society. Retrieved from <http://www.farmfreshconnection.org>
- Farnsworth, R. L., Thompson, S. R., Drury, K. A., & Warner, R. E. (1996). Community supported agriculture: Filling a niche market. *Journal of Food Distribution Research*, 27(1), 90–98.
- Feenstra, G. W. (1997). Local food systems and sustainable communities. *American Journal of Alternative Agriculture*, 12(1), 28–36.
- Fieldhouse, P. (1996). Community shared agriculture. *Agriculture and Human Values*, 13(3), 43–47.
- Fricker Group & Sunflower Strategies. (1994). *Collective marketing strategy for Humboldt County food products industry*. Santa Rosa, California: Author.
- Garrett, S., & Feenstra, G. (1999). *Growing a community food system*. Pullman, Washington: Western Rural Development Center.
- Glesne, C. (1999). *Becoming qualitative researchers: An introduction, 2nd Edition*. New York, New York: Addison Wesley Longman, Inc.
- Grasshoppers Distribution. (2011). *Making the leap to local foods*. Louisville, Kentucky: Author. Retrieved from <http://www.grasshoppersdistribution.com>
- Grower's Collaborative. (2010). *Grower's Collaborative: A program of Community Alliance with Family Farmers (CAFF)*. In L. Day-Farnsworth, B. McCown, M. Miller, & A. Pfeiffer (Eds.), *Scaling Up: Meeting the Demand for Local Food* (pp. 9–10). Madison, Wisconsin: University of Wisconsin–Madison, Center for Integrated Agricultural Systems. Retrieved from [http://www.cias.wisc.edu/wp-content/uploads/2010/01/growers\\_collaborative.pdf](http://www.cias.wisc.edu/wp-content/uploads/2010/01/growers_collaborative.pdf)
- Hamm, M. W. (2008) Linking sustainable agriculture and public health: Opportunities for realizing multiple goals. *Journal of Hunger and Environmental Nutrition*, 3, 169–185.
- Herrin, M., & Gussow, J. D. (1989). Designing a sustainable regional diet. *Journal of Nutrition Education*, 21(6), 270–275.
- Intervale Center. (2007). *Burlington Food Hub: Innovative direct marketing opportunities*. Proposal submitted to USDA SARE grant program. Unpublished document. Burlington, Vermont: Author.

- Intervale Center. (2009). *Expanding local food production, storage and marketing capacity in Vermont: Results from the 2007 farm producer survey*. Burlington, Vermont: Author. Retrieved from [http://www.intervale.org/programs/agricultural\\_development/index.shtml](http://www.intervale.org/programs/agricultural_development/index.shtml)
- Jarosz, L. (2000). Understanding agri-food networks as social relations. *Agriculture and Human Values*, 17, 279–283.
- Johnson, D. B., & Stevenson, G. W. (1998). *Something to cheer about: National trends and prospects for sustainable agricultural products in food service operations of colleges and universities*. Madison, Wisconsin: Center for Integrated Agricultural Systems at the University of Wisconsin–Madison.
- King, R. P., Hand, M. S., DiGiacomo, G., Clancy, K., Gómez, M. I., Hardesty, S. D., Lev, L. & McLaughlin, E. W. (2010) *Comparing the structure, size, and performance of local and mainstream food supply chains*. (U.S. Dept. of Agriculture, Economic Research Service Report ERR-99). Retrieved from <http://www.ers.usda.gov/Publications/ERR99/ERR99.pdf>
- Kneen, B. (1993). *From land to mouth: Understanding the food system*. Toronto, Canada: NC Press Limited.
- Kolodinsky, J. M., DeSisto, T. P., & Schmidt, M. C. (2009). Consumption patterns and demand for local food in Chittenden County, Vermont. *Consumer Interests Annual*, 55, 118.
- Krueger, R. A., & Casey, M. A. (2009). *Focus groups: A practical guide for applied research*. 4<sup>th</sup> edition. Thousand Oaks, California: Sage.
- Lappé, F. M. (1975). *Diet for a small planet*. 10<sup>th</sup> Edition. New York, New York: Ballentine Books.
- Lappé, F. M., & Collins, J. (1978). *Food first: Beyond the myth of scarcity*. Revised Edition. New York, New York: Ballentine Books.
- Lockeretz, W. (1986). Urban consumers' attitudes towards locally grown produce. *American Journal of Alternative Agriculture*, 1(2), 83–88.
- McIntyre, A. (2008). *Participatory action research*. Thousand Oaks, California: Sage.
- Meter, K. (2010). Metrics from the field: Letting food systems emerge. *Journal of Agriculture, Food Systems, and Community Development*, 1(1), 23–26.
- O'Brien, R. (1998). An overview of the methodological approach of action research. In R. Richardson (Ed.), *Theory and practice of action research*. Joao Pessoa, Brazil: Universidade Federal da Paraíba. (English version). Retrieved from <http://www.web.ca/~robrien/papers/arfinal.html>
- Orth, R. H. (2003). Vermont geography, weather and natural history. In J. J. Duffy, S. B. Hand, & R. H. Orth (Eds.), *The Vermont Encyclopedia*. Lebanon, New Hampshire: University Press of New England.
- Patton, M. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, California: Sage.
- Penn's Corner Farm Alliance. (2011). *What is Penn's Corner?* Sheloceta, Pennsylvania: Author. Retrieved from <http://www.pennscorner.com/description>
- Podhaizer, S. (2009, June 16). Taste test: The Farmers Diner [Electronic version]. *Seven Days*. Retrieved from <http://www.7dvt.com/2009taste-test-farmers-diner>
- Pretty, J. N. (1995). Participatory learning for sustainable agriculture. *World Development*, 23(8), 1247–1263.
- Schattman, R., & Cannella, M. (2008). *Maintaining farm identity through alternative marketing practices*. Burlington, Vermont: Intervale Center. Retrieved from [http://www.intervale.org/programs/agricultural\\_development/index.shtml](http://www.intervale.org/programs/agricultural_development/index.shtml)
- Schmidt, M. C., Kolodinsky, J., Conte, F., DeSisto, T., & Hyman, J. (2010). *The Multi-farm Community Supported Agriculture Model: Assessing the Economic Impact of Combined Storage, Distribution, and Marketing of Local Food Products for Small- and Mid-sized Farms*. Paper presented at the annual meeting post-conference workshop of the Northeast Agricultural and Resource Economics Association, Atlantic City, New Jersey, June 15–13, 2010. Retrieved from [http://www.narea.org/2010/workshop%20pres/Schmidt\\_NAREA2010Workshop.pdf](http://www.narea.org/2010/workshop%20pres/Schmidt_NAREA2010Workshop.pdf)
- Schneider, M. L., & Francis, C. A. (2005). Marketing locally produced foods: Consumer and farmer opinions in Washington County, Nebraska. *Renewable Agriculture and Food Systems*, 20, 252–260. <http://dx.doi.org/10.1079/RAF2005114>
- Stephenson, G., & Lev, L. (2004). Common support for local agriculture in two contrasting Oregon communities. *Renewable Agriculture and Food Systems*, 19, 210–217. <http://dx.doi.org/10.1079/RAF200481>

- Stevenson, S. (2009). *Values-based food supply chains: Red Tomato*. Madison, Wisconsin: University of Wisconsin–Madison, Center for Integrated Agricultural Systems. Retrieved from <http://www.cias.wisc.edu/wp-content/uploads/2009/07/rtcasestudyfinalrev.pdf>
- Story, M., Hamm, M. W., & Wallinga, D. (2009). Food systems and public health: Linkages to achieve healthier diets and healthier communities. *Journal of Hunger and Environmental Nutrition*, 4(3/4), 219–224.
- Thomson, J., & Kelvin, R. (1994). *A community systems approach to sustain agriculture in urbanizing environments: Developing a regional marketing infrastructure*. University Park: The Pennsylvania State University, Department of Agricultural and Extension Education.
- Timmons, D. (2006, April). Local Food in Vermont: Mixed Messages [blog post]. *Vermont Commons*. Retrieved from <http://www.vtcommons.org/journal/2006/04/dave-timmons-local-food-vermont-mixed-messages>
- United States Department of Agriculture National Agriculture Statistics Service (USDA NASS). (2007). Census of Agriculture. *Market value of agricultural products sold including landlord's share and direct sales, 2007 and 2002: State level* [Data file]. Retrieved from [http://www.agcensus.usda.gov/Publications/2007/Full\\_Report/Volume\\_1,\\_Chapter\\_1\\_State\\_Level/index.asp](http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/index.asp)
- Wadsworth, Y. (1998). What is participatory action research? Paper 2. *Action Research International*. Retrieved from <http://www.scu.edu.au/schools/gcm/ar/ari/arihomet.html>