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By James Matson, Martha Sullins, and Chris Cook

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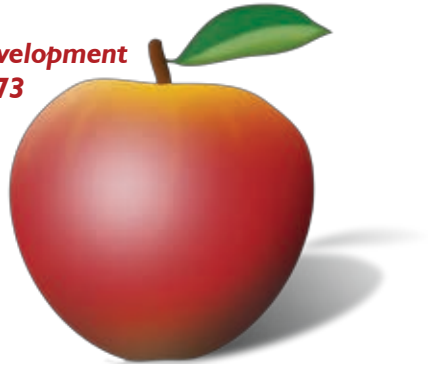


KENTUCKY MARKET PAVILION

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In the commodity food chain, agricultural products are mixed together and combined or aggregated into larger groups to be sold, usually with no identification of the farm where they were grown. The large scale and lack of identification in traditional commodities, coupled with the associated low margins, have led to the emergence of food value chains as an option for farmers and ranchers to differentiate their products and enter a market that is more financially viable.[1]

Local food sellers have determined that consumers are willing to pay a premium if they know

1 Adam & Barham, 2011

about the origins of local and regional food.[2] However, a 2010 report by the United States Department of Agriculture (USDA), Economic Research Service noted that one of the main constraints to the entry and expansion of local foods is the "lack of distribution systems for moving local foods into mainstream markets."[3] This need has spawned the creation of collaborative supply chains and to market these differentiated products.[4] One emerging collaborative model is the food hub. USDA's working definition of a regional food hub is "…a business or organization that actively manages the aggregation, distribution and marketing of source-identified food products, primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail and institutional demand."[5]

In the past few years, there has been increasing recognition of food hubs as a way for a group of producers to access local markets for their agricultural production. In many cases, food hubs share information with end users on where or how food was produced, providing a greater connection between producers and consumers.

2 Day-Farnsworth et al. 2009
3 Martinez et al., 2010
4 Diamond and Barham, 2012
5 Barham et al., 2012

Recognition of the role of food hubs is occurring at many levels, from a growth in brick and mortar facilities and "virtual food hubs" to support from many programs, including local, State, and Federal grants and loans.

One of the main constraints to the entry and expansion of local foods is the lack of distribution systems for moving local foods into mainstream markets.

The target markets for these services are typically wholesale customers – institutions, restaurants, and grocery stores – which have a harder time buying local product in the desired volumes. Food hubs can also provide greater delivery reliability than can be obtained through purchasing from many producers selling independently.

Food hubs have developed and evolved as highly localized businesses that are dependent on several factors. This report presents an overview of the myriad issues facing food hubs across the United States. It attempts to look for patterns and practices that are consistent enough to be used as models in a wider development process. The goal is to ascertain what food hubs need to do to serve as a viable solution for local food marketing.

The information presented includes defining a food hub, examining the rationale for food hub formation, and exploring the economic role of food hubs. This paper also presents some of the many organizational structures and services that are offered by food hubs, including the emerging area of virtual food hubs, and provides examples that represent some of the challenges and limitations faced by food hubs. The overall intent of this document is to help present food hubs within the context of the growing local foods movement.

Food hubs as rural development

Food hubs represent a strategy for producers, particularly small and mid-sized producers, to market their production locally. Food hubs create new marketing opportunities for rural food producers.

They help connect rural producers as directly as possible to rural, suburban, and urban markets. This creates a system of linkages, developed through food hubs, that enables both rural producers and urban consumers to learn from each other.

Entry into local food markets can prove difficult for many farmers, particularly small and mid-sized farmers, with capacity constraints and the lack of distribution systems most often being the largest hurdles to overcome.[6] Food hubs are part of a growing local food system that strengthens rural economies by lowering entry barriers and improving infrastructure to create, as well as expand, regional food markets. They can also create rural jobs. This rural on- and off-farm employment can expand opportunities and encourage skilled people, including youth, to remain in rural areas.

Consumer decisions to buy local or purchase items for specific product characteristics have proliferated into new marketing opportunities for farmers and ranchers.

6 Martinez et al, 2010

Local foods "buzz"

Less than 2 percent of Americans today live on farms and ranches. Perhaps because of this disconnect, American consumers have a growing interest in learning more about where their food comes from and connecting with farmers and ranchers in their region.

Local food is still a small portion of the total food market. A report by the USDA Economic Research Service shows that more than $77 billion worth of food was imported into the United States in 2007,[7] while local food sales totaled slightly less than $5 billion in 2008[8] – but its share has grown steadily over the past several decades.

Over the past 10 years, there has been a surge in demand for locally produced foods. The availability and amount of local food products are unprecedented in recent history. Consumer decisions to buy local or purchase items for specific product characteristics have proliferated into new marketing opportunities for farmers and ranchers.

In addition, local direct marketing opportunities – such as farmers' markets, retail food cooperatives and Community Supported Agriculture (CSAs) – have grown as consumers have been increasingly looking for local and regional foods. The 2007 Census of Agriculture reported that more than 12,500 farms participated in some form of CSA.[9] This is a dramatic increase from the handful of farms that used this direct marketing method in the mid-1980s.

A National Grocers Association survey conducted in 2011 (online at: www.supermarket guru.

What is a local food?

The term "local food" is used often, and with various and sometimes contradictory interpretations. The new Oxford American Dictionary defines a "locavore" as a local resident who tries to eat only food grown or produced within a 100-mile radius.

Likewise, many consumers and policymakers define local as being within a 100-mile radius of one's home, while others feel that 200, 300, or 400 miles can still be considered a local food. Even the Federal Government varies its definition of local:

- The 2008 Farm Act defines a "locally or regionally produced agricultural food product" as one that is marketed less than 400 miles from its origin."
- The Food Safety Modernization Act, enacted in January 2011, defines local as food purchased within 275 miles or the same State where it was produced.

However, Martinez et al. say that the definition of "local" differs by region and climate, because a sparsely populated area will likely have a very different definition of local than a more heavily populated one.

In short, local food may depend on both what food item you are discussing and where you are located. It may not be possible to have one definition that fits all circumstances. So local food should have a "flexible" definition that relies not only on the distance from which products are sourced, but also where the product itself was produced and how extensive a system is required to get it to the consumer.

7 Brooks et al., 2009
8 Martinez et al., 2010
9 http://www.nal.usda.gov/afsic/pubs/csa/csa.shtml

com/public/pdf/Consumer-Panel-Survey-2011.pdf) found that 85 percent of consumers say they choose their grocery store based in part on whether it sources food from local producers. This supports a 2008 national survey of consumer buying patterns that found that 35 percent of consumers surveyed felt that buying locally produced fresh produce was of great importance to them, while another 44 percent said it was of moderate importance.

Social values also motivate consumer behavior. Many shoppers in the 2008 survey were concerned about whether or not their purchases helped to maintain local farmland and the local economy; 44 percent and 49 percent, respectively, indicated that these public benefits were of great importance to them.[10] Those who tended to shop at farmers markets were most concerned with maintaining local farmland, with 70 percent indicating that this was of great importance to them, compared to 31 percent of those who shopped at supermarkets.

In a similar vein, nearly 80 percent of farmers' market shoppers were most concerned that their produce purchases supported the local economy, compared to 43 percent of those who identified themselves as supermarket shoppers.

Steve Stevenson, as part of the Agriculture of the Middle Project convened by Iowa State University, has described in a series of case studies how farmers, distributors, retailers, and food processors coordinate their actions for mutual economic benefit while advancing social and ethical values, such as agricultural sustainability and farm viability (Stevenson, 2009).

"Everywhere" is a local market

The increased demand for local foods is evident in the growth of direct marketing channels and in the number of farmers using those channels to move their products. USDA's Agricultural Marketing Service lists 7,864 U.S. farmers' markets in operation in 2012, up from 7,175 the previous year, for a 1-year increase of nearly 10 percent. This includes many markets that allow lower income consumers to purchase food through Federal nutrition benefits programs.

Consumers are expected to continue this trend of purchasing locally produced products. According to a recent study by USDA's Economic Research Service, local food sales through all marketing channels in the United States grossed $4.8 billion in 2008.[11]

One example of such consumer-driven demand is from the Web site of the Weaver Street Market, a community-owned grocery store and cooperative located in Carrboro, NC. It notes that: "Almost half of the food we sell at Weaver Street Market is produced locally, including the breads, pastries, soups and salads we craft in our own kitchen. Local goods show up in every department, from fine wines and gourmet

Food hub definition

Roget's Thesaurus (2010) defines a hub as a:

1. point of origin from which ideas or influences originate; or
2. place of concentrated activity, influence, or importance.

In agricultural systems, hubs have emerged to coordinate some aspect of the production, processing and/or marketing of food to meet consumer demand for local, fresh, organic or other value-laden products.

10 McFadden, Thomas and Onozaka, 2009

11 USDA Agricultural Marketing Service, 2012

chocolate, to shampoo and herbal remedies."[12]

Farmers are producing more than ever to meet this burgeoning demand. The 2007 Census of Agriculture reports that nearly 137,000 farms sold products directly to consumers, totaling a little more than $1.2 billion. Direct sales represented about 0.5 percent of all sales in 2007, a 50-percent increase from 2002, with an additional 20,000 more farms each selling about $2,000 more per farm each year. Overall, from 2002 to 2007, average annual direct sales per farm increased from $6,958 to $8,853. These statistics do not include sales to regional grocers, restaurants, or institutions that in turn sell to consumers (so-called intermediated sales). An analysis by USDA's Economic Research Service found that marketing of local foods via both direct-to-consumer and intermediated channels grossed $4.8 billion in 2008—about four times higher than estimates based solely on direct-to consumer sales.[13]

Many diners expect their restaurant experience to include a selection of dishes conceived from local products. The restaurant industry found that the rising demand for locally produced foods was the Number 1 dining trend of 2011. But restaurants, grocery stores, and other institutions – such as schools, hospitals, nursing homes and corporate cafeterias – face obstacles of logistics and information in sourcing their food products locally. They also frequently cite the difficulty in obtaining the local products needed in a sufficiently large quantity for their foodservice needs.

The abundance of farmers markets and the emergence of larger scale retailers carrying local products (and promoting them) is a healthy indicator of market responsiveness to consumer demand.[14] Clearly, however, there is a coexisting uncertainty about how to develop markets that are typically supplied by larger scale, conventional producers with a distinct transportation and distribution structure built around moving and selling those conventionally produced foods.

Community-based organizations

Several food hubs have developed out of what can be termed as community-based organizations (CBOs). Examples include The Intervale Center, Appalachian Sustainable Development, Agriculture and Land-Based Training Association (ALBA), The Minnesota Food Association, and numerous others.

A CBO is a public or private nonprofit organization of demonstrated effectiveness that is representative of a community, or significant segments of a community. It provides educational or related services to individuals in the community (definition from the U.S. legal code). Perhaps most importantly, it plays a leading role in involving new or different groups of people in the civic life of local communities.

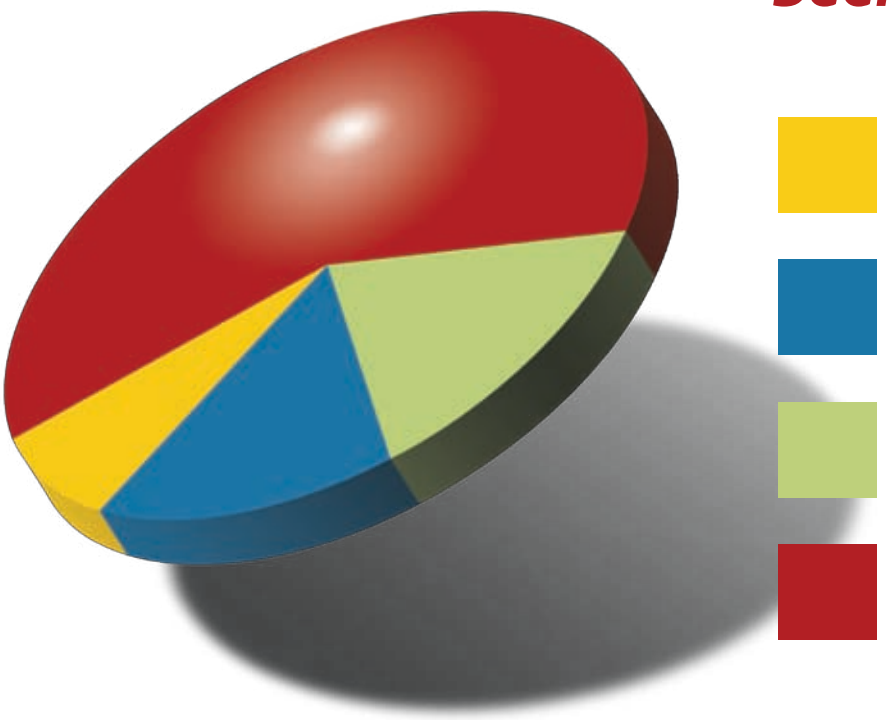
In agriculture, these organizations have made long-term commitments to developing the capacity of the producers they support, and creating infrastructure that supports and maintains market access for them.

What is a food hub?

Around the country, both formally and informally, food hubs are facilitating the aggregation, marketing and/or distribution of products from local farmers and ranchers to consumers (households, retailers, restaurants, institutions, and wholesalers) by developing scale efficiency and improving distribution.

12 http://www.weaverstreetmarket.coop
13 Low and Vogel 2011
14 Martinez et al., 2010

Time food hubs have been in existence



- 20 or more years — 9 percent
- 15 to 20 years — 16 percent
- 6 to 10 years — 9 percent
- 5 years or less — 60 percent

Source: USDA Agricultural Marketing Service

This section will look at the emergence of food hubs, the range of centralizing and aggregating roles they provide, and their importance in building food system infrastructure in:

- Meeting growing consumer demand for fresh, locally produced foods that are less available through traditional markets, and
- Catalyzing new marketing opportunities for producers and energizing local and regional economies.

USDA's working definition of a food hub is "a business or organization that actively manages the aggregation, distribution and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand."[15] Although the definition focuses on the physical movement of goods, USDA notes that a food hub can also be defined by market efficiency functions, in addition to more abstract goals of building a diversified food culture.

It is worthwhile to consider a broader definition of food hubs, in terms of function rather than form, for two reasons:

1. Many hubs have evolved from an educational or social mission to bring consumers and producers together in the marketplace. While selling local foods to consumers is one function, these hubs may also seek to educate their buyers about the importance of retaining food dollars in the local economy or keeping agricultural lands in production.
2. Second, some very functional hubs exist that do

15 Barham et al., 2012

not consist of brick and mortar facilities; rather, they "live" primarily in a virtual context and are thus able to transmit information quickly among buyers and sellers of local and regional food products. This is particularly pertinent in situations where lack of information is the key barrier to greater market efficiency. Virtual food hubs reduce the costs of access to local foods as well as allow for transactions to occur at any time. [16]

Food hubs as a community entity

Michael Hand identifies supply chains based on the proximity of the producer's transaction to the consumer, which may be: (1) direct producer to consumer or (2) intermediated with one or more middlemen handling the product before it reaches the consumer.[17] What differentiates this new generation of community-based food hubs is the focus on shortening the supply chain and often delivering more than just economic returns. For some of these community-based food hubs, the intended benefits may extend to a social good, environmental stewardship or capacity building for a group of agricultural producers.

Although food hubs still handle a small share of total food sales in the regions where they operate, they are able to reach a customer base that is typically far larger than that served by direct markets such as farmers markets and CSAs. For example, USDA found that, in the case of beef, the total volume of beef sold through an intermediate supplier in Minnesota was less than that sold to several retail supermarket locations, but 30 times more than that sold by the local direct market producer. While food hubs may not move the same volume of product as more conventional food channels, some feel that hubs are able to respond to changing consumer demand for innovation, quality, and variety more deftly than any single producer or any conventional retail outlet.[18]

Food hubs may also facilitate the transmission of social values along with the sense of social connection, exchange and trust that many consumers purport to value in the direct marketing experience.[19] One example is the Just Local Food Cooperative in Wisconsin. It notes that: "The cooperative's mission is to provide local and fairly traded goods, taking care to assure that the producers and workers involved are compensated appropriately, and that consumers have access to quality products at fair and reasonable prices. This co-op currently has more than 50 suppliers."[20]In that way, food hubs provide an important opportunity for rural producers, particularly small and mid-sized producers, to reach larger volume buyers in both rural and urban areas.

Breakdown of Regional Food Hubs

Food Hub Legal Status	*Number*	*Percentage*
Privately Held	67	40 percent
Nonprofit	54	32 percent
Cooperative	36	21 percent
Publicly Held	8	5 percent
Informal	3	2 percent

Market Model	*Number*	*Percentage*
Farm to business/ institution (F2B)	70	42 percent
Farm to consumer (F2C)	60	36 percent
Hybrid (both F2B & F2C)	38	22 percent

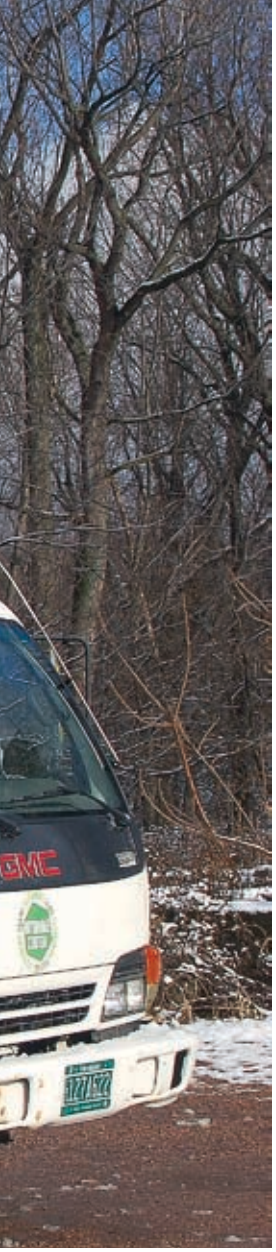
16 Matson, 2011
17 Hand, 2010
18 Tropp et al., 2008
19 Martinez et al., 2010
20 Day-Farnsworth et al., 2009

The Business Structure of Food Hubs

In general, the legal structure for a business provides specific mechanisms for management and decisionmaking within the business and delineates the manager's ability to seek investors or other sources of capital. A legal business structure also defines income tax liability, general risk management, and liability exposure.[21] In the case of food hubs, the legal business structure also keeps track of who has invested which resources, determines the opportunities for growth and expansion available by leveraging capital investments, and controls how different types of information are managed and exchanged.

In an environment where information helps facilitate efficiency in product development, production and marketing, and consumer feedback, legal structure is a critical aspect of a local food system. In other words, structure determines how the organization operates. This includes both internal operations – through the decision process among producer-members, managers, and other

21 Thompson and Hayenga, 2008



service providers – and how the hub relates to those outside the organization, such as its customers, lenders, and other producers.[22]

USDA's Regional Food Hub Resource Guide divides the structure of food hubs into a few organizational categories. Based on a working list of 168 food hubs, the report finds that privately held businesses are the most common type of food hub, accounting for 40 percent of the legal entities. Nonprofits – many of which are producer-owned and may function as a cooperative – are the next most common legal structure, accounting for 32 percent of all food hubs, followed by for-profit cooperatives at 21 percent. Other types of legal structure – publicly held food hubs and loosely organized food hubs – are relatively rare, representing 5 and 2 percent of all food hubs, respectively.[23]

Food hubs as nonprofits

One overview on the business organization of food hubs – in terms of ownership as a commercial entity or a nonprofit – points out that the organizing entity also defines the organization's mission and evolution. For example, the goals of a nonprofit may be tied more to a social mission than to business profitability. Therefore, the nonprofit may emphasize products that are more expensive to source, such as organic and fair trade products, but are valued by its consumer base.[24]

One example of this is Red Tomato of Canton, MA. Its Web site notes: "Our work connects the innovation, practicality and (sometimes the sheer adrenaline) of business, with the deliberation and creativity of nonprofit social change. We connect local, family farm production with fair pricing and supermarket availability; fresh, in-season, perfectly ripe produce with high standards of ecological stewardship; beautiful packaging with sustainable materials; risk-taking with fair trade for farmers; and science-based research with deep respect for traditional agriculture."[25] Red Tomato says its nonprofit status allowed it to innovate, create, react, learn, and share what it knows with colleagues in the sustainable food community.[26]

The Intervale Center in Burlington, VT, provides an example of how a nonprofit entity can catalyze other food system businesses and be responsive to producer or other supply chain member needs. An analysis produced by the Wallace Center finds that the Intervale Center's economic structure leverages revenue from its most profitable programs to underwrite other start-ups or initiatives with stronger social missions.[27] In this model, new ventures often grow out of the direct needs of Intervale Center farms and the broader farm community, such as the identification and documentation of distribution and storage needs. The focus on, and ability to cultivate, programs that respond to community and producer needs isn't as widely seen in other business models.

The evolving nonprofit entity

Over time, food hubs that started as projects or nonprofit entities may evolve to the point where a different business structure is more effective, especially when it becomes necessary to manage the complexities of contractual arrangements with third-party providers outside the hub's membership. Eastern Carolina Organics (ECO) started as a project of the Carolina Farm Stewardship Association (CFSA) in 2004, with a $48,000 Tobacco Trust Fund Commission grant. The initial goal of

22 O'Brien et al., 2005
23 Barham et al., 2012
24 Davis and Desai, 2007
25 www.redtomato.org (accessed Jan 2011)
26 Davis and Desai, 2007
27 Wallace Center, 2010

CFSA as a nonprofit association evolved into the mission of ECO as a private business to support emerging organic farmers and organic tobacco farmers while improving the supply of local organic produce.[28] In 2005, ECO became a private grower and manager-owned limited liability corporation with 13 growers and two staff owners.

Today, ECO works with more than 40 growers and 100 customers.[29] ECO owns its own refrigerated truck, which runs on biodiesel, enabling the organization to pick up produce on farm and deliver it to buyers the same day. ECO has evolved into a year-round supplier of fresh produce that helps small, organic, rural farmers access urban markets while providing the infrastructure for chefs, grocers and families to support local, sustainable agriculture. ECO farmers own 40 percent of the company and retain 80 percent of sales, with 20 percent going to three other non-farmer partners who manage the product brokering services.

One notable farmer-owned distribution company is Grasshopper Distribution in Kentucky. Grasshopper, which grew out of Community Farm Alliance (a nonprofit project), distributes food that originates in Kentucky or from nearby farms in southern Indiana. It is an independent producer-owned food hub that provides weekly service to restaurants, groceries, cafeterias, school systems and other food service clients.

All of its products are source verified and grown without the use of chemicals or pesticides. As a producer-owned business, it has developed its own packaging standards and price lists. Grasshopper also has specific requirements that result in a supply of similar-quality products among its farmers. Requirements include following produce packing specifications, becoming "Kentucky Proud" label certified, becoming Good Agricultural Practices (GAP) certified, and shipping product in transient containers. Grasshopper's goal is to pay fair prices to participating farmers, make payments to all vendors within 7 business days, and be transparent to its consumers by having a direct connection to the participating farms.[30]

The Agriculture and Land-Based Training Association (ALBA), a locally governed nonprofit organization in Salinas, CA, was incorporated in 2001 to increase the success of small-scale minority farmers in central California. ALBA helps these farmers overcome language and cultural barriers, a lack of resources, institutional exclusion, a historical lack of government support, and other barriers to their engagement in agriculture. ALBA provides support to these farmers so they can learn organic farming techniques and access new markets.

These sales outlets consist of institutional markets (such as schools, hospitals and retailers, including Whole Foods), distributors such as GreenLeaf Produce and the Growers Collaborative, and area restaurants. In 2002, ALBA established ALBA Organics as a licensed produce distributor to support the sales and training needs of ALBA farmers.[31]

ALBA Organics provides on-farm coolers and warehousing and delivery infrastructure at the ALBA farm near Salinas. It also connects its customers with locally grown products from small-scale, limited-resource, and beginning farmers. ALBA Organics also offers marketing education for farmers on use of different direct marketing outlets (farmers' markets, community supported agriculture), as well as training on packing and sales for wholesale and retail distribution. In addition to providing business education and incubation, ALBA also operates a small-farm incubator that provides some graduates with land leases and access to tractors and equipment at ALBA's 110-acre Rural Development Center near Salinas.

As another service, ALBA's Community Food Systems Program connects communities with locally grown fruits and vegetables, expands opportunities for small farmers, and improves low-income families' access to healthy and diverse local foods by establishing new farmers markets and farm stands.

28 Wallace Center, 2010
29 http://www.easterncarolinaorganics.com
30 http://www.grasshoppersdistribution.com
31 http://www.albafarmers.org

The Minnesota Food Association (MFA), northeast of Minneapolis/St. Paul, began in 1985 as a coalition of urban and rural individuals who wanted to work together to build a more sustainable food system. MFA has a stated commitment to "re-localizing food systems." It partners with other organizations and government entities to develop sustainable strategies that increase both the number of sustainable/organic farmers and the number of markets in which their products can be sold. These strategies include encouraging fair profits for the farmers, fair prices for the consumer, fair wages for the farm workers, good environment practices, good treatment of all people, and a positive influence to their community.[32]

In 1998, MFA launched a New Immigrant Agriculture Project (the Big River Farms Training Program) to work with new immigrant and minority farmers on increasing their skills in producing certified organic vegetables, accessing and developing markets for those vegetables, and learning the business management practices necessary to help them develop and maintain successful small farm enterprises. The association is nonprofit and relies on donor support to provide the resources required to achieve these goals.

In 2007, Big River Farms launched the Big River Farms CSA. Through the CSA, the farmers-in-training gain experience in growing diversified crops for market while the community benefits by gaining access to fresh, organically grown vegeta-

32 http://www.mnfoodassociation.org

bles. Participating farmers have the opportunity to sell their produce through the CSA or wholesale market channels provided by Big River Farms.

To date, MFA has "connected" local produce from its immigrant farmers to eight wholesale vendors, including Chipotle, the Saint Paul School District and Whole Foods. It has trained 140 farmers. The Minnesota Food Association also operates Harvest for the Hungry, a partnership with the Big River Farms CSA and other area CSAs to provide fresh, locally grown produce to low-income Minnesota households.

Cooperative-structured food hubs

There are many examples of food hubs formed through cooperatives, whether producer-led, retailer-led, or with consumer members. There are several advantages to the cooperative business structure that make it a good fit for an emerging food hub. The cooperative structure is a well-known and established community entity with strong roots in agriculture that is owned and democratically controlled by its members. The membership fees provide working and investment capital for the food hub, and any surplus revenues are returned to the members.

A co-op is managed by a board of directors elected by the members, which – in the case of a food hub – may be made up entirely of producers who will manage the organization to meet their members' needs, such as providing a fair return on products sold, arranging transportation of goods to end consumers, promoting a certain production practice, or serving a certain geographic area.

Many cooperatives – such as the Oklahoma Food Cooperative, the High Plains Food Cooperative in Colorado and the Weaver Street Market in Carrboro, NC – have evolved and currently operate as multi-stakeholder cooperatives. This business structure includes consumers, workers, and producers in the same business entity. An example of a more standard produce ownership structure is La Montañita, based out of Albuquerque, NM. Each of these examples has achieved different scales of impact on their respective local and regional food systems.

The Oklahoma Food Cooperative (OFC) is a producer- and consumer-owned cooperative that sources and distributes a variety of products across a 160-mile radius around Oklahoma City. OFC decided to use a cooperative structure to spread equity and create buy-in from its members.

OFC began operating in November 2003, with 60 members and 20 producers (only 15 of whom had products to sell during the first month). Since that time, OFC has grown to more than 125 producers who sell to the co-op and grow or manufacture a variety of goods, including fresh fruits, vegetables, grains, herbs and meats. They also

produce value-added food products (breads, casseroles, cookies and cakes) and non-food products (body-care products, soaps and clothing).

From initial sales of $3,500 the first month, sales now average $65,000 per month. OFC rents a 10,000-square-foot warehouse at which it receives all products sold online (under the co-op's brand). Items are packed into trucks and delivered to pick-up sites across the State, including several hundred deliveries each month outside the cooperative for low-income people who do not have transportation.[33]

The High Plains Food Cooperative (HPFC) is modeled after the Oklahoma Food Cooperative and began with the latter's support. HPFC is a member-owner co-op that started with 30 members and has grown to 194 members (40 producers and 154 consumers). The advantage of this dual membership and governance structure is that it creates a vested interest on the part of both producers and consumers to ensure the co-op's success.[34] The co-op serves customers within a 300-mile radius of northeastern Colorado, with the goal of providing locally grown food from northeastern Colorado to western Kansas and to Colorado's more populated Front Range. Thus HPFC is able to help producers who are geographically dispersed and/or very small-scale to find a market for their products.

Like OFC, High Plains Food Cooperative operates primarily online and is minimally capitalized. It owns two delivery trailers and operates a warehouse that the co-op rents in Denver. As stated on the co-op's Web site, the products that go through its distribution system are owned either by the producer, or by the consumer, who receives the ownership directly from the producer.

In 2008, its first year in business, HPFC's sales were $10,424. In 2011, sales climbed to $71,000 and it anticipated achieving nearly $100,000 in sales for 2012.[35] Although poised to grow, financing that growth – by purchasing a trailer and a freezer, and hiring several full-time employees – remains a challenge because it is a small, new business with a limited track record of managing debt.[36]

Other cooperatives with similar operations to the OFC and HPFC model include the Iowa Food Cooperative (Iowa), Crosstimbers Food Cooperative (Texas), Idaho's Bounty Cooperative, Massachusetts Local Food Co-op, Nebraska Food Cooperative, Ottawa Valley Food Co-op (Ontario, Canada), West Michigan Cooperative, and the Wichita Food Co-op (Kansas).

Weaver Street Market in Carborro, NC, began operations in 1988. In addition to its own bakery and fresh food kitchen, Weaver Street Market offers a wide variety of natural and locally grown products. Milk comes from Maple View Farms, 2 miles up the road. Eggs are delivered fresh daily from Latta's Egg Ranch in nearby Hillsborough. Flour comes from Lindley Mills in Graham, NC. About a dozen local area farmers who sell their produce at the Carrboro Farmer's Market also sell to Weaver Street Market. Keeping the market community owned and operated has proven to be a very popular idea. The 2011 annual report indicates that the cooperative made a profit of about $250,000 and nearly half of its $26 million in sales was sourced from local products. The co-op has nearly 16,000 households as member/owners.

Founded in 1976, La Montañita currently stocks and sells more than 1,100 products from nearly 700 local growers in New Mexico and Colorado. Its 2008 sales were $2.8 million. La Montañita is a cooperative that supplies four retail

33 Wallace Center, 2010
34 http://highplainsfood.org
35 June 18, 2012 phone interview with HPFC.
36 McFadden, Gunter and Dyer, 2010

"Eco Apples" destined for sale through Red Tomato food hub of Plainville, MA.

stores in New Mexico, distributing both local and national brands through a co-op distribution center (the CDC). The CDC, in turn, also sells to other specialty retailers and restaurants.[37] La Montañita started a distribution arm through the CDC in 2007 in order to extend the operation and create greater market access for the region's producers. Products are now sourced from within 300 miles of Albuquerque (including southern Colorado) and distributed across New Mexico.

For-profit food hubs

Food hubs may also play a "matchmaker" role, helping farmers connect to a market outlet and sell their food products. Entrepreneurs and established businesses have pursued local food hubs as a potential area for profits.

One such example is Lorentz Meats of Cannon Falls, MN, a family-owned meat processing and marketing business. It expanded with a new facility in 2000, based primarily on finding markets for local meat producers. The firm believes "helping farmers with direct marketing exponentially expands our [Lorentz Meats'] own business opportunities."[38] Lorentz Meats is looking for a "sweet spot" for a mid-scale meat processor that will yield profitability for both producers and its meat marketing business.

37 McFadden, Gunter and Dyer, 2010

38 http://www.communityfoodenterprise.org/case-studies/u.s.-based/lorentz-meats

Colorado Homestead Ranches (CHR) is a western Colorado meat and processed product company – a for-profit C corporation – that has invested in processing capacity. Although each of the six member ranches is responsible for cattle production, all beef processing flows through two plants CHR acquired to reduce processing costs and to ensure its access to processing throughout the year.[39] The addition of two processing facilities in different small towns (Cedaredge and Delta) has also created new marketing outlets for CHR beef, as well as for the producers of other local and value-added products for which CHR creates shelf space.

Some large-scale retailers have also responded to their clients' desire for local food and are stocking more local foods and goods. In some cases, these larger retailers are starting to create their own local food sales in a manner that resembles a food hub. Whole Foods Market – a national retailer of organic and natural foods – announced in February 2011 that it would use its stores in Florida as a drop-off location for local CSA deliveries.[40]

Multi-structured food hubs

Not all food hubs have one central structure that fits nicely in these "boxes." Some food hubs are really a combination of several different businesses, where business functions of the hub have been divided into different legal structures. For example, Red Tomato is a nonprofit entity that is linked to for-profit, farmer-owned brokering and distribution entities. Red Tomato considered other business structures, but found that the nonprofit provides its producers with a sense of ownership in marketing that was more comfortable to them.[41]

Red Tomato evaluated the possibility of organizing as a farmer cooperative, but felt the co-op structure would entail a decisionmaking process that was too slow and risk-averse to address emerging markets for food products. Davis and Desai report that participating farmers trust Red Tomato to manage the planning, logistics, marketing and sales of their products. It uses grants to offer economic development support to its farmers, and maintain its focus on limited-resource and small-scale, local farmers. Looking towards the future, Red Tomato has the goal of increasing trading income (from marketing and logistics services) by 50 percent, with the remaining 50 percent originating from individual donor gifts, thus eliminating the need for government funding.[42]

Another example is the Sandhills Farm to Table Cooperative in North Carolina. This multi-tiered organization combines a farmers' marketing cooperative with a CSA on the consumer side and uses a brokerage management team on the administrative side of the enterprise. It has more than 1,400 members in one county in central North Carolina.

Food hub functions

Food hub functions vary but may include the following:

- Market access for local producers;
- Information sharing;
- Transportation and distribution;
- Brokerage services;
- Product bundling and aggregation;
- Season extension;
- Maintaining producer-consumer connections; and
- Producer-oriented technical assistance.

39 McFadden, Gunter and Dyer, 2010
40 http://www.bnet.com/blog/food-industry/how-whole-foods-is-embracing-its-local-produce-rivals/2553
41 Davis and Desai, 2007
42 Local Food Research Center, 2012

Virtual Food Hubs

Some food hubs are located either primarily or uniquely online. Virtual hubs have the advantage of being able to transmit and receive information much more quickly than a traditional direct marketing outlet. This means that a fully functional virtual hub gives consumers and other food buyers instant access to information on product availability and price. It establishes the "information connection" and places the burden of completing the transaction on the two agents involved: the buyer and the seller.

Internet-based transactions enable a vast array of products to be sold, usually at a price that is competitive with local retailers. Successful electronic marketing is based on "organized and centralized trading; widely dispersed buyers and sellers with remote access; and merchandising based on product descriptions. If the non-price-related terms of exchange, such as the logistics of bringing sellers and buyers together, and ways of describing products and concluding transactions are found, then the focus turns to a price-centered negotiation. Market success depends on a high trading volume, reliable grades and standards and reasonable charges."[43]

Virtual food hubs leverage the Internet-based market by finding ways to add value to exchanges in areas of logistical, financial, and information services. These virtual food hubs can automate business processes that lower the costs of access to local foods. The biggest advantage of virtually based hubs is lowering the transaction cost of a sale of a particular agricultural item for both the producer and the consumer purchasing the product.

Another potential advantage of Internet-based businesses that is sometimes overlooked is the ability to carry out the transaction at any time. This means that customers can place the order when they wish, and producers can update their sales items and pricing at their convenience.Electronic food hubs can also serve as a community development tool. To the extent that emerging communications technologies can partially offset the necessity of scale economies, rural communities may have a greater chance of maintaining service systems critical to viability.[44]

Lulus Local Food[45] is a Richmond, VA -based virtual food hub software provider. Lulus' Internet site serves as a connection point for approximately 200 food producers and cooperatives with over 2,000 customer-families. Currently, five food hubs – four in Virginia and one in Montana – are using software designed by Lulus Local Food. [46] Each hub has multiple pickup and drop-off locations. For instance, Fall Line Farms, one of the hubs using the Lulus Local Food software, has 10 site locations in and around Richmond. The software is designed to connect producers with retail customers as opposed to institutional or restaurant buyers.

The program works on a weekly cycle, where producers enter their available produce online on a Friday. Product is then "approved" by the food hub administrator, and the buying pages are opened to the buying public Saturday through Monday. Consumers select the products they wish to buy, place an order, and pay for their purchases. Producers deliver purchased products to the drop-off/pickup site locations on Thursday morning. Customers pick up their groceries Thursday afternoon. The food hub collects payments from the customer, including any sales tax, and pays the producer for products purchased, less a transaction fee. The hub also pays sales tax to the State on behalf of the producers.

Lulus Local Food is working on a new release of its software package that will allow producers to sell at multiple hubs and allow hubs to network with each other. It will also allow for institutional and restaurant purchases.

Farmer Girls[47] is a software provider with similar functionality to Lulus Local Food, using

43 Ehmke, 2001

44 Leatherman, 2000

45 www.luluslocalfood.com

46 Matson, 2011

47 www.farmergirls.net

Micro-greens ready for harvest at Manakintowne Specialty Growers in Powhatan County, VA. Produce from the farm and other suppliers are ordered by members on the Lulus Local Food Web site.

- More than 20 percent of FoodHub's membership is based in counties in which at least 30 percent of the population lives in rural areas.
- Fifty-five percent of rural FoodHub members are sellers, of which 82 percent are farmers, ranchers, or dairies. Other sellers include breweries, wineries, and fishermen.
- Thirty percent of rural Food Hub members are buyers, of which 27 percent are schools or school districts.

a weekly cycle to connect producers directly with retail customers. Its business model is different in that users of the software are not networked. Farmer Girls currently has hubs in Warrenton and Roanoke, VA.

Another such example is FoodHub,[48] developed by Ecotrust. It grew rapidly from its launch in February 2010 and has obtained more than 2,200 members throughout the greater Northwest and is open to food buyers and sellers in Oregon, Washington, Alaska, Montana, Idaho, and California, according to an article in *Sustainable Business Oregon*. [49]

In a June 2012 blog post, Ecotrust provided details on FoodHub's membership:

This virtual food hub seeks only to connect local/regional food buyers and sellers, regardless of production methods used.

There are myriad virtual food hubs offering a variety of services. Local Dirt,[50] based in Madison, WI, connects local producers with a variety of customers, including institutions, restaurants, schools and buyers clubs, as well as individual families. Local Dirt provides the connection between producer and customer and creates invoices on the producers' behalf, but it does not take part in the transaction (collect or pay money). It is branching out into other States and localities.

Fresh Fork Market[51] "connects Cleveland, OH, area customers with local artisanal producers." Fresh Fork Market is more like a CSA that offers baskets of food at fixed prices. What is in the bas-

48 http://food-hub.org/
49 http://www.sustainablebusinessoregon.com/articles/2011/07

50 http://www.localdirt.com/
51 www.freshforkmarket.com

ket depends on the season; however, the more the customer pays for the basket, the more choice the customer gains to select what will be in the basket.

Papa Spuds is a nascent e-commerce food hub based in Raleigh, NC, that was started by Rob Meyer and Ben Stone as a for-profit entity in 2008. It has positioned itself as an Internet farmers' market that partners with more than 20 producers from central North Carolina. The business offers online payment and home delivery of products within its service area.[52]

Most virtual farmers markets only sell local-produce and other products. A slightly different approach is taken by Relay,[53] which currently operates in two cities: Charlottesville and Richmond, VA. Relay not only offers local produce, but also a vast array of goods normally found in a regular grocery store. Relay's business model is to give the customer an experience closer to a one-stop shop at a regular grocery store. In certain areas, Relay also offers a "to your door" delivery service.

The negligible cost of participating on the Internet permits the rapid transmission of information for virtual food hubs.

Virtual food hub as an information source

One advantage of a virtual hub is its positioning to create networks and link buyers that are typically much harder for smaller producers to reach. For example, OmOrganics began a farm-to-restaurant cooperative network to assist with sales and delivery direct from farmers to restaurant chefs, so restaurants, retail stores, and schools can find local purveyors of sustainably grown foods. In addition, it provides a sourcing directory for wholesale buyers for produce, meat, poultry, dairy, eggs, and seafood. To complement its online sourcing directory, it provides links to local distributors so that institutional buyers have multiple means to procure local foods. A recent post and video on the FoodHub.org Web site relates how the Oregon School District Nutrition Services uses FoodHub to find local farms and source local products for their Farm-to-School program.

The negligible cost of participating on the Internet permits the rapid transmission of information for virtual food hubs, which can result in reduced transaction costs for spatially divergent consumer/producer situations. Several of these hubs clearly evolved due to the distance between farm production and the end consumer. For example, the Southwest Colorado Guide to Local Food and Fiber [54] links diverse producers in southwestern Colorado counties with institutional buyers as well as household consumers. Producers develop their own profiles where they write a statement describing what products they have for sale, how their products are unique, and how they are sustainably produced.

A similar hub covers Gunnison County, CO,[55] and offers information on buying and selling meat, eggs, and dairy products in the county. It also supports a list of Gunnison County producers that sell vegetables, beef, poultry, eggs, dairy products, pork, lamb, goat, honey, hay, and compost.

It has been recognized that easy access to the social and organizing potential of the Internet is one area where the local foods movement has benefited from new technology developed over the past few years. According to John Leatherman's study of Internet-based commerce, the social/organizational function of the Internet can be used as a tool for rural community organization and goal attainment. Particularly in rural communities, where so much depends on voluntary efforts by community groups, this capacity would strengthen local institutions.[56]

52 http://papaspuds.com/
53 www.relayfoods.com
54 www.mesaverdefood.org
55 http://www.gunnison.colostate.edu/agri/localag/localagbeef.shtml
56 Leatherman, 2000

Christy Talbott of Richmond, VA, a member of Fall Line Farms food co-op, picks up her produce at Bon Air United Methodist Church.

Varying Functions of Food Hubs

Any business must serve an economic function in order to continue to exist. In economic parlance, a business must serve the needs and wants of individuals to survive and prosper. A food hub must follow this rule: it must provide a value to its producers and local food buyers. Some of the market functions that a food hub may provide to its members and consumers are outlined in the proceeding section.

Market access for local foods

A primary role of a food hub is to facilitate access for agricultural producers to market outlets (retail or wholesale) that would otherwise be less accessible or completely inaccessible due to scale or location of the food production with respect to the market outlet.

Similarly, the food hub also addresses the consumer side of the equation by making it possible for local consumers to access local producers.

A successful food hub often will link to a larger number of local food producers than a consumer could access individually.

For example, Fall Line Farms is "designed to connect family owned and operated farms in the central Virginia area with customers in search of local food year round."[57] Fall Line Farms connects more than 75 local farms in the Richmond, VA, area[58] with local food buyers and provides more than 2,000 customers with fresh, locally produced food on a regular basis.

Information flow and sharing

As illustrated by the existence of many online hubs, sometimes the food hub's only role is to create and maintain a flow of information between the buyer and seller. Often, however, food hubs work with producers or markets that require more than just information or a distribution channel for products. When producers enter new markets through new mechanisms, their education and support needs may begin well before their products arrive at the warehouse. These facilitating or intermediary functions range from transporting products from the farm or warehouse to the buyer, to building capacity among participating producers. On the other hand, the rapid transmission of information permits certain hubs to reach into larger institutional markets (see Food-Hub.org).

Pricing is based on information, and often the brokering function of a food hub helps farmers negotiate higher prices instead of being price-takers. However, farmers and their representatives must also receive information on what consumers are willing to pay for food in their area. Good Natured Family Farms (GNFF) in Kansas – a 40-member producer cooperative – and Balls Food Stores have developed a partnership that allows participating GNFF farmers to negotiate prices. GNFF adds a mark-up to cover packaging, labeling, administrative, and marketing costs. The final price for any product is negotiated between GNFF and the retail store, with the farmer being guaranteed the price that was initially determined.[59]

This process is transparent to all agents involved in each transaction. Additionally, GNFF has established this transparency through a written memorandum of understanding that outlines the responsibilities of GNFF, each farmer member and the retail stores. This process also creates liability protection for GNFF. Therefore, both efficiency and equity gains come from sharing information openly in these transactions.

Transportation and distribution

Getting product from a production or aggregation point to the designated market outlet(s) is one of the costliest and most complicated aspects of operating a food hub of any kind; as such, these arrangements need to be assessed carefully. A firm may need to consider spreading transportation costs in several ways to remain profitable on a per trip basis by putting more of a high-margin product on each load transported by truck. It can also reduce per unit fuel costs by moving larger loads of food over shorter distances.[60]

Backhauling is an option for creating more efficient transportation networks that moves produce to and from a hub. This entails arranging for product to be loaded into the transportation vehicle for either the initial or return leg of the delivery or pick-up trip, such that the vehicle is always carrying a revenue-generating load. For example, Los Poblanos Organics has delivery trucks traveling from its distribution warehouse in Albuquerque, NM, to the Los Alamos and Santa Fe areas. It is investigating the development of relationships with other firms to arrange for transporting that firm's product from the Los Alamos and Santa Fe areas back to Albuquerque in order to decrease its transportation costs per trip.

The Local Food Hub, based in Charlottesville, VA, has designed a food delivery system around a central hub aggregation point. The circuit-delivery

57 http://flf.luluslocalfood.com/
58 Matson, 2011
59 Dreier and Taheri, 2008
60 Martinez et al. 2010

The Local Food Hub, in Charlottesville, VA, bases its delivery system around a central warehouse.

format was intended to reduce transportation costs for all the small-scale suppliers trying to meet growing demand for local, sustainably produced foods. A central warehouse was established to which all suppliers would deliver. The produce was then repackaged to form one delivery per restaurant or wholesale buyer, to be delivered by a third party. The Local Food Hub makes extensive use of its location near an interstate highway to have its product carried as a "backhaul" on other food wholesalers' trucks, which would otherwise be returning empty. This can dramatically reduce shipping costs and provide access to more locations for members' production.

The third party was a transportation company, Lowhub, which uses electric and biodiesel vehicles. Pricing structure is designed to encourage customers to fill cargo spaces, making each journey as cost-effective as possible. A trial run of this system showed that while buyers were impressed with the efficiency of the delivery system, the tiered pricing and invoicing was too complicated for end users to manage (especially restaurants), and the third-party delivery added extra costs that buyers were unwilling to pay.[61]

61 Making Local Food Work, 2009

Brokerage services

Food hubs may also play the role of "matchmaker" by connecting farmers with the correct market outlet to fit their scale of production and their production practices. For example, Red Tomato evolved from the organizers' desire to sell local produce fairly on a wholesale scale. Initially, Red Tomato tried to manage product handling and distribution to supermarkets and other wholesale markets throughout New England, but soon realized it didn't have the physical and financial resources as a small nonprofit.[62]

Because storing and transporting products is costly, it instead decided to focus on brokering. This included creating product value, selling to retailers, coordinating transportation, providing customer service and developing point-of-sale materials, and packaging. By contracting out for storage and transportation, Red Tomato retains about 10 percent of sales, with the rest going to the farmers.[63]

Increasing market share by bundling

A growing type of food hub involves the bundling of product through a multi-farm CSA (Community Supported Agriculture). For example, in 2008, the Intervale Center in Vermont launched a weekly food delivery program modeled after a multi-farm CSA. As its Web site notes: "Based on farm and market interest, we chose to focus on developing a farmer collaborative that would aggregate, market, and distribute local foods to the surrounding community in a way that ensures fair prices for farmers. By working together, farmers are able to benefit by providing the community with increased crop diversity and greater customer service that may not be possible with a single farmer. In addition, multiple farmers working together benefit from economies of scale in both marketing and distribution, allowing them more time to focus on production."

62 Davis and Desai, 2007
63 Davis and Desai, 2007

In the case of the All Natural Beef Producers Cooperative, its goal in the late 1990s was creating a greater and more consistent beef supply. The beef cooperative eventually grew into Good Natured Family Farms, a cooperative of 40 farmers marketing 13 product categories, including beef, chicken, produce, eggs, jams and jellies. By 2000, the cooperative had expanded to include 20 members located in and around Kansas City, MO, the largest being Balls Food Stores, which is also the largest regional grocery chain in Kansas City. [64]

Several other instances of multi-farm CSA that bundle locally produced meats and eggs and function as food hubs include:

- Grasshopper CSA in Kentucky;
- Wagbo Peace Center's Providence CSA, MI;
- Alliance CSA, Nova Scotia;
- Sandhills Farm to Table Cooperative CSA, NC;
- Lancaster Farm Fresh in Lancaster, PA;
- Common Wealth CSA, MA.

The clear advantage of a food hub designed around a multi-farm drop box program is that the program allows small- and medium-scale farmers to reach a greater number of consumers directly. This type of hub also eliminates the need for each farmer to grow a diversity of crops to meet the customer needs of any one CSA. The disadvantage is that by involving an intermediary, such as the drop box consolidator, farmers lower their margins compared to what they would otherwise receive if they marketed directly to consumers at a farmers market or through their own CSA.

Increasing market share by extending the season

The food hub can extend the quantity of offerings to those consumers who expect a greater variety and/or less seasonality in the availability of products, as opposed to being a member of a specific CSA. Strategies to help producers increase their share of the local foods market include: extending

64 Dreier and Taheri, 2008.

the season by coordinating existing product lines to guarantee more consistent supply of local foods over time (as does Sandhills Farm to Table Co-operative); providing resources for farmers' greenhouse production to increase total supply (as does Indian Springs Farmers Association); and developing shared root crop storage (as does the Local Food Hub).

Los Poblanos Organics in New Mexico has accomplished season extension through three mechanisms. First, it purchases organic products from a wide range of farmers to supplement its own farm production, including some in Colorado and California. Second, it increases its greenhouse production. Third, to grow more crops in the State, three additional acres for production have been added to the land owned by Los Poblanos in southern New Mexico, taking advantage of the State's various microclimates to produce crops nearly year round.

Maintaining a consumer-producer connection

Increasingly, the food hub model is being adopted to establish and retain consumer connectivity to local farmers. These CSAs often strive to have a more personal touch with consumer-members.

One example of this is San Francisco Bay Area-based OmOrganics, which has developed a flexible, multi-farm CSA that allows customers to choose a CSA from a particular farm (or a few farms working together). Food delivery contains produce only from the selected farm(s). Many people choose this type of CSA when they are familiar with a specific farm and know they like its

Pigs at Keenbell Farm in Rockville, Virginia, are pasture raised to organic standards. The high-quality products made from their meat are sold through the Lulus Local Food food hub website.

crop variety and quality, according to OmOrganics.

OmOrganics also provides consumers with the choice of a CSA or delivery service that combines and delivers produce from a variety of farms during the course of a year, depending on product availability. These multi-farm CSA orders are packaged by a consolidator. This type of CSA offers consumers greater variety and flexibility in delivery (which can occur weekly, semi-weekly, monthly, or seasonally).

The Sandhills Farm to Table Cooperative in Moore County, NC, incorporates this connection as part of its structure. It is a multi-stakeholder cooperative that has both 1,600 consumer-members and more than 40 producers and staff members as joint owners. As part of its services, the cooperative sends weekly newsletters to its members with recipes, conducts cooking and education classes, looks for value-added products that customers request, and organizes market days for its producers to meet directly with its consumers.

A food hub designed around a multi-farm drop box program allows small- and medium-scale farmers to reach a greater number of consumers directly.

John Blue, a producer-member, says this "consumer connection" is especially important for transitioning farmers – those who are too large to make a living by selling at farmers markets, but not big enough to access large-scale producer markets."[65] The interaction with consumers allows for the farmers to build strong relationships with consumers, which will be beneficial in regards to future growth.

Technical assistance and producer development

Some food hubs place particular emphasis on building production and/or marketing capacity among their producers. For example, Appalachian Sustainable Development (ASD), a nonprofit based in Abingdon, VA, developed Appalachian Harvest Network (AHN) to help local farmers transition from growing tobacco to organic fruits and vegetables to sell at independent health food stores, local grocers, and regional chains.[66]

A rural nonprofit, ASD provides pre-season planning to its 53 organic producer-members, as well as product aggregation, sorting, grading, packing, shipping, and other training and technical assistance. It offers support to growers to help them get the proper seeds; plant fields properly; get organic certification; and fulfill the buyers' requirements for high quality. ASD also creates markets for useable "seconds" by raising money to purchase and distribute this still wholesome produce (which may have slight cosmetic blemishes or be of less than standard size grades) to a regional food bank. Spinoffs from AHN include wood products processing and a school-based gardening project, all overseen by the board of ASD. Eventually, ASD would like AHN to become a for-profit subsidiary.[67]

The Local Food Hub in Charlottesville, VA, works with more than 60 small and mid-sized farms within a 100-mile radius of Charlottesville. The hub provides an array of resources to help orient producers to new markets, including networking, liability, and traceability coverage, access to refrigeration and freezer storage space available for rent, discounted seeds, and discounted Web site development. The hub also educates consumers about local foods and participates in educational events and workshops. Producers say they have increased sales by an average 25 percent by working with the hub, which has reinvested more than $850,000 in the local farming community since inception.[68]

La Montañita in New Mexico provides producer-oriented services, such as carrying invoices centrally for producers who deliver to its warehouse, thus facilitating direct contact with the

65 Matson, 2012

66 Wallace Center, 2010
67 Wallace Center, 2010
68 Barham et al., 2012

buyer. It rents space for members' use and buys raw products in bulk (on behalf of members) to help keep input prices low for value-added food producers; it also assists with product development and marketing.[69]

Incorporated in 1981, the Indian Springs Farmers Association, a 50-member cooperative based in Petal, MS, has grown to include a $500,000 packing facility where produce is prepared, boxed, and trucked to a wide variety of wholesale and retail buyers throughout North America. However, to use its packing facility to full capacity, Indian Springs needs to increase its capacity to grow product year round. Some of the cooperative's farmers have winter greenhouses now, but many do not. To address this deficit, the cooperative is building a demonstration project and ultimately would like to build many more over the next few years.

GROWN Locally is planning to adopt a post-harvest handling program for some of its members that may involve third-party certification. Because member farms are small-scale operations, many of GROWN Locally's members cannot afford the certification process and infrastructure necessary to formally comply with the requirements of institutional buyers. These certifications include Good Agricultural Practices (GAP), Good Handling Practices, and Good Manufacturing Practices. GROWN Locally has also found that pre-season production planning has helped its membership to better meet market demand. Its members plan production ahead of the growing season, based on customer demand. Prices are then set to reflect the membership's costs of production.[70]

69 McFadden, Gunter and Dyer, 2010

70 USDA Rural Development, 2010

Information Sharing and Reducing Risk

Some information is critical for building and maintaining relationships among partners in a value chain.

- From a business management standpoint, producers and brokers need to understand the standard or acceptable conventions of the marketplace in terms of typical payment terms and evaluating potential partners in the supply chain.[71] This is often an issue when smaller firms or producers engage in transactions with larger partners who are used to extending repayment terms beyond what a smaller operator can manage.
- Another potential for miscommunication lies in partnerships where the broker or consumer may be looking for a supply greater than the vendor(s) can meet or a vendor may not be able to consistently meet certain production standards (quality of produce, husbandry methods or land stewardship practices).

Information can sometimes act as a bottleneck to growth and change. For example, Floyd Boulevard Local Foods Market in Souix City, IA, wanted to expand its processing facility, but growers were unwilling to increase their vegetable production until they were assured that the Market would commit to buying from them in larger amounts. Furthermore, growers needed to communicate with the Market regarding the varieties they would grow, their costs of production, and any other conditions that might change their ability to deliver in the contracted amounts (Iowa State, 2008).

To address these potential obstacles, it is recommended that all parties in a value chain be well matched in size and scale, and operate with similar goals and values in regards to future growth.[72] In the circumstance of food hubs, a large hub may require a greater number of smaller farmers to supply the products required. The food hub and the farmers must be informed and in agreement as to how much each farm needs to supply, planned growth in the future, and the production capacity of the farms themselves. Therefore, the stakeholders involved need to be knowledgeable about all of the different markets being addressed. For example, the farmers who have worked with consumers in direct markets may not be used to – or may be unwilling to – produce the required consistency, volume and quality needed for wholesale markets.[73]

In a study conducted by Iowa State University in 2005 and 2006, farmers involved in direct sales noted that communication skills were highly important to their success in business "because they had to relate individually to each and every customer." Furthermore, they recognized that they alone were the best representatives for their own products and could use customer contact for educational purposes. Producers said they needed

Information can reduce risk

Information is both a constraint and an opportunity in developing and managing marketing opportunities through food hubs. In fact, every transaction is shaped and facilitated by the flow of information between producers, intermediaries and end consumers. The more efficient the flow of information through technology or through rapid person-to-person transmission, the more likely it is for problems to be averted and for risk to be reduced.

71 Iowa State, 2008

72 Iowa State, 2008

73 Davis and Desai, 2007

more information on how to access markets that buy large quantities, as well as training in cost control, risk management, and understanding the tax requirements of cooperatives and limited liability corporations.[74]

Product assurances

Consumers may be targeted with information about product quality, production or handling protocols, helping them distinguish between competing products in the marketplace and to make purchases based on environmental or social values important to them. These are voluntary protocols that, according to the Center for Fair and Alternative Trade, "must attract enterprise participation and consumer interest to be successful."[75] These claims can vary from informal assurances to standards-based certification programs such as USDA certified organic. Examples include Certified Humane and the World Fair Trade Organization.

The Texas-based Cross Timbers Co-op says that producers may only sell products they themselves have grown or processed. Cross Timbers will not handle genetically modified (GMO) foods or products, nor market any meat, poultry, or egg products originating from confined animal feeding operations. The co-op also asserts that all raw materials have been produced, traded and/or distributed sustainably, equitably, and responsibly, in accordance with the ideals and principles of the co-op. As further assurance, producers must maintain documentation or other evidence of their products' origins, such as certifications from TransFair USA, Smithsonian Institution, Rainforest Alliance, or ForestCare.

Good Natured Family Farms (GNFF) uses its Web site to provide informal consumer assurances through a list of all the products offered, which include general descriptions of how these products were produced. The GNFF Web site then allows consumers to search for producers within a 200-mile radius of Kansas City, KS. Consumers can also find restaurants where chefs incorporate these products into their menus. The Oklahoma Food Co-op enforces a requirement that all products from new producer- members must be reviewed by the co-op's Compliance and Standards Committee to ensure that they are eligible for sale through the

74 Hardy, Holz-Clause and Chase, 2006
75 Center for Fair and Alternative Trade, 2009

cooperative.

At La Montañita, the Beneficial Farms Eco Label is a project of the Co-op Trade Initiative. Originally a nonprofit collaborative of farmers and ranchers, the Beneficial eco-label became part of the Co-op Trade Initiative in 2007. According to La Montañita's Web site: "The Co-op Trade Initiative collaborates with the New Mexico Food-Shed Alliance, The New Mexico Agricultural Task Force of the Middle Rio Grande Council of Governments, The University of New Mexico Sustainability Studies Program, and others in an effort to push regional food-shed and sustainability forward into mainstream consciousness."

When formalized, third-party verification provides assurances that may come from the product processor, or from a government or membership organization that is charged with creating measurable standards, "that require producers, retailers, consumers, or a combination of those groups, to adhere to social, environmental or some other specialized criteria that is not followed in traditional markets."[76] Red Tomato is a member of the Domestic Fair Trade Association[77] and also has its own certification program, Eco, which is defined as: "grown on family farms by stewards of land, water and wildlife; using natural methods and minimal spray; closing the distance from farm to table. Ecological farming covers a spectrum of environmental and conservation practices including organic, biodynamic and advanced integrated pest management (IPM)."

Red Tomato has a formalized production protocol to reduce the application of pesticides in apples and stone fruits grown for its program; all of its farmers are certified by the Integrated Pest Management Institute. It has also instituted a voluntary program to provide training, assessment and GAP certification for all Red Tomato growers. Red Tomato's Web site states that, as of 2010, 21 farms had been assessed and 17 more were to be GAP-certified within a year. Red Tomato's Eco Apple brand is currently packaged with labels that provide consumers with information about where, how, and by who their food is produced.[78] This brand is linking 40 farms with more than 200 retail outlets in New England. The next steps in the program include the implementation of a recall and traceability system throughout the Red Tomato network.

76 Center for Fair and Alternative Trade, 2009
77 http://www.thedfta.org/,

Food hubs and community economic development

In an article written in 2000 about rural community development, John Leatherman, an agricultural economist at Kansas State University, said: "Among the ubiquitous economic trends that may be observed in rural areas are the consolidation and increasing scale of economic activity. Such consolidation has long been underway in agricultural production systems. Similar trends can be noted in the consolidation of retail sales activity as small, specialized proprietors are replaced by large retail discounters. Even at the scale of communities, retail and service activities continue to consolidate in regional trade centers as many small rural communities stagnate or decline."

Food hubs can have a strong influence on community economic development in both rural and urban areas. In rural areas, food hubs can support entrepreneurial agriculture that leads to retention of the rural population base. By providing new marketing opportunities for local producers and connecting the producers with buyers they could not reach individually, they may increase farm sales and encourage strong agriculture-based economies. They can also build community among a group of stakeholders interested in developing the local food system, although the structure of the community and potential for networking depends on how much of the interaction among hub members occurs in "virtual markets," as opposed to "in person." In urban areas, food hubs can bring fresh, locally produced foods into underserved communities and help consumers learn more about where their food comes from.

78 Diamond & Barham, 2012

Food hubs can encourage economic development in both rural and urban areas.

Constraints on food hubs

As the Wallace Center points out in its study of community food enterprises, the overall market environment for local foods is becoming more favorable, but the capital investment to support infrastructure development is still lacking. Like all nascent businesses, there are many potential constraints to the development and growth of food hubs. The primary constraints can be challenging for a new organization as they may involve the lack of sufficient financial resources and/or a robust risk management plan. Other constraints may take longer for a new entity to address, such as a staffing plan that includes human resource development, or having access to local food processing facilities.

Capitalization

Although there are many examples of well-planned and successful food aggregation and distribution systems, some food hubs struggle with undercapitalization. This in turn can lead to a relatively weak organizational and/or product delivery structure.

Food hubs have addressed this challenge in a number of different ways. Some organizations

choose not to rely on grants or loans (for example, the Oklahoma Food Cooperative) and try to grow their membership or sales revenue to capitalize their operations. Some reach a point where certain constraints (for example, distance to market) can be overcome only with further investment in transportation infrastructure; in these instances, the food hubs may be forced to seek outside funding. For example, the High Plains Food Co-op in Colorado cannot grow its sales until it can move more products to the co-op's urban-based markets; this requires additional freezer capacity to store the product and a trailer to move the product. The co-op pursued grants to fund this sales market expansion.

Access to capital is a particular challenge for new food hubs. Operating expenses for the Appalachian Harvest Network (AHN) could not be covered by sales alone in its first years of operation. Therefore, it relied on grants and individual donations, with the goal of becoming financially viable in the near future.[79]

Floyd Boulevard Local Foods Market is a for-profit arm of Sustainable Food for Siouxland – a marketing initiative started by a group of consumers and farmers looking for ways to make local food sources available to the tri-state region (Nebraska, South Dakota and Iowa) around Sioux City, IA. It operates a commercial kitchen and processing facility that produces value-added products under a regional brand, Sioux City Sue.[80] At the time of the case study reviewed for this report, the processing facility was not yet operating at capacity, nor had it attained its break-even point. To scale up the operation, the Market would need to make a capital investment in equipment and certified procedures. These involve some very detailed processes, including the development of a Hazard Analysis and Critical Control Points (HACCP) plan and standardizing commercial recipes.

Floyd Boulevard derives 34 percent of its gross revenue from grants, donations, and memberships; and there is substantial debt financing on 35 percent of its assets. Furthermore, the Market has encountered difficulties trying to obtain a standard bank loan, because it needs to finance more than 25 percent of the expanded enterprise. Most of its farmer-suppliers are small operations with few assets.

These examples point to financing and growth issues for organizations that have relied heavily on grant funding but may wish to grow in scale based on debt financing. Often, there are few options, and such businesses may wish instead to solicit loans from their members. Furthermore, as evidenced by a case study of Colorado value chains, access to capital is frequently related to the scale of the operation, where the smallest operation studied was the most under-capitalized and the most constrained in terms of potential market expansion.[81] This is further verified with a survey of food hub operators, as reported in USDA's Regional Food Hub Guide, where only half of the reporting food hubs said that they were currently economically viable.

Liability

Liability is an issue that all agents in a value chain must consider. In general, there are two types of liability risk exposure: tort risk and contract risk. A tort is an intentional or unintentional harm to the person or property of another, and can be minimized using insurance products. Contract risk is the primary risk of a buyer abrogating a legally binding agreement. In regards to food hubs, this type of risk can be encountered by value chain agents who enter into financing contracts or contracts with brokers, vendors and customers.

Some food hubs are designed to remove the potential for product liability claims or contract risk from the hub itself by having producers retain product ownership until the product is loaded into a truck for delivery to the end consumer. For example, both High Plains Food Co-op and Oklahoma Food Cooperative members retain product ownership, as well as the responsibility that all

79 asdevelop.org
80 Schweser. 2009.
81 McFadden, Gunter and Dyer, 2010

State and Federal food safety regulations have been followed.

On its Web site, the High Plains Food Co-op notes: "At no time does the cooperative ever have title to any of the products. We have no inventory. The products that go through our distribution system are owned either by the producer or by the consumer who purchases "title" to the product from the producer. All complaints should first be brought to the attention of the producer, unless it is a situation where the cooperative itself is at fault."

Good Natured Family Farms uses a memorandum of understanding that outlines the responsibilities of all partners in each transaction to limit the organization's exposure to contract risk. Another form of risk may arise when hubs rely on one or a very limited number of suppliers for a particular product; this introduces the risk that if a supplier is unable to meet production goals, the hub will not have the product to supply to the end customer. Mitigating this risk often involves spreading production over multiple producers, where possible.

Other hubs assume some or all of the liability risk by purchasing insurance to cover parts of the transactions made under their auspices. For example, Appalachian Sustainable Development (ASD) has a $2 million general product liability policy in addition to a $2 million umbrella policy that covers the handling and delivery functions of the hub.[82] Producers who supply ASD are not covered under this policy, so they need to ensure they have adequate liability insurance for their own farm in the event that a health-related product safety issue is traced back to their on-farm growing or handling practices.

Grasshopper Distribution has a $6 million aggregate policy that covers all farmers' products that flow through Grasshopper's channels, since most of its members would not be able to afford adequate coverage on their own. Red Tomato also has a policy that covers all growers who sell through the hub: a $4 million total policy, with $2 million for one occurrence and a $1 million umbrella policy. Any grower who sells through a channel other than Red Tomato must carry an applicable liability policy to insure his or her products. This coverage is similar to the umbrella policies carried by some farmers' markets, where the transactions made by all vendors selling in that market are covered, but those same vendors need additional insurance for any transactions they make outside the farmers' market venue.

In general, it is costly to determine who bears risk for product or contract liability and how those risks will be mitigated. Often, it is hard-won experience that helps the management team determine how to handle risk, given local conditions and the relationships between buyers and sellers.

Local food handling and processing capacity

A lack of access to processing facilities or services is an impediment to increasing the supply of local products in many areas. Processing facilities may struggle to maintain a consistent schedule given variations in seasonal supply; will need robust food safety protocols; and may face costs associated with adherence to specific production methods or processing claims that producers use to market to consumers.

For example, organically produced meat can only be processed in a certified organic facility if it is to qualify for an organic certification. According to the Organic Trade Association, "In processing operations that handle both organic and non-organic meat products, processors must segregate their handling of organic and non-organic meat."[83]

Several co-ops and producer alliances have made significant capital investments in order to ensure adequate access to processing for their products. For example, the All-Natural Beef Cooperative initially required its producers to individually process and distribute the beef they produced. This resulted in high costs for individual farmers and inefficiencies for the co-op, especially

82 Markley, 2010

83 OTA, 2010b

La Montañita Co-op in Albuquerque, NM, is an example of a food hub spurring economic development by investing in its food producers.

in transportation and scheduling.[84] All-Natural decided to purchase a State-inspected plant in order to standardize meat quality and address scheduling issues for its member producers. One of the co-op's largest producer-members (who also served as a co-op manager) obtained a personal loan to finance the plant's purchase, and he retains ownership of the facility. The co-op then signed an exclusive marketing and delivery agreement with the processing facility. One co-op member handles all of the slaughter scheduling in order to ensure a consistent supply for its customers and to help producers adjust their cattle feeding accordingly.[85]

Human resources capacity

Some food hubs face a challenge in hiring and retaining individuals skilled in areas such as record-keeping, accounting, and financial management. This is especially true in producer-based organizations, where the key managers may have extensive knowledge of production agriculture, but less

84 Dreier and Taheri, 2008

85 Dreier and Taheri, 2008

knowledge of business management. A University of Wisconsin report concludes that cooperative food hubs need to develop or hire skilled management: "The co-op model offers a horizontal leadership structure. Without clear responsibilities and delegation, however, this model can result in disorganization, leadership imbalance, and fatigue."[86]

For example, GROWN Locally in northeastern Iowa determined it was more cost-effective to hire a professional manager than to rely on volunteer members, interns, or inexperienced staff to oversee its administrative tasks. In 2008, the cooperative hired a full-time coordinator with a background in business management and marketing to coordinate pre-season planning and pricing and distribution, which allows the growers to focus on production.

One typical constraint faced by food hubs is a lack of skilled management.

Appalachian Harvest Network, based in southwestern Virginia, recognized how important it was to monitor the organization's financial health by keeping good records. This included hiring an accountant and using generally accepted accounting standards. Although AHN is still recording data by hand, it is updating its system to electronically assemble, track, monitor, and analyze business data, which should help identify strengths and weaknesses of the current business model.[87]

Regulatory Environment for Food Hubs

The Federal, State, and local regulatory environment governing food processing, manufacturing, packing, holding and transporting of food and food products destined for human consumption influences the costs of participating in certain markets – both directly and indirectly. There is the uncertainty associated with certain regulatory requirements, especially when they span multiple jurisdictions, such as local and State health agencies that may intervene at different levels. For example, a county health department usually has more specific criteria for developing a commercial kitchen than does the State health agency. Other regulatory concerns for some food hubs may include the costs of continually monitoring production and processing to ensure ongoing compliance, as well as monitoring the status of local, State, and Federal regulations.

While the regulatory environment presents challenges to food hubs, there is still a great deal of opportunity for them to expand. Food hubs may be in a much better position to meet certain requirements than are individual farmers, thus once again showing how crucial food hubs could be to the growth of local and regional food systems.

In general, it is costly to identify and analyze regulatory information pertaining to any form of physical food hub. These costs (in staff time and financial resources) increase as the hub engages in more complex processing and handling of food (or assumes more product liability). Producers working with the High Plains Food Co-op, for example, bear the burden of understanding and complying with regulations pertaining to food safety and handling, including meat processing. This lowers the operating costs for the co-op, but increases the costs for participating producers who must insure their own products and be certain that each product they market fully complies with Federal, State, and local health and food safety regulations.

In addition, there is uncertainty surrounding the final rules under the Federal Food Safety Modernization Act (FSMA) and how it will affect farms and food businesses. FSMA will potentially affect recordkeeping practices, food safety planning and monitoring, and inspection protocols for certain farm and food businesses, including food hubs.

Regulatory uncertainties such as those discussed above may offer an advantage for virtual food hubs, which facilitate connections between consumers and producers but do not physically

86 Borst, Alan. USDA Rural Development.
87 The Wallace Center, 2010

handle or transport any food or food product. What remains to be seen, however, are the compliance costs for those food facilities that connect producers to consumers and play a vital role in making transactions that would be too difficult for individual agricultural producers to complete on their own. Compliance costs may involve the development of food safety plans, traceability protocols, or other recordkeeping systems.

In addition, for food hubs selling to institutional or wholesale buyers, their producers may need to be GAP-certified (under USDA Good Agricultural Practices guidelines) as a food safety assurance for the intermediary's end customers. Compliance, recordkeeping, and the formal audits required for GAP certification may impose costs on small-scale producers which could, in turn, increase the prices at which they will have to sell their products through a hub.

Federal initiatives and grants

Some food hubs have taken advantage of Federal resources to conduct research, develop their business models, purchase or upgrade infrastructure, or conduct trainings for their suppliers. USDA's "Know Your Farmer, Know Your Food" initiative began in 2009 to provide information that helps community stakeholders identify some of these Federal resources for local food system development. It also shares information about successful food system models from around the country that have made use of Federal funds.

The "Know Your Farmer, Know Your Food" Web site highlights a number of existing USDA programs that can fund local food system development projects.[88] The initiative has also created the "Know Your Farmer, Know Your Food" Compass, which is an online multi-media narrative with stories, pictures, and video about USDA's support for local and regional food systems. The Compass includes an interactive map of USDA-supported local and regional food activities in all 50 States. Grant and loan programs from nine other Federal agencies that can be used for regional food systems development were added to the map in October 2012.[89]

USDA also recently released the Regional Food Hub Resource Guide, which provides a comprehensive list of Federal and non-Federal grant and loans programs that could potentially fund food-hub-related activities.[90]

In September 2010, the Vernon Economic Development Association (VEDA) and the City of Viroqua, WI, received a $2 million award from the U.S. Department of Commerce, Economic Development Administration, for a food processing and distribution center in Viroqua, a small rural community in the western part of the State. The project includes renovating a 100,000-sqare-foot manufacturing plant into a food processing and distribution center, in addition to providing much-needed storage for regional farmers. The center also includes rental space for local food businesses and a home for the newly incorporated Fifth Season Cooperative, which works to aggregate and market local food products.

The executive director for VEDA explains: "This facility is a tremendous resource to the agricultural industry in our region. It provides the aggregation, processing, and distribution infrastructure to help small producers increase their market opportunities and business capacity. We're creating jobs, increasing the tax base, and engaging our own local entrepreneurs to grow the economy." The executive director also states that the project will create an estimated 120 jobs and generate $5.7 million in private investment.

Examples of USDA funding programs

USDA Rural Development's Community Facilities loan and grant program supports a wide variety of essential community facilities, everything from health clinics to fire stations to schools and daycare

88 www.usda.gov/knowyourfarmer

89 www.usda.gov/kyfcompass

90 This guide and other resources for food hubs can be accessed on USDA's food hub portal at www.ams.usda.gov/foodhubs

centers in rural communities with a population less than 20,000. The program can also finance the physical assets of local food projects owned by municipalities or nonprofits including buildings and equipment for farmers markets, school kitchens, community kitchens, and food banks; food storage and distribution centers; and food preparation centers. As long as the infrastructure is based in a rural community (under 20,000 people), it could qualify for the program. Examples could include a cold storage facility, warehouse, processing facility, or greenhouse that facilitates sales to any market, urban or rural.

USDA Rural Development's Rural Business Enterprise Grant Program can also assist in local food efforts. Under this program, for example, $140,000 was provided to Shore Gourmet on Maryland's Eastern Shore to help with start-up and operational costs, including marketing materials, product development, and other activities, to raise awareness of local food and promote agriculture in the region. Shore Gourmet, created by the Mid-Shore Regional Council, functions as a distributor for value-added agricultural products produced by farmers on the Eastern Shore. The grant will be used to gain expertise in food packaging design, pricing and marketing for local farmers and other food businesses.

USDA Rural Development's Rural Cooperative Development grants have been used for cooperative development that can support local food systems infrastructure. For example:

- The Federation of Southern Cooperatives/Land Assistance Fund in Alabama received a grant to establish a vegetable processing and marketing cooperative and a regional goat processing and marketing cooperative. The Federation also trains and supports members involved in direct marketing activities, such as selling at urban farmers markets, redeeming nutrition assistance coupons and selling direct to schools. Part of the grant focused on business planning and training for community development credit unions.
- The Virginia Foundation for Agriculture Innovation and Rural Sustainability (FAIRS) used a USDA rural community development grant funding to assist a number of local food hubs, including providing technical assistance to the Local Food Hub in Charlottesville, VA, and efforts to assist community-based organizations in Floyd, VA. This funding helped to create virtual food hubs and sponsor several training conferences throughout Virginia.

The Value-Added Producer Grant Program (VAPG) is another USDA Rural Development program that can be used to fund intermediary food marketers that increase producer income – a nearly perfect definition of a food hub. Only producer-owned entities (independent producers, farmer-owned cooperatives or businesses) are eligible for VAPG. For example:

- Fertile Grounds of Noxen, PA, received a VAPG of $300,000 in 2012 to assist its work with small-scale family agriculture producers in Pennsylvania. The group operates a community-supported agriculture program, which promotes Pennsylvania agricultural products and encourages buying and eating locally. The funds will be used to promote small business expansion and entrepreneurship opportunities in the local

community by expanding its marketing campaign to reach an increased number of local businesses and farmers.

State, county, and community support efforts

Throughout the country, there are numerous ways to use State and local funding to support the development of local food efforts. For example, the New Mexico Food and Agriculture Policy Council is looking at numerous ways to improve the fresh food distribution system to under-served rural and urban communities around the State using State resources. This includes encouraging the use of vacant or under-utilized buildings in rural communities to catalyze economic activity and create community. It also supports expanding and modernizing kitchen facilities in schools, senior centers, and other institutions. The vision, in part, is to create commercial kitchens and other facilities that offer business development and marketing resources and outlets for more dispersed rural businesses.

The Fifth Season Cooperative grew out of the recognition that many small to mid-sized family farms in western Wisconsin have considerable capacity to produce high-quality foods, but lacked access to local markets, as well as structured coordination, processing and distribution infrastructure. Support for this new hub came because the community recognized that many dollars were flowing outside of the community for food purchases. An impact study estimated that consumers in western Wisconsin spent $208 million buying food from outside their region.[91] This information convinced key stakeholders that developing a

91 Fifth Season Cooperative is Launched. 2010.

cooperative with a diverse membership base (the cooperative is a multi-stakeholder group of producers, producer groups, food processors, distributors, buyers, and workers of the cooperative) could create the physical and organizational infrastructure and coordination needed to increase sales of local food in western Wisconsin.

The National Association of Counties (NACO)[92] highlights several roles for county governments in helping to develop the infrastructure to support local food systems. These include:

- Streamlining permit processes for storage, processing and distribution facilities;
- Providing mini-grants toward their creation;
- Donating county resources; and
- Helping farmers establish partnerships with community stakeholders who can offer these services.

NACO also points out that counties can work with farmers and agriculture industry groups to support new products and certification standards. They can also offer incentives, such as tax rebates, to retain businesses that are critical to the local food system infrastructure. Counties and other local government entities can promote conservation easements, financial aid for farmers, economic success strategies for local agriculture and zoning as ways to encourage agricultural business to continue investing in the local economy.

La Montañita Co-op in New Mexico is an example of a food hub spurring economic development by investing in its food producers in unique and innovative ways. La Montañita grew out of a natural foods market that was incorporated in 1976. It was managed for 3 years, largely as a collective, with the board of directors serving as staff. In 1987, the co-op obtained a loan from National Co-op Bank (NCB) for $284,000 and moved into a larger location. In 1999, La Montañita opened a second location in an under-served neighborhood in the North Valley of Albuquerque. By 2004, the co-op had more than 10,000 member-households and total sales exceeding $12 million. Later that year, the co-op bought out another co-op in Gallup, NM, and, in the transition, leased a larger location, purchased equipment, and hired and trained staff. At the same time, Santa Fe's only independently owned natural foods grocery was struggling to compete against larger retail food chains, so it asked the co-op to buy it out. The co-op obtained a National Co-op Bank loan of $1.7 million in 2005 and purchased the Santa Fe location.

As of 2011, La Montañita had more than 13,000 member-households and employed about 200 full- and part-time staff. The co-op encourages team management within each department, pays a living wage, and provides a generous employee benefit package.

As part of its effort to build local food system infrastructure in New Mexico, the La Montañita began extending pre-payment for product loans that have gone to farmers, ranchers, and other local food producers who sell their products at the co-op stores or through the Co-op Trade Initiative's Co-op Distribution Center. The demand for these loans far outstripped the co-op's ability to fund them. In response, it developed the La Montañita Fund, which allows all co-op members who reside in New Mexico to invest in the fund by purchasing interests at $250 each. In 2011, 400 units were offered for sale to raise $100,000 for the fund.

Private financing initiatives

At the local level, it is often difficult for beginning or unconventional farms and food-based businesses to gain financing from traditional lenders, which may be unwilling to work with businesses that have an unproven financial track record, produce unfamiliar products, utilize new or uncommon business models, or work with an unusual array of partners, including nonprofits. Food hubs are most often categorized under these headings, thus they can also face issues when attempting to obtain financing. The organizations highlighted below are examples of organizations that provide financing

92 NACO, 2007

to small-scale, local and socially responsible agricultural ventures.

Finance for Food and Farming, located in New Mexico, is an example of a working group that is addressing the funding gap for small-scale businesses that are frequently otherwise undercapitalized. This group comprises organizations that create micro-financing opportunities directed at growing small food-based businesses across New Mexico. During the past 2 years, lending programs through the Permaculture Credit Union, the New Mexico Farmers' Marketing Association, and La Montañita Co-op have generated $250,000 in micro-loans to farmers' market vendors to invest in new production technologies and new products, and to support local food systems processors and distributors.

Another community infrastructure financing model relies on a mix of public and private investment. Pennsylvania's Fresh Food Financing Initiative is a $120 million fund that has provided low-interest, long-term loans to finance more than 60 locally owned food markets in neighborhoods and small towns that lacked places to buy fresh food. The fund was developed using $30 million from the State, leveraged with private investment guided by The Reinvestment Fund, The Food Trust, and The Urban Affairs Coalition. The objectives of the program include: improving health and nutrition outcomes for populations living in areas designated as food deserts; stimulating investment of private capital in low-income communities; and removing financing obstacles and lowering operating barriers for supermarkets in poor communities.

As a national trend with intentionally local roots, Slow Money[93] is part of a groundswell of investors interested in socially responsible investing. These investors seek to lend capital to local food systems and small food enterprises to give them the necessary resources to meet demand for locally based foods and services, such as farming enterprises, food processing facilities, food hubs, and small value-added businesses. Although investors may make a 3- to 6-percent profit, the real goal is to revitalize local economies by supporting smaller scale agricultural businesses and direct market

93 www.slowmoney.org

development.

The Carrot Project, a New England-based organization, "is helping rebuild a food and agriculture system that creates opportunities for smaller farmers; provides healthful, locally produced food for citizens; and is good for the environment, as well as local and regional economies."[94] The Carrot Project creates, tests, and operates financing programs that support profitable, sustainable farm businesses that are unable to find traditional financing by partnering and leveraging the assets of community-based lenders, socially responsible investors, farm support organizations, and farmers.

LION (Local Investing Opportunities Network) in Washington State facilitates private investment agreements between small business owners and investors who want to invest their money locally to promote economic self-sufficiency, job growth, and economic development.[95] Business owners apply to the program to receive support from a local investor (via loans or equity shares), and LION coordinates the match with an appropriate investor. The investment agreement is then developed and agreed upon by the individual investors and owner/borrowers. LION also promotes citizen activism and involvement through community gardening with dedicated harvests for area food banks, farm to school programs, and waste reduction and recycling.

In addition to these notable examples of alternative community financing for developing local food systems, there are numerous innovative paths that small-scale food businesses are forging to create capital and build community support. These include creating community buy-in by selling subscriptions to a business (much like the investment CSA members make each year in the producer who grows the food share), or issuing gift cards for a new business that can be redeemed when the business opens, at greater than face value to compensate the "lender" for use of the money.

94 www.thecarrotproject.org, 2011
95 www.l2020.org

In sum, the resurgence of interest in local food system development – combined with the recognition that the food system extends beyond food production and into its processing and distribution – has created some unique opportunities for stakeholders at all levels to pave the way for building the needed infrastructure in physical, environmental, and human resources. This includes fostering a policy environment that encourages business investment and retention in food production, processing and marketing, and looking at how an array of traditional economic development tools can be used to support newer business models, including food hubs, that actively connect producers with consumers interested in purchasing locally grown foods.

Roadmap for Food Hub Development

The development and evolution of food hubs are highly localized and dependent on several factors. Even so, there are some lessons that can be applied from reviewing examples from across the country. There appear to be some factors that contribute to success more than others, including:

1. Having a strategic plan with clear goals and a vision for developing the food system helps ensure that the hub's original intents are maintained (for example, fair prices for farmers or sustainable agricultural production methods).
2. Getting all stakeholders engaged early on in the process and defining their interests and areas of expertise. This limits some risk that may arise in fulfilling contracts with vendors and buyers and involves:
    a. Making sure there is a management or oversight team that is inclusive and that hears farmers' concerns, as well as those of other businesses and investors.
    b. Ensuring that the team has individuals with skills and proven experience in financial management, the regulatory environment, marketing and packaging, inventory management and quality control, and that can engage meaningfully with farmer/business owners.
    c. Making sure that all parties are well matched in size and scale, and operate with similar goals and values.
    d. Enlisting producers and members with previous experience growing and supplying food for local markets.
3. Understanding the location of different direct markets and how to access them.
    a. If the market outlet is geographically distant from the production unit, how will transportation occur and how can products be priced to cover those costs?
    b. Is backhauling feasible to generate revenue on an otherwise empty return load?
    c. If the market is one with a customer base that is less familiar with purchasing and preparing fresh foods (some urban or at-risk populations, schools without scratch-cooking experience), education may be vital to the hub's success.
4. Providing an educational program that may be an integral part of the hub development. This may include partnering with an outreach entity, such as a university Extension Service or nonprofit, that can deliver information about what the hub provides and when the product can be delivered to the consumer. Producers may need training on post-harvest practices, such as quality control, packaging and delivery. Likewise, there may be a need for training in coordinated practices, such as common production practices or season-extension techniques.
5. Reducing risk on the buyers' side in order to access markets. HACCP (hazard analysis and critical control points) are mandated by law in regards to certain products. In circumstances where a HACCP is not required by law, many end users may still request them to be implemented by producers or processors before receiving product. GAP (good agricultural practices) are also often required by end users

prior to the purchase of products. While these plans are used to ensure consumers of the quality and safety of the products, they may necessitate additional costs in producer/business. Owner training and the development of specific protocols and quality assurance will most likely be required in order to meet the end user's requests.

Another type of producer support that may be necessary is securing affordable product liability insurance for individual vendors, or umbrella insurance coverage for vendors that can be purchased through the hub, since this is critical for hubs accessing institutional markets, such as schools or hotels. Such requirements for accessing a market may also cause some business owners to withdraw from the supply pool.

6. Providing capital for supply chain infrastructure, such as vehicles, storage facilities, and retail locations. Capital availability can be a significant barrier to starting local aggregation and distribution businesses. A certain level and type of infrastructure is necessary to operate a food hub, including:
   a. Technical infrastructure, such as billing protocols, Internet management systems and payment processes.
   b. Physical infrastructure may also be essential (such as product warehousing or processing capability) in order to ensure increased product quality and packaging control across suppliers. Distribution infrastructure may also be required.
7. Exploring a variety of business structures. Whatever that structure is, it must be one that helps the stakeholders meet their goals for financial, marketing and production planning and growth. It appears that a certain initial flexibility is key, and the management team should identify the point at which a particular business structure constrains further investment. An alternative structure (such as incorporating one business function or outsourcing distribution) may sometimes be the only way the hub can maintain its market share or expand into new markets.
8. Identifying all sources of technical and financial support, including those considered less conventional.
   a. There are emerging areas of public and private financial support for food hubs, including micro-lenders, private investors, economic development entities, and non-profit community-based organizations.
   b. There are also businesses with technical expertise in processing, distribution, or transportation with which a hub could contract to more efficiently execute some of the more complex or cost-prohibitive functions

of direct marketing through a hub. At issue here is how comfortable the stakeholders are with alternative lenders or certain subcontractors. This sort of "comfort level" assessment is an important component in developing a strategic business plan for a food hub.

c. Donated or shared equipment and facilities can substantially reduce the capital required to start and operate the food hub.

d. It is essential that members, producers, and owners have "skin in the game." That is, all owners need to have a capital stake in the success of the venture.

9. Managing information efficiently. This is critical to the success of a food hub.

a. Timely and accurate information flow between producers and consumers, or between producers and wholesalers, helps to minimize or avoid risks, such as price or marketing risk, production risk and some legal risks.

b. Information management – supported by dedicated staff and technology – impacts the hub's ability to manage orders accurately, to monitor product quality, and to convey product attributes to consumers and other vendors.

c. Information is needed to remain in compliance with certain Federal, State, and local food safety regulations, and to maintain transparent working relationships across multiple partners in a value chain.

Conclusions

Food hubs fulfill various roles, including functioning as aggregators, processors, distributors, and marketers of local food. In all of these roles, food hubs provide a critical supply chain link for rural communities and farmers to reach consumers interested in purchasing local products. Food hubs are also beneficial in creating new marketing opportunities for farmers and ranchers, allowing them to expand the scope of their consumer market.

Depending on their structure, business model, mission and customer base, food hubs can have additional benefits, including: increasing access to local foods in underserved communities and schools; providing farmers and ranchers with higher prices than they might receive through other wholesalers; developing human capital through producer training and capacity building; and strengthening the ties between producers and consumers in the same community.

The success or failure of a food hub should not be measured solely in terms of its aggregating function or in terms of total volume of product moved. It should also be valued in terms of the places its products go and the people who benefit from it. With growing demand for local or regional food products, some conventional marketing channels may be ill-equipped to supply local food where and how people wish to purchase it. Food hubs can fulfill important roles that create new opportunities for producers and consumers. Many also fulfill social and other community functions.

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