

Food Hub Decision-Making and Development

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Abstract

Food hubs address key issues of scale and infrastructure in alternative food systems development. Prior research has focused on describing and classifying food hubs to understand the existing landscape at particular points in time. We know less about the process of designing and developing food hubs. This research uses interviews with twelve well-established food hubs to investigate the factors involved in decisions about their work, structure, and governance; the relationships among their choices; and their development over time.

These hubs were created to address constituent needs and to support particular missions and values. Over time, they continued to make decisions based on their constituents' needs and founding principles. Their decisions also took into account their capacity and financial considerations such as funding sources and profit. Initial decisions affected their later choices by limiting options and/or determining priorities. This research provides recommendations for food hub founders, funders, supporters, and researchers.

For Winnie, Roy, Dorothy, and Lorenz

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Food Hub Decision-Making and Development

CHAPTER 1: INTRODUCTION

Food hubs are organizations that address key issues of scale and infrastructure in alternative food system¹ (AFS) development. Though some hubs have existed for decades, the term itself is relatively new, and their numbers are rapidly increasing (Barham et al. 2012). The growing interest in creating and funding food hubs across the country makes it important to understand the existing landscape and to learn from the experiences of established food hubs. This thesis begins to address some of the gaps in the food hub literature related to food hub decision-making, structure, and development over time.

Food hubs vary in many respects, including structure, mission and goals, business activities, and physical presence (Fischer et al. 2013). Among the 302 hubs the USDA had identified as of July 2014, almost half (48%) are privately held businesses, 29% are non-profit organizations, and 20% are cooperatives. The remaining 3% of hubs are either publicly held or informally organized. They also vary in terms of their customer base: approximately 40% sell directly to consumers and the rest were split almost evenly between selling only to institutional buyers and selling to both types of customers. Food hubs are located in rural, suburban, and urban areas in all regions of the United States. The size and success of hubs vary widely across the whole population, but two recent studies have shown that older hubs generally have larger revenues and are more financially viable than younger ones (Barham et al. 2012; Fischer et al. 2013).

To date, research on food hubs has focused on defining, describing, and classifying the organizations. This work is helpful in understanding the existing

¹ The term food system encompasses the “flow of [food] products from production, through processing, distribution, consumption, and the management of wastes, and associated processes” (APA 2007, under “Introduction”).

landscape of hubs at particular points in time, and provides a significant amount of information about their current characteristics. However, the literature does not include consistent longitudinal data to indicate what today's successful hubs looked like at earlier stages. Understanding how established food hubs have grown and changed over time could be a key source of guidance for new food hubs and their funders, service providers, and other supporters.

Much of the existing literature is based on, and structured around, distinctions that make sense from an academic perspective but aren't particularly useful to practitioners. For example, some classifications and typologies use a combination of factors in their defining features, both outcomes of decisions that hub founders will have to make (structure, sales model, etc.) and characteristics that are somewhat innate to a hub, even in its earliest stages (constituents, location, values, etc.). Similarly, much of the literature on food hub structure and development is framed around the outcomes of start-up decisions, i.e., findings from non-profit, cooperative, and for-profit hubs are presented separately. To the extent that the goal of this research is to support and promote AFS development on the ground, it should be designed with those end users in mind. Food hub founders, service providers, and other supporters could more easily put the lessons of our research into practice if those insights were organized by what we know about how hubs started, rather than the outcomes of their early decisions.

My thesis research is an initial effort to move beyond describing and categorizing the existing landscape of food hubs to address gaps in the literature related to our knowledge of food hub decision-making, particularly about their structure and their work. In an interview study of key informants from 12 well-established food hubs, I investigated the following questions: Why were these hubs

created? Why did they choose their activities and products? Why did the their founders choose their structures? What factors went into those decisions, and what were the advantages and disadvantages? I also explored the ways in which those initial decisions affected subsequent choices. The results of this research offer insights into decision-making during the creation of a food hub and as an on-going aspect of its operations.

My thesis is structured as follows: In **Chapter 2** I provide a synthesis of the current food hub literature and situate my research questions in that context. **Chapter 3** describes my methodology and details the characteristics of the hubs in my sample. In **Chapter 4** I provide an analysis of interview responses about the factors that affected their decision-making and examine potential relationships among food hub choices. Additional interviewee responses about alternative food hub structures and their advice for future food hub development are found in the **Appendices**. In **Chapter 5**, I synthesize my results with prior research and explain the ways in which my findings augment our understanding of food hub decision-making and development. The thesis concludes with a discussion of topics and questions for future food hub research projects and recommendations for future food hub founders and supporters.

CHAPTER 2: LITERATURE REVIEW: FOOD SYSTEMS, SCALE, AND FOOD HUBS

Food hubs are entities that address issues of scale within alternative food systems (AFS) movements. AFS movements developed in response to the human, environmental, and social damage caused by the conventional food system. In this chapter, I will place food hubs in the context of conventional and alternative food systems and synthesize the existing research on food hubs, focusing on their structure and development. The chapter concludes with a discussion of gaps in the food hub literature and the research questions I developed in response.

I. Food Systems

A. The Conventional Food System

Over the 20th century, agriculture in the U.S. transitioned from a subsistence endeavor to a mechanized, commercial industry (Welsh 1996; MacDonald and McBride 2009; Dimitri et al. 2005). Economies of scale allowed for cheaper production of goods on large, specialized farms and encouraged the development of supply chains that connect those farms with wholesalers, retailers, and mass markets of similar size (Lyson 2007). These trends of growth, mechanization, and specialization have formed our current conventional food system, which is characterized by market concentration and consolidated market power and control (Hendrickson and Heffernan 2002; GAO 2009; Hendrickson and James 2005; Welsh 1996; Kaufman 2004; Ahearn et al. 2002; Heffernan et al. 1999; Hendrickson et al. 2001; O'Donoghue et al. 2011; MacDonald and McBride 2009). Conventional food system supply chains prioritize increasing output, efficiency, and profits; they depend on science and technology to make advances toward those priorities and provide solutions to any problems that may arise (Lyson 2007; Hanson and Hendrickson 2009).

The conventional food system has provided benefits to both producers,² farmers and consumers. For example, technological advances have increased agricultural efficiency and decreased the labor costs associated with food production (Tilman et al. 2002). This efficiency, paired with increased disposable income, has greatly decreased the proportion of household income that Americans spend on food (AgMRC n.d.; Putnam and Allshouse 1999; Dimitri et al. 2005; Miller and Coble 2007). The convenience of processed foods has decreased the time required for consumers to procure and prepare meals (Ramey 2009). In addition, the global scale of food production and distribution has increased variety in U.S. diets (Binkley et al. 2000).

Unfortunately, the conventional food system has had significant negative consequences for producers, public health, the environment, and communities. Producers have been put on a “technological treadmill” that requires them to continually increase their investment in new technologies just to break even (Cochrane 1958; Hendrickson and James 2005). Producers are considered “price takers” in conventional supply chains; they have little negotiating power in their transactions with other supply chain participants and receive minimal compensation for the value added to their products along the supply chain (Stevenson et al. 2011, 30).

The vast majority of U.S. farms are still family-owned. However, production and marketing contracts between producers and large firms allow for significant corporate

²**Producer** is a general term that encompasses farmers, ranchers, growers, and others involved in raising or growing food. As this research does not include any hubs that work with ranchers, the terms **farmer** and producer are used somewhat interchangeably in this paper. In some instances the term grower is used when referring to a hub's constituents that only grow products such as fresh produce (as opposed to raising or producing meat and dairy products). **Buyers** are institutions such as grocery stores, food service companies, and restaurants. Though **consumer** demand influences food hub work and choices, the hubs in this research sell their products to buyers, not directly to individual consumers.

control over U.S agricultural production. This dynamic has limited the number and kind of decisions that farmers can make (O'Donoghue et al. 2011; Welsh 1997; Hendrickson and James 2005). The contract system also increases the number of decisions made by “absentee business owners” who do not have the same knowledge of and concern for the local environment and community as do producers who live on their farms (APA 2007, 3; Hendrickson and James 2005; Kirschenmann et al. 2008). Constraints on the choices left to producers increase the likelihood that they will make unethical decisions about land, seeds, and labor that will negatively affect the long-term health of their farms, the environment, and their communities (Hendrickson and James 2005).

The conventional food system excels at producing processed foods that are heavy in added sugar, salt, and fat; our increased consumption of such foods is one cause of the steady rise in rates of obesity and diet-related diseases over the last few decades (CDC 2013a; Kaufman 2004; APA 2007; Nestle 2002; Moss 2013). These trends are occurring across the country, but they are disproportionately high in minority and low-income populations (CDC 2013a; CDC 2013b). In addition, excessive use of antibiotics and pesticides in livestock and crop production, respectively, have increased the prevalence of antibiotic-resistant diseases in humans (MacDonald and McBride 2009; PCIFAP 2008a) and raised concerns about levels of consumer and farmworker exposure to pesticides (IAASTD 2009; TRI 2011; Cohen et al. 2004).

Industrial agriculture’s reliance on synthetic fertilizers, pesticides, and other inputs also has environmental consequences, such as soil erosion, groundwater contamination, and loss of biodiversity in rural communities (Kaufman 2004). These issues are concentrated in areas of production, but they also contribute to problems across the country such as eutrophication and dead zones in the Gulf of Mexico and

the Chesapeake Bay and to global climate change (APA 2007; Perez et al. 2009; Johnson 2009). Genetic modification (GM) has been touted as a solution to some of these issues, but that has not proven entirely true. For example, as pests have developed tolerances to GM-supported pesticides, producers have had to use the more toxic and less-precise chemicals that GM-crops were supposed to render unnecessary (Benbrook 2012). These negative externalities are not accounted for in the current costs of food production (Kaufman 2004).

The scale and industrial nature of the conventional food system have also had negative consequences for rural and urban communities. Large farms and the companies that control production contracts are less likely than small-scale farmers to purchase inputs and services locally, which reduces the economic development benefits of agriculture for farming communities (PCIFAP 2008b). Research dating back to the 1930s shows that communities with many small farms have higher quality of life, civic participation, access to social services, and social capital than communities with a small number of larger farms (PCIFAP 2008b); Goldschmidt 1978; Lyson 2004; Berry 1977). Consolidation in other food system sectors has also negatively impacted consumers and their communities. For example, over the last few decades, the retail sector has seen a decrease in the number of small and independent stores and a shift away from locating stores in low-income areas. These trends have reduced access to healthy food and employment opportunities (Kaufman 2004; APA 2007).

B. Alternative Food Systems

As evidence and awareness of the costs of the conventional food system have increased, alternative food systems movements in the United States have grown in size, strength, and popularity. Individual AFS movements (e.g. local food systems, sustainable agriculture, community food security, etc.) have a variety of

environmental, economic, social, and public health goals, but they all work to address the problems of the conventional food system (Hinrichs 2007; Stevenson et al. 2007; Lyson 2007; Kloppenborg 2000).³ Through the priorities described below, AFS movements offer alternatives to, and remedies for, the detrimental aspects of the conventional food system detailed above.

Place and Proximity

AFS activists, especially proponents of local food systems, work to increase the production and distribution of food within a given community or region. Re-localization of food production creates and strengthens markets for producers, connects consumers to the production of their food, reduces the carbon footprint associated with food travel, and promotes a strong community and/or regional identity (Feenstra 1997; Martinez et al. 2010).

Economic Development

AFS movements create economic development opportunities through agriculture and food-related businesses. AFS movements gain traction by identifying openings or weaknesses in the conventional food system, such as increased consumer demand for fresh, locally- and/or sustainably-grown produce which the conventional system is not currently designed to handle (Hendrickson and Heffernan 2002). By increasing demand for such products, AFS proponents support producers, the businesses that provide them with services and supplies, and local food retailers. This strategy uses local economic multipliers to increase the proportion of local spending that stays within the community or region (Lyson 2004; PCIAF 2008b; APA 2007; Martinez et al. 2010).

³Alternative food systems researchers and practitioners offer many context- and place-specific AFS definitions and descriptions of their key qualities and attributes; for examples see Hinrichs 2007; Stevenson et al. 2007; Lyson 2004; Kloppenborg 2000; Beus and Dunlap 1990; Feenstra 1997; Wilkins and Eames-Sheavley 2003.

While the conventional food system uses supply chains to move and process its standardized commodities, alternative food systems handle their differentiated products through value chains (also called values-based supply chains), which treat producers as “strategic partners” and “price negotiators” (Stevenson et al. 2011, 30). The term “value” refers to both the monetary value created and retained as products move along the chain *and* the AFS values that the chains promote such as environmental sustainability, food sovereignty, and economic justice (Lerman 2012; Block et al. 2008; Hoshide 2007; Stevenson and Pirog 2008). These relationships and networks compensate farmers fairly for the costs of production and the value of their products. Value chains differentiate their products based on where and how the food was produced and who produced it, and use marketing and packaging to communicate that information (and the related values) to consumers (Feenstra et al. 2012). As I will discuss further below, food hubs are one type of actor in AFS value chains. They participate by aggregating, processing, distributing, and/or marketing locally- and regionally-produced foods (Diamond and Barham 2012).

Environmental Sustainability

Today’s alternative food systems movements in the United States have their roots in the sustainable and organic agriculture movements that began here in the mid-twentieth century. Those movements began in response to environmental and public health concerns about the increased use of pesticides and the decrease in biodiversity on American farms (Lockeretz 2007; Kirschenmann 2004). Most AFS proponents encourage demand for foods grown with production practices that increase biodiversity, reduce non-renewable inputs and waste, and improve soil quality (Fernandez et al. 2013; Gottlieb 2005). In addition, AFS movements attempt to decrease the food system’s dependence on fossil fuels by minimizing the distance

food travels between production and consumption, and increasing demand for fresh, unprocessed foods (Martinez et al. 2010). Wendell Berry has argued that in uncoupling plant and animal production, industrial agriculture transformed a functioning solution (integrated production methods) into two significant problems: the need for synthetic, non-renewable inputs to grow crops, and the excessive quantities of manure produced by confined and concentrated livestock production (1977). AFS proponents address these issues by raising awareness of problems caused by concentrated livestock production and by supporting integrated crop and livestock farming (Hilimire 2011).

Public Health

AFS movements work to reduce the prevalence of obesity and diet-related disease by increasing consumption of healthy, fresh foods, and minimizing the role that soda, snacks, and other processed foods play in American diets. Within this subset of AFS goals, some activists are especially concerned with addressing issues of food access and affordability for minority and low-income communities (Schumacher et al. 2009; Bell and Standish 2009). These efforts include creating and administering programs that increase the value of food assistance funds such as SNAP and WIC when they are spent at farmers' markets.⁴ AFS organizations address issues of increased pesticide and antibiotic exposure from industrial production by supporting sustainable growing practices and lobbying for humane treatment of farm animals (THS 2011).

Food Sovereignty

Though it is not always an explicitly articulated goal, AFS movements seek to increase local food sovereignty, i.e., democratic participation in, and control of, the food system (Feenstra 1997; Lyson 2004; Lyson 2007). Many of the strategies used in

⁴ For examples of such programs see FFRI 2013 and TFP 2013.

support of other AFS priorities also address this goal. Connecting consumers to farmers and increasing their awareness of food system issues gives them the opportunity to make their voices known, both through political votes and “votes” with their forks and food dollars (Pollan 2012; Guthman 2004a; Guthman 2004b; Ohberg 2012). The increased market demand for differentiated products gives farmers the chance to minimize their participation in the conventional food system, and exercise more control over the production methods and farming practices they use (Hinrichs 2000). Finally, some AFS movements work to address issues of equity and justice in the food system. In addition to the race- and class-related health disparities noted above, the conventional food system has many issues related to worker treatment on farms and in food businesses such as restaurants (McMillan 2013). The growing consumer awareness of these issues has increased the ability of organizations such as the Coalition of Immokalee Workers to organize and campaign for better working conditions and higher wages for farmworkers (CIW 2013).

II. Scale and Alternative Food Systems

Food hubs address issues of scale⁵ and infrastructure that are crucial to the future of AFS development. In the following section I will explain the traditional mechanisms of AFS development, the challenges to “scaling up” that work, and the role that food hubs play in responding to those challenges.

⁵In this thesis, and most food systems research, **size** refers to aspects of the hub itself, such as the number of producers it works with, or the amount of revenue it generates. **Scale** is a somewhat less tangible concept related more to the distance, or number of entities, between producers and consumers in the value chain. In their important work on the “local trap,” Born and Purcell (2006) argue that any given scale is not inherently positive or negative, contrary to many default assumptions in local food movements. Rather, changing scale should be considered as a strategy for reaching particular goals or outcomes.

A. Alternative food systems Sales Models

Most AFS development work to date has been focused on creating opportunities for farmers and consumers to interact directly, through local food structures such as farmers' markets and community-supported agriculture (CSA) programs (Pothukuchi 2009; Bloom and Hinrichs 2010). Direct-to-consumer sales are a crucial component of alternative food systems and they have been growing steadily in recent decades (Matson et al. 2013). Unfortunately, alternative food systems are still dwarfed by the conventional system: In 2008, local food sales (direct-to-consumer and intermediated⁶) accounted for only 1.9% of total farm sales (Low and Vogel 2011).⁷ This is not surprising, given that the vast majority of consumer food purchases still take place at conventional supermarkets and "supercenter" retailers such as Super-Target and Walmart SuperCenters (Tropp et al. 2008). In addition, AFS research has shown that there are limits to the potential for growth in farmers' markets, CSAs, and other direct-to-consumer channels (O'Hara 2011; Ragland and Tropp 2009; Bloom and Hinrichs 2010).

It is important to note that some scaling up of local food systems has already occurred. In 2008, the first year in which the USDA collected data on local food sold through intermediaries such as food hubs, those sales accounted for half or more (50-66%) of local food sales (Low and Vogel 2011). While large farms accounted for only 5% of farms that sold local food, they sold "93 percent of the \$2.7 billion in sales generated exclusively through intermediated channels, averaging \$1.3 million in local food sales per farm" (Low and Vogel 2011, 6). Large farms are able to take advantage

⁶ In the USDA's terminology, in direct sales, the producer sells directly to the end consumer. Intermediated sales of local food involve at least one entity (intermediary) between producers and the end consumer. Intermediaries include food hubs as well as local retailers and restaurants.

⁷ While this number is small compared to the entire food sector, it is four times greater than the 2007 figure for only direct-to-consumer sales (Martinez et al. 2010; Low and Vogel 2011).

of economies of scale, and can more easily meet institutions' volume and quality requirements (Low and Vogel 2011).

This recent change in data collection proves that local food sales are already happening through intermediated channels and that consumer demand for local food is higher than previous research showed. However, much like the tensions inherent in industrial-scale organic agriculture, the domination of intermediated local food sales by large farms is unlikely to match consumer visions about the source of their local food (DeLind 2000). While there are ongoing debates about whether farm size directly correlates to environmental stewardship or any other AFS priorities,⁸ it is clear that the current structure of local food sales to institutions does not work for small and medium farms and does not meet the increased consumer demand for locally and sustainably grown foods (Hardy and Holz-Clause 2008).

B. Challenges to Scaling Up

AFS researchers agree that selling to institutions is a key next step for meeting increased consumer demand for local and sustainably grown foods, addressing alternative food systems issues at a regional scale, and creating a substantial shift from conventional to alternative food systems (Day-Farnsworth et al. 2009; Clancy and Ruhf 2010; Martinez et al. 2010; Slama et al. 2010). Unfortunately, there are many obstacles to developing relationships between small and medium producers and institutional buyers. Those challenges are generally related to the size of the former and the scale of the value chains the latter operate within (Low and Vogel 2011; Ohberg 2012; Day-

⁸ Taylor (2010) argues for the social and environmental benefits of small farms, citing Woods 2005, Duram 2005, Hanley 1991, Morton and Miller 2007, Rosset 1999, and D'Souza and Ikerd 1996. James and Hendrickson (2010) surveyed medium-sized farms in Missouri and found no evidence of particular environmental stewardship among mid-sized Missouri farmers; they provide a summary of both sides of the argument, with sources including Kirschenmann et al. 2008, Lee 1980, Tavernier and Tolomeo 2004, Lambert et al. 2007, and Soule 2001.

Farnsworth et al. 2009; Clark et al. 2011; Booth 2012; Johnston and Baker 2005; Martinez et al. 2010).

Buyers and other intermediaries operate with a focus on efficiency and economies of scale (Hardy and Holz-Clause 2008). The consolidation and concentration in the food production, distribution, and retail industries has scaled most of these firms up to the point that they find it inefficient to purchase products from small and medium farms (Perrett 2007; Cheng and Seely 2011; Hand 2010). This lack of mid-sized infrastructure is cited as a major barrier to small and mid-sized producers selling to mainstream retailers and other institutions (Martinez et al. 2010; Day-Farnsworth et al. 2009; Ohberg 2012; Gaskin et al. 2013; Clancy and Ruhf 2010; Matteson and Heuer 2008; Cheng and Seely 2011; Hardy and Holz-Clause 2008; Masi et al. 2010).

C. Scaling Up Alternative Food Systems With Food Hubs

Food hubs address the challenges of scaling up alternative food systems by serving as aggregators, processors, distributors, and marketers and/or sales brokers in alternative food systems value chains. Each node in the value chain is important for scaling up AFS development:

Some food hubs facilitate sales from small and medium producers to institutional buyers by **aggregating** products from multiple sources. This provides buyers with the consistently high volume and diverse product lines they require, and allows small and medium producers to compete with larger operations (Day-Farnsworth and Morales 2011). Some hubs offer **processing** services that can include everything from washing vegetables and slaughtering animals to creating products from a combination of ingredients. This allows hubs to create year-round availability in areas with a limited growing season; add value to products to farmer revenue; create a

market for “seconds” or blemished products; meet consumer demand for convenient, pre-packaged foods; and sell to institutions that have limited capacity for on-site food preparation (Ohberg 2012; Day-Farnsworth and Morales 2011).

Distribution is an important function that many hubs perform; it involves transporting (and sometimes storing) products between the farm or point of production to a buyer. Some food hubs manage this directly while others work with existing third-party distributors to manage transportation of their products. Maintaining the “cold chain,” or controlling temperature throughout product distribution, is key to preserving the quality of the product (Lindsey and Slama 2012).

Finally, some hubs **broker sales** among many producers and buyers; they can do so much more efficiently than could be done individually. As part of those sales and **marketing** services, many hubs also create brand labels and packaging materials that communicate the product’s value and story to institutional buyers and end consumers (Chef’s Collaborative 2008; Greenberg 2007; Hardy and Holz-Clause 2008; Shuman et al. 2009; Lerman et al. 2012; Block et al. 2008; Conner et al. 2008; Diamond and Barham 2011; Feenstra et al. 2011; Hoshide 2007; Painter 2007; Pullman and Dillard 2010; Stevenson and Pirog 2008; Lerman 2012).

Based on their primary functions, food hubs may seem similar to conventional wholesalers and other firms. However, food hubs have missions and goals related to AFS priorities, such as supporting farmers and local food, that conventional firms are not pursuing (Fischer et al. 2013). In support of those missions and goals, many food hubs also provide secondary functions and services such as training and technical assistance for producers, consulting with other organizations, brokering relationships between producers and consumers, actively managing the flow of information, and “facilitating particular types of relationships and supporting defined objectives that

free markets on their own may not achieve" (Morley et al. 2008, 3; Barham et al. 2012; Horrell et al. 2009).

III. Food Hub Knowledge

Our information about food hubs comes from a few major sources. The National Good Food Network (NGFN) Food Hub Collaboration (a partnership among the USDA, NGFN, the Wallace Center at Winrock International, and other organizations) manages a national database of food hubs and has conducted surveys and interviews with members of the database. There are also many case studies and reports⁹ on individual hubs or groups of them, feasibility studies and needs assessments for new food hubs, and infrastructure analyses within general food system assessments. This research has been documented in peer-reviewed publications as well as reports and documents published by government agencies and private organizations. Food hub research to date has focused on defining and categorizing food hubs, identifying their contributions to AFS development, and documenting their challenges and strategies for success.¹⁰

The most substantive study of scale and structure in alternative food systems is Phil Mount's doctoral research on local beef value chains in Ontario (2012). Mount focused his study on the influence of scale on the organizational development choices

⁹Several of these were written before the term food hub was coined, about organizations already doing food hub work.

¹⁰For a comprehensive review of academic literature on values-based supply chains, see Lerman 2012. For a practitioner-focused guide to food hub and value chain publications, see Lerman et al. 2012. Additional sources on major topics include:

- **Food hub definitions and typologies:** Barham et al. 2012; Diamond and Barham 2012; Feenstra et al. 2012; Horst et al. 2011; and Morley et al. 2008.
- **Benefits of food hubs and scaling up:** Duffy 2008; Hancharick and Kiernan 2008; Kirschenmann et al. 2008; Lev and Stevenson 2011; Lyson 2004; Martin and Pate 2011; Martinez et al. 2010; and O'Hara 2011
- **Food hub challenges:** CAFF 2011; Cech 2010; Fischer et al. 2013; Horrell et al. 2009; and Matson et al. 2013
- **Food hub strategies:** Boule et al. 2011; Clark et al. 2011; Day-Farnsworth and Morales 2011; Diamond and Barham 2012; Hinrichs and Allen 2008; Horrell et al. 2009; Mount 2012; and Ohberg 2012

made by these AFS groups¹¹ and the interrelated affects of scale and those choices on the group's development trajectory. Below I will provide an overview of the current food hub landscape and then synthesize the literature that addresses food hub development. In the sections on **Food Hub Size and Scale** and **Future Directions for Food Hub Research**, I go into more detail about Mount's work and how this research builds on his.

A. Current Food Hub Landscape

Food hubs are found across the United States and their numbers are growing rapidly. As of July 2014, the USDA had collected information on 302 vetted hubs in the U.S (James Barham, USDA, personal communication 2014).¹² This represents an 80% increase from the 168 hubs identified prior to the 2012 publication of the USDA/NGFN *Regional Food Hub Resource Guide* (Barham et al. 2012). In addition to location, the USDA has collected data on hubs' structure, customer types, products, mission, age, and other characteristics. Among the hubs identified through July 2014, 39% sold products only directly to consumers, 29% sold solely to institutions, and the remaining 32% sold to both types of customers. Twenty percent of hubs were organized as cooperatives, 29% as non-profit organizations, and 48% as privately-held businesses (including S Corps, C Corps, LLCs and L3Cs). The remaining 3% of hubs were either publicly held or informally organized.

B. Food Hub Governance and Development Literature

Both academic and practitioner-focused literature devotes some attention to the organizational development of food hubs. Topics include hub structure and governance, the size and scale of food hub operations, and their financial viability.

¹¹ Mount does not use the term "food hub" to describe these groups but within their value chains they fill the aggregation, processing, distribution, sales, and/or marketing functions laid out in the USDA/NGFN definition.

¹²The survey questions used by the USDA/NGFN to collect information about food hubs can be found at <http://www.surveymonkey.com/s/79HDYDV>.

1. Food Hub Structure

Most of the material on food hub governance focuses on how the hub is incorporated: non-profit, for-profit, cooperative, or public. Though food hubs of all structures have achieved financial viability (Barham et al. 2012; Fischer et al. 2013), many scholars argue that structure it is an important choice, with far-reaching consequences for the entity (Morley et al. 2008; Matson et al. 2013; Harbage 2013; Lindsey and Slama 2012; Diamond and Barham 2012). In their 2013 USDA report on food hubs and local food marketing, Matson et al. argue that the legal structure of a hub determines its management and decision-making processes, the types of funding and investment it can seek, its liability and risk distribution, and the ways in which it interacts and shares information with internal and external stakeholders. Mount notes that "as the initial choice in the planning process for many groups, [organizational] form has the potential to influence legitimacy and flexibility, as well as many of the subsequent governance choices" (2012, 82).

As there is minimal systematic research on food hub choices related to structure (one exception, Mount 2012, is discussed in detail below), many scholars note the strengths and weaknesses of particular types, often framed as trade-offs that must be considered. The general recommendation in this literature is that food hub founders consider their particular context and goals in determining the best structure for their operations (Matson et al. 2013; Lindsey and Slama 2012). These observations on the pros and cons of various food hub structures are gathered from many types of research (e.g., individual case studies, feasibility studies, groups of case studies, large surveys) in many contexts (e.g., location, time period, food system sector, customer type). The guidance that comes from this body of work is often too general to provide clear direction to new food hub founders and managers.

In the following section I provide a synthesis of the food hub and food system research on structure and their assessments of the tradeoffs involved in the choice. In **Tables 1** and **2** below, each structure's characteristics are summarized based on a USDA Rural Development presentation (Smith n.d.).

Non-profits

Non-profit food hubs are eligible for twice as many federal funding opportunities as cooperative hubs, and four times as many as for-profit hubs (Anselm 2013). Their eligibility for grant funding allows them to learn without the bottom-line pressure faced by for-profit organizations (Lerman 2012; Schmidt et al. 2011). Non-profits benefit from tax breaks and the ability to reinvest funds into their operations (Barham et al. 2012; Harbage 2013).

However, non-profit entities often struggle to secure long-term funding, which requires significant staff time and energy, and inhibits their ability to effectively make long-range plans (Mount et al. 2013). In addition, the process of incorporating as a non-profit is more complicated and time-consuming than some other organizational forms (Harbage 2013). Finally, non-profit hubs may face more difficulty in securing business loans (Harbage 2013) and may be perceived by outside partners as not having enough "business acumen and produce industry knowledge" (Lindsey and Slama 2012, 25) to be successful. Some hubs began as non-profit organizations but found it necessary to change their structure to accommodate complex contracts and other business relationships (Harbage 2013; Matson et al. 2013).

Food hub researchers have offered suggestions on the most effective functions non-profit hubs can perform. Those roles include facilitating and catalyzing supply chain relationships, conducting outreach and education (including marketing local foods to WIC participants and using CSAs as a classroom teaching tool),

identifying funding sources and other resources, and piloting new ventures and business models (Lerman 2012; Diamond and Barham 2011; Zajfen 2008). Multiple sources have discouraged non-profits from focusing on distribution, in part because the profit margins of even well-established conventional food distribution companies are very low (Anselm 2013). For example, one of the findings from a 2010 “Regional Produce Supply Chain Convening” event with a variety of stakeholders in the San Francisco foodshed was that “inexperienced non-profit organizations should not be doing distribution” (Cheng and Seely 2011, 28).

Cooperatives

Cooperative food hubs are comprised of and led by their members, who are usually producers, retailers, consumers, or a combination of those groups (Matson et al. 2013). Cooperatively structured organizations are well known and established within most agricultural communities (Matson et al. 2013; Gray and Stevenson 2008). Cooperatives have been used effectively in the agricultural sector in efforts to oppose monopoly and oligopoly control by private investment firms (Gray and Stevenson 2008). Based on principles of user ownership, control, and benefits, cooperative structures have the power to strengthen and reward their members (Gray and Stevenson 2008).

Cooperative organizations collect membership fees and dues that provide the organization with capital for active projects and investment. Some portion of any surplus is returned to its members (Matson et al. 2013). Cooperatives that require additional funding are eligible for fewer federal public funding programs than non-profits but more than for-profit entities (Anselm 2013). However, in a study of 95 community food projects (CFPs) that included many food hubs, cooperative entities were mainly concerned with sustaining engagement and enthusiasm, as their

operations are dependent on member participation, rather than raising revenue and finding funding sources (Mount et al. 2013).

Lindsay and Slama (2012) argue that food hub success is directly related to the engagement and investment of their producers. By design, cooperatives engender such commitment from members by requiring their investment and offering them decision-making power in the organizations (Lindsey and Slama 2012). However researchers have found that cooperatives also require continual negotiation of the inherent tensions between the values of equality, equity, efficiency, and self-governance (Gray and Stevenson 2008; Mount 2012). The consensus-based decision-making that is often used in cooperatives indicates that those groups value qualities such as fairness and equity over efficiency or conflict avoidance (Mount 2012). Unfortunately consensus-based decision-making is time consuming, and may require more of a commitment than potential members can make (Mount 2012). Morley et al. (2008) also found that in cooperative hubs, member expertise and skills create resilience, but the need for agreement makes the hub vulnerable to breakdown in instances where members' priorities differ and/or conflict.

For-profit/Private entities

Private businesses can take many forms—sole proprietorships, corporations (e.g. S-corps and C-corps), and partnerships (e.g. LLCs). Though there are differences among them, Lindsay and Slama (2012) note that they are all able to pursue business models that generate more profit than non-profits and cooperatives, and are more attractive to investors. In an early study of food hubs in Wales, Morley et al. (2008) found that for-profit hubs' simple structure and ability to respond quickly to changes in supply and demand give them the advantage of agility (Morley et al. 2008). For-profit entities may struggle to balance social missions and other goals with their

directive to earn profits for their stockholders and shareholders. In contrast to non-profit and cooperative community food projects, Mount et al. (2013) found that for-profit CFPs felt stymied by government regulations that were designed to benefit entities of the large-scale conventional system.

Table 1. U.S. Business Structures: Co-ops and Non-profits*

	Cooperatives (Co-ops)	Non-Profit Organizations (Non- Profits)
Summary	Co-ops are organized by the people who use its services and whose benefits are derived and distributed equitably on the basis of use.	Non-Profits are organized solely to provide programs and services that are of self-benefit.
Leadership	Board of Directors elected by patron members	Board of Directors
Investment Costs	One share/fee to establish membership	Membership fee
Purpose	To meet member needs for goods or services, market members' products and earn a return on member investment	To provide services or information
Legal Liability for Individual Owner / Member	Limited to members' investment in the cooperative	Limited to assets of the organization
Financial Structure	Retained profits; sale of shares to members and outside investors	Grants, individual contributions, fees for services
Profits / Gains Structure	Members in proportion to their use; preferred shareholders in proportion to investment, up to 8%	Retained within the organization
Individual / Entity Tax Structure	Members pay on qualified allocated profit and cash received; Co-op pays on nonqualified and unallocated profits	Not Applicable

*The text in **Tables 1 and 2** was compiled from Stephanie Smith's presentation for USDA's Rural Development office, entitled *How Do They Differ?: Co-ops, C-Corps, LLCs, Non-Profits, L3Cs, CMGs*. Smith (n.d.) also included Low Profit Limited Companies (L3Cs) and Collaborative Marketing Groups (CMGs) in her presentation. I did not include them here because they are not discussed specifically in the food hub literature.

Table 2. U.S. Business Structures: C-Corps and LLCs*

	For-profit/Private Entities	
	C-Corporations (C-Corps)	Limited Liability Companies (LLCs)
Summary	C-Corps are organized for-profit entities to distribute wealth to employees and shareholders.	LLCs are organized for-profit entities for a single business purpose.
Leadership	Board of Directors elected by patron members	LLC Members
Investment Costs	One share of stock	At discretion of LLC members
Purpose	To earn a return on owner investments	To earn a return on members' investment; to provide employment for members
Legal Liability for Individual Owner / Member	Limited to shareholder's investment in the corporation	Limited to LLC member(s)' investment in the LLC
Financial Structure	Retained profits and sale of shares to investors	LLC members' investments and retained profits
Profits / Gains Structure	Shareholders in proportion to investment	LLC members in proportion to investment or by agreement
Individual / Entity Tax Structure	Shareholders pay individual capital gains rate on dividends; C-Corp pays corporate rate on profits	LLC members pay individual rate, or can elect to be taxed as a corporation

*The text in **Tables 1 and 2** was compiled from Stephanie Smith's presentation for USDA's Rural Development office, entitled *How Do They Differ?: Co-ops, C-Corps, LLCs, Non-Profits, L3Cs, CMGs*. Smith (n.d.) also included Low Profit Limited Companies (L3Cs) and Collaborative Marketing Groups (CMGs) in her presentation. I did not include them here because they are not discussed specifically in the food hub literature.

Structure Flexibility

In addition to the structure-specific considerations detailed above, some scholars have noted the importance of flexibility with regard to food hub structure (Lerman 2012; Matson et al. 2013). Matson et al. (2013) argue that food hub leaders must be willing to recognize when the constraints of a particular structure are truly hampering the food hub's success, and be willing to re-structure the organization if necessary. Based on his work with local beef value chains in Ontario, Mount (2012) argues that maintaining legitimacy within Alternative Food Systems requires "a flexible, responsive governance process" that can meet the different and sometimes conflicting needs and priorities of AFS group members through the "negotiation of

accommodations" (68). Mount also found that "developing an initial consensus on direction and governance" was one of the challenges consistently faced by the groups he studied (2012, 172). Unfortunately, Matson et al. (2013) do not go into detail about what circumstances would merit changing a food hub's structure, and Mount's (2012) work does not identify what aspects of a hub's structure can provide the desired flexibility and legitimacy. Addressing these questions will be an important part of developing effective guidance for new and developing food hubs.

2. Governance and Decision-Making Mechanisms

Some research suggests that it is possible to incorporate a hub as one particular structure and still achieve some of the benefits of a different structure. In the food hub cases studied by Greenberg (2007), many of the key elements of a cooperative (collective voice, cooperation, etc.) were realized through a non-profit legal structure that provided benefits to all parties though they did not all profit from the work. In addition, though each structure can be arranged to incorporate various decision-making mechanisms, Mount (2012) argues that there are persistent associations and assumptions among AFS participants (and the general public) about the inherent nature or alternative-ness of particular structures:

For example, while the decision-making processes of the boards of corporations and cooperatives may appear similar, many believe—rightly or wrongly—that cooperatives would be less likely to lose sight of core objectives, because control over that decision-making process remains with farmers, as equals. [...] perception exists that those which either privilege profit, or prioritize an efficient or centralized decision-making mechanism will follow a different trajectory [than] those that privilege redistribution of added value based on equity. (Mount 2012, 85)

As such, even within a cooperative, there are choices to make regarding which members are involved in decisions about day-to-day operations and how often input is solicited from the membership at large (Mount 2012, 174). The separation of powers within an organization does allow each type of member to focus their time and energy

on their particular strengths (operations, fundraising, day-to-day management, agricultural production, etc.). However, Mount found that it also allows the “decision-makers to control and dictate the terms of the exchange, and the distribution of returns from added value” (2012, 84).

Other than individual instances, such as Greenberg (2007), food hub literature has not yet explicitly addressed whether many food hubs employ other “hybrid” combinations of structures, practices, and principles and, if so, how successful those operations have been. Overall, food hub literature currently focuses on the differences among structures and not on these decision-making mechanisms or why and how they are chosen.

3. Food Hub Size and Scale

The size and scale of food hubs has been a factor in some food hub research. In their study of values-based supply chain (VBSC) enterprises¹³, Feenstra et al. (2012) found that the size of the operation affected expectations for producer involvement in the governance and operations of the organization. In large producer-owned hubs, producers had a voice in governance without the requirements of day-to-day logistics (usually covered by paid staff). However, producers had less power to fight decisions that do not benefit them, and were more likely to have to sign exclusivity agreements than they would with a smaller firm (Feenstra et al. 2012). Mount notes that in the value chains he studied, it was difficult for the leaders of large groups to avoid using

¹³ Another terminology note from **Chapter 2**: Entities in a value chain treat producers as “strategic partners” and “price negotiators” (Stevenson et al. 2011, 30). The term “value” refers to both the monetary value created and retained as products move along the chain *and* the AFS values that the chains promote (Lerman 2012; Block et al. 2008; Hoshide 2007; Stevenson and Pirog 2008). There is not a clear distinction between food hubs and VSBC enterprises—they are overlapping, if not the same, groups of organizations, so the terms are used somewhat interchangeably and the VSBC enterprise research is relevant here.

conventional rationales such as efficiency to support their decisions to centralize control within the organization (2012, 83).

As noted above, the most substantive work on these topics is Phil Mount's study of structure, scale, and development trajectories in local beef value chains in Ontario (2012). Mount's work is based on the premise that AFS movements are founded on principles that will be challenged by growth and increased scale. His research offers evidence that a group's viability and success depend as much on the acceptance of how its decisions are made (and member control in that process) as they do on the actual decisions themselves (Wallington and Lawrence 2008; cited in Mount 2012, 68).

Mount compared the development of the value chain groups he studied to two "figurative trajectories" for AFS development, "conventionalized" and "alternative" (2012, 73). Mount found that groups tended to follow one path or the other over time, but the trajectories were not pre-determined by particular characteristics of the groups. Rather their trajectories developed through "cumulative causation, driven mainly by the interactions of scale and formative group decisions" (2012, 165).¹⁴ Mount's research showed that,

In larger groups, cumulative choices combine with increased scale to limit the range of options available—by filtering priorities (as efficient or impractical), strategies (as innovative or illegitimate) and outcomes (as barriers or opportunities)—and thereby magnify pressures towards conventionalization. (Mount 2012, 166)

For example, Mount found that groups whose founding prioritizes included farmer "participation [in] and control [of] group decision-making" tended to choose

¹⁴ Mount considered formative group decisions to include those that related to AFS principles, including "their approach to establishing alternative identity and relationships; their negotiation of control and purpose [...and] the decision-making mechanism itself—and how that is reflected in organizational form and innovation (including the use of bridging capital)" (2012, 165).

structures and strategies that “resist[ed] conventionalization” (Mount 2012, 166). However, increasing the scale of their value chains was often necessary for group survival, and that shift was often accompanied by the temptation to centralize decision-making and prioritize efficiency. Mount argues that “avoiding these temptations requires a clear commitment through out the chain to the core principles of local food systems governance” (2012, 167). Mount found that changes in scale at transition points could “even change the basic purpose or rationale of the group” (2012, 166).

Mount’s research makes clear that scale, structure, and other decisions related to power, control, and network membership are crucial elements in food hub development, and each decision has an affect on the availability and/or appeal of the options at later choice points. As I discuss below, my research in this thesis will build on his work on these topics.

4. Food Hub Viability

Two major food hub studies have gathered data on financial viability as a metric for assessing food hub development and success. The first was an interview-based study of 20 food hubs conducted by Barham et al. (2012) for the USDA; the second was an in-depth national survey of 107 hubs conducted by researchers at Michigan State (Fischer et al. 2013). Barham et al. used the term “economically viable” to characterize hubs whose “revenue generated from sales cover[ed] the core operational costs [...] or were well on their way to achieving this” (2012, 24). In their survey, Fischer et al. (2013) used an efficiency metric to assess food hub viability. The efficiency ratio is calculated by dividing an organization’s expenses by its revenues. A ratio of 1 means the hub is breaking even; greater than 1 means the hub’s expenses exceed its revenues; less than 1 means the hub is profitable, because its expenses are

less than its revenues. In the following section I will provide an overview of the relationships these studies identified between viability and food hub structure, size, age, and other characteristics.

Structure

Barham et al. (2012) found that structure was not related to the financial viability of the hubs they studied. Fischer et al. (2013) found that the average efficiency ratio for all hubs was 1.09 (expenses slightly greater than revenues) with a range from 0.04—6.79. There was some variation in efficiency ratio based on structure type (see **Table 3** below), but the median ratio for each type (and the entire population) was 1.00 (Fischer et al. 2013). As might be expected, non-profit food hubs were much more likely than other types of hubs to be “highly reliant” on outside funding sources. Other types of hubs were more likely to not rely on outside funding at all (64% of cooperatives, 69% of for-profits, and 100% of public hubs) (Fischer et al. 2013, 26).

Table 3. Business Efficiency Ratio by Food Hub Structure

	N	Average	Median	Range
All Hubs	75	1.09	1.00	0.04—6.79
Non-profits	29	1.20	1.00	0.04—6.79
Cooperatives	12	0.94	1.00	0.11—1.85
For-profits	34	1.06	1.00	0.33—3.53

The data in this table come from Fischer et al. (2013, 22, Table 4).

Size and Age

A food hub’s size and age have been found to affect its financial viability. Barham et al.’s (2012) interviews revealed, unsurprisingly, that “food hubs that had been in business for a longer time were more likely to say that they were already economically viable,” (2012, 24). In their sample, the median age of viable hubs was 9.5 years compared to 5 years for the not-yet-viable hubs. They also found that the size of the hubs, in terms of sales, was also related to their viability: Gross sales for viable hubs were at least \$1 million, with an average of \$6 million. In contrast, the hubs that were

not viable at the time of the interviews had a median gross sales of \$500,000 (Barham et al. 2012, 24).

The more recent Michigan State survey revealed similar results: older hubs had greater revenues and better efficiency ratios than younger hubs. In that sample, the age groups including hubs over 11 years old all had average efficiency ratios lower than 1. The least efficient of those hubs was very close to breaking even with a ratio of 1.1. In contrast, the age groups including hubs from 0 to 10 years old were all, on average, operating at a loss. Age is clearly not a definitive marker of success: the ratios of the younger age groups ranged from 0.04 to 6.79, which includes both extremes for the entire population (Fischer et al. 2013, 22, Table 5). Fischer et al. (2013) did not indicate whether they found a direct correlation between the amount of revenue generated and the hub's viability, but those two characteristics are at least indirectly linked by their relationships to food hub age (Fischer et al. 2013).

Fischer et al.'s findings revealed other relationships among food hub age, size, and other characteristics. For example, the age of a food hub and its revenue were significantly correlated to the proportion of the hub's producers that were small or mid-sized (Fischer et al. 2013, 15). Finally, they also found that hubs with larger revenues worked with more types of customers (restaurants, distributors, colleges, food cooperatives, etc.) than smaller hubs (Fischer et al. 2013, 20).

The relationships Barham et al. (2012) and Fischer et al. (2013) uncovered among food hub age, size, number of customers, and financial viability are clear indicators that is important to learn from the experiences of older, established hubs. Unfortunately, these surveys only give us a glimpse of the food hub landscape at a certain point in time, rather than longitudinal information about how hubs have developed and grown over time. This further underscores the need to learn how

successful food hubs survived and managed their growth and development, particularly for providing guidance to young and developing food hubs.

C. Future Directions for Food Hub Research

Clearly there are many important topics that need to be explored in future food hub research. In the following section I will review some of those topics, particularly ones that relate to this project; highlight some issues with the presentation and framework of existing food hub research; and present the research questions that I investigated in this thesis.

Remaining Questions and Missing Topics

There are many areas of food hub development and operations that remain unexplored. As described above, the current food hub literature addresses the issue of structure in a very general way, and does not delve into decision-making or development. Related topics that deserve further exploration are the prevalence and success of “hybrid” organizations that combine structures and principles; the evolution of currently successful food hubs; which aspects of food hub structure that might provide the “legitimacy” and “flexibility” that Mount (2012) argues are important; and the particular circumstances that would merit a food hub changing its structure.

Other researchers have identified gaps in systemic research on the impacts of food hubs on food system development (Matson and Thayer 2013), strategies for overcoming barriers to value chain development (such as access to capital and the lack of infrastructure), and the role of outside actors in value chain coordination (Lerman 2012). In addition, In the USDA’s Regional Food Hubs Resource Guide, Barham et al. (2012) note that hubs can be categorized by their sales model, or the primary market they serve: businesses and institutions, individual consumers, or both (a “hybrid” model). Though the national food hub database includes information on the

sales model of existing hubs, no major food hub research to date has focused on food hub sales models.

Finally, there is a significant gap in food hub literature about the why food hubs make their decisions and how initial decisions affect food hub operations and future choices. As Mount's research shows, decision-making processes are affected by the hub's structure, but there are many variations within the cooperative, private, and non-profit categories, and choices about decision-making mechanisms may in fact precede (or supersede in terms of importance) the choice of structure (2012). Mount is the only researcher who has done substantive research on these issues to date. His research explored these issues in the context of local beef value chains in Ontario with a focus on scale (the number of entities between producers and consumers in a value chain) and its influence. My research builds on Mount's work by exploring food hub development and decision-making in the context of food hubs in the United States that work with various products (produce, dairy, meat, etc.).

Framework and Presentation Issues

Much food hub research to date has focused on creating categories for and typologies of existing food hubs (Morley et al. 2008; Diamond and Barham 2011; Diamond and Barham 2012; Horst et al. 2011; Barham et al. 2012). Unfortunately, these typologies generally include categories that are not mutually exclusive. Also they are often based on choice points that might be more useful to researchers than practitioners. Many of the defining features used in these categories are the outcomes of decisions that hub founders will have to make in the start-up phase (structure, sales model, etc.), while other characteristics are likely clearer starting points (constituents, location, values, etc.). The mix of these two types of features in the same typology prevents future hub founders from using the categories to guide the development of

their hubs. Those more innate characteristics could be useful starting points for future categorization projects.

Much of the food hub literature on structure and development is also framed around the outcomes of start-up decisions, i.e., findings from non-profit, cooperative, and for-profit hubs presented separately. As interest in food hub development grows, food hub founders, service providers, funders, and other supporters are looking for guidance on best practices and strategies for success. It would be much more effective to provide them with such information based on what we know about how hubs started, rather than framing the information around the outcomes of early decisions.

My Research Questions

This thesis research is an initial effort to move beyond describing the existing landscape of food hubs and address gaps in the literature related to our knowledge of food hub decision-making, structure, and development. The specific questions I investigated include:

1. Why were the hubs created?
2. How did their founders choose the type of products the hubs would work with? How did they choose the activities the hubs would pursue?
3. Why did the hubs' founders choose their structures?
4. For each of these decisions, what factors were taken into consideration? What were the advantages and disadvantages of those choices?

I also investigated how these decisions affected subsequent choices in food hub development. I explored these questions in an interview study of well-established and well-documented hubs. My methodology for this research and the criteria I used to choose my case study hubs are described in the following Chapter.

CHAPTER 3: METHODOLOGY

I. Selecting Food Hubs

This research is an exploratory critical case study, designed as an initial effort to address gaps in the literature about food hub decision-making. I studied a wide range of well-established and well-documented hubs in order to maximize the breadth of my findings. I chose these food hubs based on criteria related to their business model, age, products, structure, and documentation. To begin my search, I filtered the hubs in the USDA's December 2012 Food Hub Database (total population 223 hubs) based on the following criteria:

- These hubs address issues of scale in AFS development by selling only to institutions. These hubs are identified in the USDA's food hub database as having a "farm-to-business/institution" business model rather than a "farm-to-consumer" or "hybrid" (both farm-to-institution and farm-to-consumer sales) model.
- These hubs were old enough to be well-established, but not so old that it was unlikely I could have access to their founders for interviews. The hubs I included in my potential sample were founded between 1990 and 2009.
- These hubs were well-documented organizations to which I have a high level of data access through my personal networks, institutional affiliations, and/or prior documentation such as case studies, articles, and profiles.
- These hubs sell fruits, vegetables, and other produce. The reasoning behind this choice was that though food hubs are also important in AFS meat and dairy value chains, the infrastructure needs and licensing processes in those industries are different enough that it would prevent comparisons across cases. However, for reasons explained below, the final set of hubs studied in this research work

with produce, meat, dairy, and some processed goods.

These criteria gave me a set of 26 potential hubs to study. Craig Chase (a sponsor of this research and a local food systems expert based at Iowa State University and the Leopold Center for Sustainable Agriculture) offered input to narrow down the list further, removing ones that were not appropriate for this project (e.g., produce auctions, which function differently than most food hubs; a cooperative that was in the process of folding, etc.) and highlighting ones he thought were especially worth learning from. I began my interview search with the top hubs Chase had identified and continued with the rest of the list when some of those potential interviewees were not available.

II. A Variety of Critical Cases

The twelve hubs included this study varied in their structure and other characteristics, such as region and age, that might affect their choices. The characteristics of the food hubs in this research are detailed in **Tables 4 and 5**, located at the end of this chapter. They were founded between 1995 and 2009, some by existing organizations, some by groups of producers, and others by individual food systems advocates. Three hubs are located in the Far West region, five in the Northeast, two in the North Central, and one each in the South and Mid-Atlantic. Three of the hubs are cooperatives, four are non-profit organizations, and five are for-profit businesses structured as Limited Liability Corporations (LLCs).¹⁵ All of the hubs studied in this research do some aggregation, distribution, and marketing/sales of their products; they differ in their levels of control over and involvement in various activities.

¹⁵ Three of the food hubs in this research operate as departments of a larger organization. A synthesis of those interviewees' thoughts on the advantages, disadvantages and dynamics of that kind of food hub structure is provided in **Appendix II**.

I began this research with the intent to study hubs that worked with produce. However, my final sample includes some exceptions (e.g., VQM and FE have worked with produce in the past but they currently do not). Because of this variation and because many of the hubs that sell produce also sell other items, I divided them into two major product categories: hubs that sell a single type of product (e.g., only fresh produce) and hubs that sell multiple types of products (e.g., fresh produce, cheeses, and value-added products). In my final sample of twelve hubs, half worked with a single type of product and half worked with multiple types. The variation in this and the other characteristics described above gave me a wide breadth of contexts in which to explore and search for patterns in food hub decision-making.

III. Interviews and Analysis

My interview process for this thesis included online research, identifying and contacting key informants, and conducting, transcribing, coding, and analyzing my interviews. For each hub, I conducted background research using the hub's website and previously published narratives and studies about the hub. I used the USDA database and food hub websites to identify a key informant (founder, director, or manager) for each hub and contacted them by email. I created an interview guide structured around key topics in this research project: food hub structure, governance, relationships, and decision-making processes. I used my background research to tailor my questions for each interview.

My interviews were loosely structured and required significant variation to account for food hub differences, interviewee knowledge, and the conversation flow. Semi-structured interviews were appropriate for this research because my questions were open-ended, and I wanted to get in-depth answers from respondents without my ideas and pre-conceived understandings coloring their responses (Kvale 2007;

Gaber and Gaber 2007). Examples of the questions in my interview guide are listed in **Appendix I**. I conducted twelve interviews over the phone in the spring of 2014. With one exception because of logistical issues, I recorded the interviews to supplement my note-taking and ensure reliability in my results. Before reaching out to interviewees, I conducted a pilot interview to test the wording and order of my questions and made changes as necessary.

The names and titles of my interviewees are listed in **Table 6**, at the end of this chapter. For eight of the twelve hubs, I was able to speak to a founder or co-founder about their initial decisions and the hubs' development. For CPW, FFC, AO, and VQM, I spoke with current staff members about their knowledge and experience of the hubs' development. Two hubs had recently undergone major transitions at the time of my interview: FoodEx had recently been liquidated because of loan and cash flow issues and Vermont Quality Meats had just been purchased by new owners. I interviewed FE's co-founder and VQM's new co-owner about the history of their hubs and their plans for future food hub work. All interviewees were current employees of their hubs except for my contact at POP Market. The founder remains in contact with the organization in an advisory capacity and was able to speak to the hub's decision-making at start-up and throughout its development.

I used my notes and the interview recordings to make complete transcripts for each interview. I then coded the transcripts, starting with the major topics of the interview and adding other themes and ideas as they appeared. I created excerpt files (Weiss 1994) for each theme with the relevant content from each interview, and in most cases did a second round of coding and organizing within each theme. I used these excerpt files to synthesize common themes and ideas from interviewees, to note differing points of view, and explore the decision-making patterns that emerged. The

factors used in food hub decision-making and patterns and relationships among them are explored in **Chapters 4 and 5**.

Table 4: Food Hub Characteristics

Food Hub	Region	Structure	Products**	Founded
ALBA Organics (AO)*	Far West	Non-profit	Single	2002
Cherry Capital Foods (CCF)	North Central	For-profit (LLC)	Multiple	2007
Co-op Partners Warehouse (CPW)*	North Central	Cooperative	Multiple	2000
Farm Fresh Connection (FFC)	Northeast	For-profit (LLC)	Multiple	2003
FoodEx (FE)	Northeast	For-profit (LLC)	Single	2009
Local Food Hub (LFH)	Mid-Atlantic	Non-profit	Multiple	2009
Okanogan Producers Marketing Association (OPMA)	Far West	Cooperative	Single	2007
Pennies On the Pound Market (POP)*	South	Non-profit	Multiple	2009
Red Tomato (RT)	Northeast	Non-profit	Single	1997
The Farmer's Cow (TFC)	Northeast	For-profit (LLC)	Multiple	1995
The Shepherd's Grain (TSG)	Far West	For-profit (LLC)	Single	1999
Vermont Quality Meats (VQM)	Northeast	For-profit (LLC)	Single	2000

*These hubs are part of larger organizations: ALBA Organics operates within the Association for Land-Based Agriculture (ALBA), Co-op Partners Warehouse is a department of The Wedge Natural Foods Coop, and POP Market is part of Farmer Foodshare.
 **As noted above, hubs in this research either work with a single type of product, e.g., fresh produce, or multiple types of products, e.g., fresh produce, dairy, and value-added products.

Table 5. Food Hub Founders

Food Hub	Founders*	
	Type	Background
ALBA Organics (AO)	Organization	Independent
Cherry Capital Foods (CCF)	Individual(s)	Independent
Co-op Partners Warehouse (CPW)	Organization	Buyer/ Supplier
Farm Fresh Connection (FFC)	Individual(s)	Producer
FoodEx (FE)	Individual(s)	Independent
Local Food Hub (LFH)	Individual(s)	Independent
Okanogan Producers Marketing Association (OPMA)	Group	Producers
Pennies On the Pound Market (POP)	Organization	Buyer/ Supplier
Red Tomato (RT)	Individual(s)	Independent
The Farmer's Cow (TFC)	Group	Producers
The Shepherd's Grain (TSG)	Individual(s)	Producers
Vermont Quality Meats (VQM)	Group	Producers

*The hubs in this research were founded by one or a few individuals, by established groups, and by pre-existing organizations. The founders have varied backgrounds—some were already involved in food system work as producers or buyers/suppliers and others who were independent.

Table 6. Interviewees

Food Hub	Interviewee Name	Interviewee Title
ALBA Organics (AO)	Chris Brown	Executive Director of ALBA
Cherry Capital Foods (CCF)	Evan Smith	Co-founder; Chief of Operations
Co-op Partners Warehouse (CPW)	Lori Zuidema	Director of Business Development
Farm Fresh Connection (FFC)	Mariel Nunes	Director of Marketing and Communications
FoodEx (FE)	JD Kemp	Co-founder; CEO
Local Food Hub (LFH)	Alan Moore	Co-founder; Director of Distribution and Business Development
Okanogan Producers Marketing Association (OPMA)	Watershine Woods	Founding Member; Sales Coordinator
Pennies On the Pound Market (POP)	Margaret Gifford	Founder; former Director of Farmer Foodshare
Red Tomato (RT)	Michael Rozyne	Founder; Executive Director
The Farmer's Cow (TFC)	Robin Chesmer	Founding Member; Managing Member
The Shepherd's Grain (TSG)	Karl Kupers	Senior Strategic Adviser; Co-Founder; former General Manager
Vermont Quality Meats (VQM)	Drew Alinovich	Co-owner; Chief Operating Officer

CHAPTER 4: FINDINGS

This chapter presents my interview findings in two sections. First, I describe the major decisions food hubs made (creation, products, activities, structure, and management) and the factors that influence those choices. Second I explore potential patterns in decision-making related to food hub characteristics and the inter-relationships among food hub choices. For reference, the names of the food hubs in my study and the names and titles of my interviewees are listed in **Table 6** above.

I. Food Hub Decisions

Creating and managing a food hub involves decision-making related to the food hub's work and governance, including its products, activities, structure, and management. In the following section I provide a synthesis of interviewee responses about the factors that went into making those decisions at start-up and at later points of growth and development.

A. Creation

Food hubs in this research were created to address the needs of their particular constituents, including the producers, buyers, and consumers¹⁶ in their communities. Some hub founders chose to establish a mission that focused on particular subsets of those groups.

1. Producer Needs

The majority of the hubs in this research were formed to address producer needs for additional or expanded market access. Some of these hubs were started by producers themselves (individuals or groups); others were created by an organization

¹⁶A terminology note from **Chapter 2: Producer** is a general term that encompasses farmers, ranchers, growers, and others involved in raising or growing food. As this research does not include any hubs that work with ranchers, the terms **farmer** and producer are used somewhat interchangeably in this paper. In some instances the term grower is used when referring to a hub's constituents that only grow products such as fresh produce (as opposed to raising or producing meat and dairy products). **Buyers** are institutions such as grocery stores, food service companies, and restaurants. Though **consumer** demand influences food hub work and choices, the hubs in this research sell their products to buyers, not directly to individual consumers.

or individual with a passion for supporting local producers. For example, the Okanogan Producers Marketing Association was created by a group of growers who needed to reach markets outside of their region. As Watershine Woods, OPMA's sales coordinator explained, "the whole valley is full of orchards and you just can't sell apples to apple growers." The Farmer's Cow was formed by a group of Connecticut dairy farmers who wanted to expand their businesses but weren't able to capitalize on the consumer interest they generated through farm tours and on-farm activities. Selling through the conventional dairy system meant they were producing what Robin Chesmer, TFC's managing member, called a "faceless product"—farmers "didn't control where the milk went" and thus "couldn't definitively say where anyone could buy [their] products." Chesmer explained that creating TFC was a long-term growth strategy for its members: "We had younger generations that wanted to come into the business and we viewed The Farmer's Cow as an opportunity to expand our businesses and provide opportunities for the next generation."

Other hubs in this research were founded by non-producers (individuals, groups, and pre-existing organizations) who wanted to support local producers. For example, Michael Rozyne created Red Tomato to find "creative market solutions that made it possible for farmers to not just stay [in but also] to get stronger in the local wholesale market system" in New England. Evan Smith, Cherry Capital Foods' chief of operations, noted that the "unintended consequences" of the conventional food system's "growth have had pretty detrimental effects on some of the players." In light of that, Smith said, CCF is "trying to keep farmers and farming as a viable career choice [because] if we don't all we're doing is repeating the same mistakes of the system that we're working to change." The Association for Land-Based Agriculture (ALBA), a non-profit farmer training organization in southern California, created its food hub, ALBA

Organics, to address the marketing needs of its trainee farmers. ALBA's management team decided it wasn't reasonable to expect their farmers to learn all the agricultural production lessons of ALBA's programs and market their own small amounts of perishable produce at the same time

2. Buyer and Consumer Needs

Interviewees from four hubs said they were formed to meet demand for local foods from buyers and consumers in their communities. Cherry Capital Foods' founder was working for a mainstream produce distributor when he learned there was a strong demand in the region for local produce, so he decided to start a food hub to address that need. Lori Zuidema, CPW's director of business development, shared that the Wedge Natural Foods Co-op got into distribution because they wanted to offer their customers local and organic product "that wasn't readily available from other distributors." Zuidema said the Wedge was "looking for a type of supplier that didn't exist yet" so the Wedge's board created the Co-op Partners Warehouse food hub to serve the Wedge and other stores in the area.

3. Mission and Focus

Some food hubs were founded to meet the needs of particular sub-sets of the groups discussed above. For example, Farmer Foodshare's founder Margaret Gifford, noted that the organization was created to "bring new community, new people, new segments into" alternative food systems "and democratize the local food system in our area [to] make local food less of an elite project." Because Farmer Foodshare focuses on addressing issues of hunger and food access, Gifford said its food hub, Pennies on the Pound (POP) Market, works to provide "a more consistent supply [...] of really fresh, healthy food for people in chronically ill or at-risk populations." FoodEx was founded to reach a certain segment of the AFS movement in the Boston area. JD Kemp, FoodEx's founder, said that they wanted to work with "the next group of

buyers—not the folks buying [local product] off the back of the pickup truck but the people who would [buy local] if it were easy enough." On the production side, Red Tomato works to support growers who implement sustainable growing practices. Rozyne said that the hub works with organic growers but it also works with conventional growers that [RT staff] think of as *unconventional growers*—because many of them are working so hard to farm well, to value organic matter, [practice] crop rotation and no-till. [...] They're not going to become certified organic but they're doing a whole lot of things that [Red Tomato considers] good sustainable practices.

Rozyne explained that Red Tomato is "fighting hard for there to be a place for those unconventional growers and their practices to be appreciated and valued and sometimes even paid for, [to be] recognized in addition to certified organic."

B. Products

Food hubs in this research made decisions about the products they work with based on the needs of their constituents, the hub's commitment to sustainability, its capacity, and profit.

1. **Constituent Needs**

Producer and buyer needs factored strongly into food hub decisions about the products they work with. For example, in hubs created by producers, such as OPMA, TFC, and VQM, their initial product selection reflected the existing product mix of their members. These hubs and others made decisions to change or expand their product lines based on a combination of producer and buyer needs, market opportunities, and the other factors discussed below. For example, The Farmer's Cow first expanded beyond dairy products because a produce buyer for a large supermarket chain approached their members at a conference and asked if they sold apple cider. Similarly, Cherry Capital Foods expanded into selling chicken and then other proteins because their buyers and customers were looking for alternatives to mainstream poultry producers. In addition to responding to requests for specific items, Local Food

Hub's co-founder noted that they try to avoid working with products that customers can easily buy directly from producers.

2. Sustainability

Multiple hubs in this study have made commitments to supporting organic and/or sustainably produced foods. For example, ALBA owns and trains farmers on certified organic farmland and its food hub (ALBA Organics) only works with organic produce. Zuidema said The Wedge and CPW had made the decision to sell and distribute "certified organic almost exclusively." One exception Zuidema mentioned was that CPW sometimes works with orchards that are not organic because of the difficulty in finding organic local apples in their region. As noted above, Rozyne said that Red Tomato has "a philosophical bias" toward organic production "but it's not religion," which allows the hub to sell products grown with a variety of sustainable practices. Similarly, Kupers said The Shepherd's Grain's management doesn't spend time "debating which is better" when considering their no-till approach, certified organic methods, and other types of production practices. He said TSG appreciates the "leap that [certified organic] made and [how] they've really opened people's eyes to caring about where and how food is produced" because "their lead has allowed us to step in and create a nice business that doesn't follow those standards" but is committed to other sustainable practices.

3. Capacity

Hubs in this research made some of their decisions about the products they work with based on issues of capacity, such as their staff expertise and the potential new products' compatibility with their existing products and infrastructure.

Expertise

Kupers' original plan for The Shepherd's Grain was to sell a diversified set of products but he and TSG's co-founder realized that the market was not ready for them.

He said they decided to focus on their area of expertise: "We stepped back and did what we do well: we raised grain to be milled into flour [and] built a brand" based on their sustainable growing practices. Red Tomato's decision to work with fresh produce was based on its founder's experience in and affinity for the produce sector. RT's staff has informally discussed the option of expanding beyond produce to work with meat products but has no plans to do so in the near future. According to Rozyne, their current work with fruits and vegetables keeps them busy and they want "to master one thing really, really well." Rozyne explained further:

I think there are zero concerns about meat as a *food* here. But it's about knowledge and what it takes to be really good about something, and I certainly don't know enough about meat to do it justice. That doesn't mean we couldn't hire that knowledge if we decided to. It would be a really smart long-term investment for someone to take on [...] but I think one has to approach it with a kind of 10- to 20-year horizon.

ALBA Organics is also focusing on working with the right mix of products. Recently the hub has been paring down the number of types of products it sells in order to increase consistency in the quality and quantity of its crops. Chris Brown, ALBA's executive director, said that their trainee farmers had previously been able to grow "what they wanted regardless of their experience growing it." He pointed out that this meant ALBA Organics was "obligated to sell" the mix of products "on its doorstep any given morning [...] which is a very inefficient way to run a marketing operation."

Compatibility

A new product's compatibility with a hub's existing products and infrastructure has been a major consideration for some food hubs deciding whether and how to expand their product selection. For CPW, Zuidema, found that adding dairy products and items like soy milk and tofu to the hub's existing line of fresh produce worked well "because they were perishable and all of [the hub's] equipment

was refrigerated." Local Food Hub's co-founder said the hub also makes decisions partially "based on what our infrastructure holds and carries well." Woods, OPMA's sales coordinator, said that it was important for a hub to have the right combination of products that has "some similarity but diversity within [its] mix of products." Because OPMA works with produce, Woods explained, "if someone suddenly had seafood that would [mean] a whole different person to talk to in the store" and different systems such as for transportation, processing, and sales.

4. Profit

Profit and profitability affected food hub decisions about the products they work with. JD Kemp, FoodEx's co-founder, shared that one of the hub's major challenges was related to the "fact that [they] moved a lot of potatoes and carrots." FoodEx's producers were able to get good prices for those products, but because "potatoes are heavy and cheap," Kemp said, FoodEx would spend half the value of the product on "driving it around." According to Kemp, FoodEx had trouble moving buyers away from "the pastoral local vegetable story to more interesting proteins [and dairy]" which would have given the hub "more money on the truck." In the next iteration of the food hub, Kemp plans to address this issue by working with value-added products.

Some food hubs have specifically expanded their product lines to ensure that the hubs can operate and generate revenues throughout the year. Smith, chief of operations at Cherry Capital Foods, said they knew early on that "produce is not the way to make a living year-round in northern Michigan so [they] started expanding into meat and cheese and dairy and fish and then the value added products," with the goal of operating like "a broad-line distributor like Sysco or Gordon Foods." Similarly, ALBA's executive director said that ALBA Organics sells and distributes product from

outside commercial producers in the off-season because their product is high quality, it opens “a channel that wouldn’t otherwise be open, and it covers [the hub’s] costs in the downtime.”

C. Activities

All of the food hubs in this research do some aggregation, distribution, and marketing/sales of their products; they differ in their levels of control over and involvement in those activities, their investment in infrastructure, and the additional services they provide. Their choices on these matters were based on reasons closely related to the factors that brought about their creation and affected their product choices, including constituent needs, logistics, and efficiency.

1. Constituent Needs

The needs of their producers, buyers, and other constituents directly influenced food hub choices about the activities they would pursue. For example, ALBA knew that its trainee farmers needed market access, so its food hub, ALBA Organics, provides them with aggregation and marketing services. Vermont Quality Meats is working to consistently meet its buyers’ needs by coordinating its producers’ breeding, slaughter, and sales schedules.

Some hubs chose to address issues of transaction costs that were hampering local food systems development. Moore said that he and Local Food Hub’s other founders knew that though there was buy-in at the executive level of institutional buyers in its region, “the people who do the purchasing on a day-to-day [basis weren’t] going to call around to a lot of farms.” To streamline the process for those purchasers, they established LFH as the “one number to call” for buyers in the region to find and purchase local food. One reason The Wedge Co-op created its food hub was that farmers in its region were spending significant time traveling to stores to sell and deliver their products. Zuidema said that when CPW was created, those farmers

were very interested in working with a “distributor that was especially tuned to their needs.” JD Kemp said that producers in his region had similar desires. When he and FoodEx’s other founders first created the hub, they “were fully convinced that the producers and growers wanted to get involved and get the distributors out of their lives.” However, they learned that instead of wanting “to do their own distribution, marketing, [and] branding,” what producers “really wanted was a distributor they could trust.”

2. Logistics and Efficiency

Logistics and efficiency have been major considerations in food hub decisions about their activities, particularly their level of involvement in distribution and investment in infrastructure. Farmer Foodshare’s founder said the POP Market was first envisioned as a food hub that did not require refrigeration or a major investment in infrastructure. However, because buyer and producer schedules were not as compatible as they’d hoped, the hub eventually needed to lease its own warehouse with refrigeration in order to maintain the cold chain.¹⁷ Local Food Hub’s co-founder said they made changes to the hub’s distribution process after realizing they could not create a pick-up schedule that worked for all of the producers in an area: “We were losing money and time having the trucks sit somewhere, so we realized quickly that it made more sense for the product to come to us.” Moore said LFH soon found additional benefits to the change in procedure: it gives the staff more “control over quality” because they see the product as it comes in and can quickly address any issues, and “growers also like the opportunity to come and say hello, to chat with us, see other product, [and] figure out where it’s going.”

¹⁷ **Cold chain** refers to the processes and safeguards related to transporting and storing perishable, temperature-sensitive products, such as fresh produce.

Red Tomato originally managed its own distribution directly, but after a few years, Rozyne said, they realized it was unsustainable: "Distributing with our own warehouse and trucks [was] too expensive and [it was] killing us in terms of our quality of life." The hub soon started operating as a non-asset-based distributor, meaning they manage the sales and logistics of local food distribution, but do not own or operate a warehouse or trucks. Though that transition "was very scary" and involved a "huge risk," Rozyne said they knew within a couple years that the new arrangement would work. The Farmer's Cow has gone through a few different types of distribution systems. The hub began by using the distribution services of the dairy company that owned the plant where TFC's members' milk was bottled. After TFC expanded its product lines to include cider and other non-dairy items, Chesmer said, "for efficiency reasons," they switched to a system in which TFC directly controlled the inventory and managed the loading process. After a period of recent growth, the hub made another change, from staffing its distribution center and outsourcing the trucking to working with a distributor who provides warehouse staff in addition to trucks and drivers. According to Chesmer, TFC found "a lot of synergy" in working with this new operator who also distributes his own products and wants to grow his business.

D. Structure

As discussed in **Chapter 2**, structure is an important choice in the creation of a food hub. Interviewees shared the reasons their food hubs had chosen their particular structure as well as advantages and disadvantages they had seen as a result of their decisions. These factors and observed effects, including financial and operational considerations, are synthesized together in the following section.

Though the for-profit, non-profit, and cooperative structures are discussed as unique models below, it is important to note that in practice the boundaries may be

less clear. For example, Local Food Hub's co-founder said the hub considers itself "a non-profit organization with a revenue [or a] business-based non-profit." In an interview with the *Portland Phoenix*, Farm Fresh Connection's founder explained that FFC is "a business with a social mission, which is to provide Maine farmers with another market and provide institutions with locally grown food" (Krummel 2003 n.p.). In addition, a non-profit and a for-profit hub in this research have both incorporated cooperative governance mechanisms into their structure.

1. Financial Considerations

Taxes

Tax arrangements were one of the main financial considerations that interviewees discussed. Non-profit interviewees mentioned the advantages related to accepting donations and declaring losses. Interviewees from for-profit LLC hubs said they also chose that structure in part for its tax advantages. FoodEx's founder explained the LLC is a good structure for hubs that don't plan to make a profit immediately, because "you can take all the business losses as personal losses, which is very helpful as you build the company [...] and when you do start making money, you can roll forward all of the losses you've been writing off for the last few years and not owe taxes on those either."

Funding

A food hub's structure directly affects the types of funding sources it has access to; unsurprisingly, that aspect played a large role in the structure choice. For example, FoodEx's founders chose the for-profit structure in part because they wanted to raise money through private investment instead of having to repeatedly apply for foundation funding. Interviewee responses about structure, reliance on revenues, and access to grants and donations are discussed below.

Revenues

Some interviewees noted the benefits of for-profit and cooperative organizations' reliance on revenues to cover their expenses. Zuidema said that for CPW, "the pressure of 'we've got to make money [because] we've got to make payroll this week'" was a crucial element of their success that non-profits don't necessarily have. One of the non-profit interviewees said that food hubs could benefit from following examples in "the small-scale for-profit business world, because they don't have any other choice" but to create a profitable enterprise. Interviewees also suggested that that pressure has advantages beyond the success or failure of individual food hubs. Kemp said FoodEx's founders followed the for-profit path because they "wanted to force [them]selves to figure out how to make money" because they "believed that would create best social impact by demonstrating that the right thing was profitable, and [they] wouldn't have to worry about evangelizing to the world to do it that way, if it works for a profit." Cherry Capital Foods' chief of operations expressed his confidence in the for-profit system and how it weeds out ineffective models: "in general the free market system [...] is pretty good at sorting out what works and what doesn't work.

Grants Funding

Though I asked interviewees about the advantages and disadvantages of their particular hub's structure, interviewees from all types of food hubs noted that non-profits benefit from their eligibility for donations and grants. Grants can serve as seed funding to help a new food hub get through its start-up phase and, as ALBA's executive director put it, access to grant funding "changes the economics" of decisions like investing in a cooler or other infrastructure. For example, the non-profit Farmer

Foodshare received grant funding for a paid staff person to run its food hub, the POP Market.

Two non-profit food hub founders said the ability to experiment with different programs and models that grant- and donation-based funds provided was a key component of the non-profit structure. Farmer Foodshare's founder said that the POP Market food hub was created as an experiment to see if they could "build some demand [and] create a wholesale market specifically aimed at mid- and lower-tier income groups" and to "see if [they] could do food hub work without using [or] investing in refrigeration." Red Tomato's founder explained that he chose the non-profit structure to keep his food hub's focus on creativity and experimenting rather than putting "all the pressure on just sales volume."

Interviewees from non-profits also said that their hub structure allowed them to pursue non-revenue-generating activities that were crucial to their mission and purpose. Local Food Hub's co-founder noted that the work they are doing to scale up their producers into wholesale markets "takes a lot of time and resources." He further argued that if Local Food Hub was just trying "to buy and sell local produce into different channels" the hub would quickly need to move away from the particular producers it wants to help in order to stay in business. "Red Tomato's founder expressed a similar sentiment—that if the food hub was "fighting for its purest economic survival all the time," Red Tomato's staff wouldn't be able to do their broader work such as participating in food system conferences, networking, and education. ALBA's executive director noted that a major benefit to ALBA Organics functioning within the non-profit structure is that the food hub can focus on "ALBA's overall mission to serve and grow farmers and help them establish long-term viable organic family farms" He noted that ALBA's leadership has discussed the advantages

of making the hub an independent, for-profit entity, but ultimately decided against it because the hub might act “too much like a business [...] and go for growth instead” of focusing on its original mission.

Though clearly there are significant benefits associated with the non-profit structure and access to grant funds, they are not a panacea for all food hub challenges. In fact, one interviewee pointed out that grant funding is also a “double-edged sword” because it can encourage non-profit organizations to take on projects or programs that align with the funder’s goals but don’t actually address the organization’s core mission. A non-profit food hub director noted that this can leave hubs “spread really thin” and argued that it’s important to identify and focus on specific goals rather than following opportunities to raise money. For example, Local Food Hub recently stopped directly managing its farm because the wide variety of activities made it hard for the hub to get funders to support its main aggregation and distribution work

Profit

A food hub’s relationship to profit is one of the key facets of its structure. For-profit businesses are obligated to their investors, stakeholders, and shareholders to make a financial return on their investments. Cooperatives have a similar responsibility to use member fees responsibly and pay out dividends to their members. OPMA’s sales coordinator said that being a cooperative helped them focus on the overall goal of the hub: to “put more money in the farmers pocket.” As a cooperative, OPMA does not have to worry about generating profit for the entity itself or to distribute to external shareholders; the hub can focus on covering expenses and getting the best prices for its member farmers. Non-profit organizations are accountable to their board of directors and funders (e.g., foundations, government agencies, individuals) to

pursue activities related to their mission and/or particular projects. The progress made toward those goals and metrics is considered the non-profit's "return on investment."

Cooperatives and non-profits are similar in their lack of a requirement to generate profit. However, the majority of the discussion about the topic in this research focused on for-profit and non-profit structures and the consequences of their relationships to profit, for both individual organizations and the larger food system. For individual organizations, one non-profit hub founder said, "the negative [side] of functioning as non-profit is that you're allowed to be unprofitable; you're not forced to diversify, not forced to do things smarter and cheaper" because grant funding doesn't force you to "establish your true market underneath you." ALBA's executive director shared some of the debates ALBA's leadership has had on the topic. Brown said that ALBA wants to "create sustainable farming businesses that can operate after they leave" the training program. However, he said, as a non-profit, ALBA Organics may be providing "services that are artificial [and] keep the farmers from becoming truly independent" because they are protected "from harsher market realities." In the end, ALBA decided that was an acceptable risk because they needed to provide farmers with market access and, as noted above, ALBA Organics operating as a non-profit allows the hub to focus on the mission of serving those farmers rather than its own business growth.

Some interviewees pointed out the complications of non-profit food hubs operating within a traditionally for-profit food distribution system. One non-profit interviewee argued that "it's a false hope" to use grant funding to "create something that could be a fake market" and noted that this is a generally a problem for non-profits doing social enterprise work. A for-profit interviewee also argued that when non-profit food hubs "creat[e] artificial economies with foundation support" they're

"actually [doing] negative work" because it "only works if the foundation has extremely deep, forever deep pockets." As noted in Chapter 2, recent research shows that there are some non-profit hubs that regularly lose a majority, or even all, of their annual budget and only continue to operate because of grant funding (Fischer et al. 2013). The same interviewee said those hubs

don't have to worry about what would actually be a viable business for anyone else to step in and do [which means] they've locked themselves into an interesting market place where no one else can compete with them. No one else is going to raise \$1 million plus in foundation money to do local food work in that region and no one else can touch their prices because they're essentially fake—they're doing it at a 50% discount [because foundations and other donors are filling in the gaps].

He argued that this kind of grant-dependent project involves "investing cash in a way that you don't have to be as smart about it" and that "having to make money" doing local food distribution "puts a whole different spin on everything."

Just as there are advantages and disadvantages to the non-profit food hub model, there are downsides to the profit requirement of the for-profit structure. This is particularly a problem for businesses, such as food hubs, that have a social, environmental, or otherwise not-profit-based mission. FoodEx's founder explained that "in a publicly traded C-Corp, you as the board or CEO could make a decision for environmental, social, etc. reasons that takes profit off the bottom line and the stockholders can sue you for the value" of that loss.¹⁸ Non-profit hubs in this research such as ALBA Organics, Red Tomato, and Local Food Hub have chosen their structure as a way to prioritize their mission-related objectives as opposed to the obligation to generate profit for the hub itself.

¹⁸ Kemp discussed the benefits of the B-Corp or L3C as an alternative solution (see **Appendix II** for more information), and advised all businesses with any kind of mission beyond generating profit to detail in their bylaws the reasons they could and would make decisions that might diminish the company's profit margins.

2. Operational Considerations

Simplicity

Four interviewees mentioned the simplicity of the incorporation process as a factor in choosing the for-profit LLC structure; that simplicity seemed to also be a characteristic of LLC governance and decision-making. The importance of simplicity and flexibility is echoed in interviewee remarks on other operational considerations such as decision-making speed and control.

Decision-Making Speed, Nimbleness, and Flexibility

The decision-making speed, nimbleness, and flexibility of different structures factored into the choice for many hubs in this research. Cherry Capital Foods' chief of operations pointed to "more rapid decision-making" as one of the main advantages of being an LLC. Smith credited the for-profit LLC structure with Cherry Capital Foods' overall success, noting that it gave the hub "the most flexibility" and "that flexibility gives [CCF] the best chance of long-term stability and growth potential."

Much of this discussion focused on comparing cooperatives to for-profit businesses and the ways in which the philosophy of the cooperative sometimes conflicts with the logistical realities of running a business. Interviewees from for-profit and non-profit food hubs noted the slow decision-making speed of cooperatives as a reason for choosing a different structure. Vermont Quality Meats' COO said the difference between responding to problems as an LLC and a cooperative was significant: "I can make a decision in seven seconds whereas seven people would need three board meetings and a month and a half to make the same decision." Red Tomato's founder said he strongly considered establishing the entity as a farmer cooperative, because that would have fit with the "emotional mission-driven tendency in an organization like" Red Tomato. However, Rozyne's previous experiences with farmer coops made him realize that the conservative nature of cooperatives would not

allow him to create a “really entrepreneurial environment here for creative risk taking--not so much financial risk but strategic risk.”

As noted at the beginning of the Structure section, hubs in this research have chosen a particular structure and then incorporated some elements of other structures into their operations. For example, in reflecting on his experience in the cooperative world, Red Tomato’s founder said

I had a lot of time to learn the positives and negatives of collective process. So I retained the parts I valued the most and dispensed with the ones I valued least. And I’ve tried to come up with some kind of hybrid that puts a lot of emphasis on participation and yet doesn’t get too bogged down in bureaucracy and very slow, timely processes.

Similarly, The Farmer’s Cow’s managing member said the hub’s members considered choosing the cooperative structure but “wanted to be more nimble than a cooperative.” They decided to incorporate some of the democratic aspects of the cooperative structure into their LLC—the members are all equal partners in the corporation and they work together to reach consensus when solving problems.

Interviewees from the cooperative food hubs in this research recognized the time commitment and slow decision-making process as major disadvantages of the cooperative structure. OPMA’s sales coordinator said that it took “hundreds of hours of meetings” to get [the food hub] started” and then more to manage and maintain the cooperative. CPW’s staff members are able to make day-to-day choices on their own but larger decisions have to go the Wedge Coop’s members. Zuidema added the caveat that this might not be as much of a problem for smaller cooperative food hubs operating on a different scale: The Wedge has about 4,000 members that all have to be notified about meetings “even though certainly not 4,000 people would show up for a meeting or respond [...] you still have to make the effort because they are members.”

Control

To some extent, decision-making speed is a function of the level of control a food hub manager or director has; this was also an important factor decisions about structure. A director or manager's control and decision-making latitude in non-profit organizations and cooperatives is much more limited than most for-profit structures because they are not allowed to make major unilateral decisions without approval from the organization's board of directors and/or membership. One non-profit food hub founder explained that she was interested in making the food hub program its own entity but couldn't convince her board members that it was the right next step. FoodEx's founder chose the for-profit model to manage the business independently and avoid having to answer to or follow the direction of a group of producers. He said the decision was made "not because we didn't want to listen to [or] work with them or disagreed with them, [but because] we just wanted to be able to do it and not always let the crowd rule."

Culture

The culture of a workplace is another consideration that factors into structure decisions. Smith said Cherry Capital Foods' for-profit, LLC structure gave him "the freedom to establish what [CCF's] core values were going to be—that everything was built around being honest, being fair, and being open to discussion." One cooperative interviewee said her hub's structure hub gave it a "more of a process oriented-work culture" that has positively affected the hub's relationships with its producers:

It's something that's a little indefinable but it is related to our governance, to being a cooperative. It's just a more humane way of doing business, and it just engenders trust with people and better cooperation overall.

Zuidema shared that CPW has gotten positive feedback about their nature; producers say that in CPW they have "finally [found a distributor] that put [the producers'] best

interests at heart." The "process-oriented culture" of cooperatives that Zuidema described at CPW can have a positive effect internally as well. OPMA's coordinator has found that all the time spent in meetings and working together has created strong bonds and camaraderie among the cooperative's members.

3. Affiliation

One interviewee from each type of hub noted the benefits of being affiliated with or connected to other organizations with the same structure. Red Tomato's founder said that being a non-profit "meant that [they] were communing with other organizations that were mission-driven" and it meant Red Tomato "could really become part of the NGO philanthropic community." He said Red Tomato has found it "really advantageous to be kind of in a trade association with other non-profits." Farmer Foodshare's founder said that being a non-profit might create a sense of trust or add a "we come in peace" attitude to POP Market's interactions with other organizations or individuals, but she did not believe any farmers chose to work with the hub for that reason.

The founders of The Wedge Natural Foods Coop wanted to be a part of the coop movement, so "they never really considered any other structure than a cooperative", CPW's director of business development said. Zuidema has found that one of the advantages of the cooperative structure is that it "ideologically it lines you up with similar businesses," including "producer cooperatives, retail cooperatives, [and] distribution coops." She said that that connection creates "more loyalty [and] more of an affinity for doing business with each other." Finally, Mariel Nunes, Farm Fresh Connection's director of marketing and communications, noted that the hub's for-profit business structure made buyers take FFC seriously and gave it credibility: "I

think that buyers are more likely to trust that they can get product on a regular basis and as readily as they need if they're working a business."

E. Management

To a large extent, food hub governance arrangements are set by their structure: non-profits are overseen by boards of directors, cooperatives are governed by their members (or a board elected by the membership), and for-profit businesses have owners (individuals, partners, and/or stockholders). Food hub founders have to make additional choices about how their organizations will make decisions and communicate that are not necessarily determined by the hub's structure. These decisions were made based on a combination of factors, including values and principles such as consensus, staff empowerment, transparency, and direct communication.

1. Principles

Consensus

Multiple food hubs in this research make decisions using a consensus model; some are cooperatives but others have incorporated a cooperative style of decision-making into the for-profit and non-profit structures. As The Farmer's Cow's managing member, Chesmer said he is "in charge of the day to day operations" and the group of LLC members meets at least monthly to work through "all major decisions" because they "don't do anything without agreeing." Red Tomato's founder and director described the hub's decision-making processes, which are a hybrid of cooperative and non-profit structures:

We're close to [and] really strive for consensus, [but] we hardly ever test for consensus or take a vote. And everybody knows I reserve the right to make a decision when I need to, but it's very unlikely I would make a decision if I felt the rest of the management team was strongly in opposition. So it's kind of de facto close to consensus at the management team level, and yet on the organizational matrix I have the authority to make a lot of decisions.

The cooperative food hub OPMA also requires its members to agree on decisions. The hub's sales coordinator said one of OPMA's strategies is to meet regularly and "try to anticipate as much as [they] can" so the members can "try to think of everything and solve it before it becomes a problem." Though this kind of operation takes "hundreds of hours of meetings" to get started and more to manage, Woods explained the benefits of the arrangement: Regular meetings "keep communications between farms open [and] prevent misunderstandings"—members can "recognize the natural competition between farms but not focus on or enhance that." According to Woods, spending time together in meetings and working together has helped the diverse group's members "come to care for and respect each other" and built up their camaraderie.

Decentralized decision-making and staff empowerment

Cherry Capital Foods' decision-making is very decentralized; its staff is divided into teams (e.g., purchasing, logistics, sales, and warehouse) that each has its own department leader. Smith said he firmly believes that a "business that needs to respond quickly" can have its "ideas and operations [...] developed much more efficiently and effectively on the ground where the work is being done than it can at the top of the organization." Cherry Capital Foods is committed to empowering staff at all levels, even in positions that often are not highly valued or given a lot of freedom and decision-making power. Smith said that though "drivers and warehouse people traditionally [are] afterthoughts, on the bottom rung of an organization" in food distribution, CCF has

tried to stress that it's the opposite—they're the part [of the hub] that many of our customers see more than anybody else, and they're the people that make our lives easier: A warehouse person that's looking out for your mistakes as a salesperson is invaluable.

According to Smith, CCF's decentralized decision-making structure helps "everyone [feel] valued," but it has required the hub to make changes to its hiring and training processes: Even though decision-making power has been spread out in the organization, "that doesn't always mean the people who've been put in the position of making that decision have been given the complete skillset yet." This has also required the hub to develop a culture that allows staff to make mistakes, learn from them, and keep going.

Transparency and non-hierarchy

Governance decisions within hubs are often related to specific values that founders, managers, and the hubs as organizations want to express. For example, Farmer Foodshare's founder said the organization tries to have "really conscious transparency" and Red Tomato's founder said the hub encourages "direct communication" and wants all staff members to be well informed about the details of the hub's operations. Rozyne explained that Red Tomato's regular staff meetings facilitate the "full exposure to everything going on" that they try to provide to everyone from senior staff to new employees and interns.

These interviewees also pointed out that their decision-making processes function somewhat differently from the hierarchy as it would be laid out on their org charts. POP's founder said Farmer Foodshare aims for a non-hierarchical culture in which "it's clear what everyone's supposed to be doing [and] everyone's responsible." Red Tomato's founder said the hub is a "relatively flat organization" that has not spent much—if any—time formalizing systems for communication or internal checks and balances. Rozyne said his goal is for Red Tomato to have direct communication among staff members that doesn't have to run through any hierarchy but also for everyone to

"have respect for the hierarchy that exists [...and to acknowledge that they] have structures and systems for a reason."

2. Personnel

Interviewees discussed the importance of having personnel (staff, board members, advisors) with certain skill sets and a variety of perspectives. They also highlighted some key staff positions and the ways in growth has brought about change in their personnel makeup and management systems.

Skills and Experience

The hubs in this research have boards and advisors with varied backgrounds. For example, Moore said that Local Food Hub's "board is made up of different community members around the region," including farmers, a lawyer, a financial adviser, and "other engaged community members who are advocates for local foods." FoodEx's founder said that the hub has an advisory board that meets with the management team quarterly to "give guidance and insight for the bigger picture" of how the hub fits into the larger local food movement "and advice on how to fundraise." Moore said Local Food Hub also invites members of the community to give input and feedback by serving on project-specific committees with staff and board members. Expertise and experience also play into decisions about hub membership. An interviewee from a cooperative food hub said the hub might add new farms if their demand grew; they would consider the products a farm had to offer as well as the skills and expertise the producer could bring to the group.

Though interviewees said it was important to have board members who were experienced in and passionate about sustainable food issues, one noted that their lack of food industry or food distribution experience sometimes made it "challenging for them to understand all the details of the business." For example, some members of Farmer Foodshare's board assumed that the POP Market food hub's aggregation work

could be a significant source of revenue for the larger non-profit, rather than a project that would need its own support and start-up funding.

The combination of skills, experience, and values was also a factor in staffing choices. Zuidema argued that CPW's growth and success was directly related to the prior food distribution work experience of its staff; she "cannot over-emphasize the need" for some staff to have "experience in trucking, warehousing, maintaining equipment, [and] fulfilling customer expectations in a distribution business." In addition to coordinating food hub logistics such as filling orders, making payments, and keeping a ledger, Farmer Foodshare's founder said it was crucial for the POP Market's manager to have the ability to communicate well with both producers and buyers, strong support for the hub's mission, and the skills to make "strategic business decisions." She pointed out that it can be hard for people in the food justice and farmer justice movements to have "hard conversations about not meeting quality" standards with farmers, but that skill was necessary for food hub management.

Key Positions

One type of staff position that multiple interviewees mentioned was sales. When CPW decided to grow beyond their initial market of other coop stores they "needed a person dedicated to going out and getting those kinds of accounts" with "restaurants and conventional grocery stores and other types of specialty stores," Zuidema said. ALBA's executive director shared that ALBA Organics recently hired a sales representative to take those responsibilities off of the plate of the General Manager—this will give the hub a person dedicated to pursuing and working with buyers and will allow their GM to spend more time on "general management responsibilities" instead of being the "head firefighter" who deals with buyer's issues and responds to crises. Farmer Foodshare's founder said when she stepped down

from running the organization, one of the likely next steps for the POP Market was hiring a sales person to coordinate all their sales work, rather than having interns and other staff do it piecemeal.

Interviewees also noted the significant time commitment that starting and managing a food hub requires. TSG's founder said that there are "lots of challenges and learning" in the beginning, "so the biggest thing is having someone 24-7 dedicated to make it work in the early phase." Farmer Foodshare's founder said she "based the structure of FF and [its' food hub] POP Market [on the idea of] a self-contained start-up inside the umbrella" of the non-profit, "so the POP manager is basically the CEO of a start-up." OPMA's current coordinator noted that, on reflection, "farming and being the [food hub] coordinator is kind of insane." She said the arrangement worked for her because she had a "very experienced crew on [her] farm that took on a lot more responsibility" while she did "the logistics and coordination" for the food hub. That experience led her to believe that "it would be a better situation for everyone if the coordinator was not one of the farmers" and has informed OPMA's search for their next coordinator.

Food Hub Growth and Personnel

Growth has led hubs to make a variety of changes, especially related to personnel. Interviewees from several hubs noted that growth in their organizations required them to hire additional employees, often with higher levels of training and professional experience. They also needed to train their existing staff and work to create a more professional work environment. Though CPW initially got pushback from the staff when they instituted systems to make their workplace more professional and structured, Zuidema said, "most people were really happy to have a

better functioning business [and to get] better wages." At Cherry Capital Foods, Smith found that growth changed their internal dynamics and communication systems:

The real challenge as you grow is maintaining that cultural awareness and having it engrained throughout your organization as the distance from the top to the bottom grows. With 10 people you can have a meeting and everyone can talk about it. With 20 people there's always a couple who can't make it, with 30 people you've got people who weren't there at the beginning and maybe don't get the reasoning behind and the importance of some of those things, and also organizationally you might not have the systems in place to deliver that information.

II. Decision-Making Patterns

Though this research draws on a small, non-random sample of hubs, I explored potentially meaningful patterns, i.e., clusters of hubs that made similar decisions, shared characteristics and/or made choices for similar reasons. In the section below I discuss some of the characteristics that were not associated with hub decisions and one potential relationship. I then provide an analysis of the relationships among the decisions themselves that point to the iterative nature of decision-making.

A. Food Hub Characteristics and Decision-Making

In this research, food hub region and age were not associated with any of the factors involved in their decisions about structure, governance, activities, or products. For example, hubs from all regions included in this research were created for reasons related to the needs of producers in their communities. Though I did intentionally choose a set of hubs with a variety of structures, this research may point to a relationship between the background of food hub founders and their structure decisions. The hubs in this research founded by one or a few non-producer individuals¹⁹ are divided evenly between for-profit and non-profit structures. All five of

¹⁹As opposed to hubs founded by individuals or groups, three of the hubs in this research (CPW, AO, POP) were created by pre-existing organizations and they function within the parent organizations' structure. Though some of them have considered becoming independent entities, potentially with a different structure, for the time being they operate within the larger

the hubs in this research created by producers (individuals or groups) are structured as cooperatives or for-profit businesses. This may be because producers were accustomed to operating for-profit farms and interacting with the for-profit and cooperative enterprises that are common in the agricultural and food distribution sectors.

B. Iterative Decision-Making

As the first section of this chapter makes clear, food hub founders have taken many factors into consideration when deciding how to structure and organize their hubs and when choosing the particular work they would do. In addition to those factors, these interviews also highlight the direct effects most major food hub decisions on their later choices and the iterative nature of decision-making.

Activities Affect Structure

For some hubs in this research, the activities they chose to pursue (based on their constituents' needs, efficiency, and other factors) affected their choice of structure. Three of the four non-profit hubs said that their missions to work with particular constituents and/or to provide non-revenue-generating services (outreach, education, etc.) made it necessary for them to operate as non-profits. For example, Local Food Hub's co-founder said the hub is structured as a non-profit because much of its work "is of a charitable nature." In addition to aggregating and distributing products specifically for small producers, LFH does outreach to public schools and makes donations to hunger and food access organizations. Moore said, "that education and connection and interweaving of different roles in the community are kind of why we've seen being a non-profit as being important."

organizations. (For more on the experiences of hubs created by an organization, see **Appendix II**).

ALBA's executive director argued that non-profit status allows organizations with a social mission to "compete in the market" with other businesses that don't have the same mission and associated challenges or disadvantages. He said operating as a non-profit helps ALBA Organics make up for the "inherent disadvantage" of working with small farmers in need of training, a group that their competitors don't work with because of the high transaction costs. Red Tomato's founder pointed out that the hub's non-profit status allows the staff to spend time on educational activities and to participate in larger food system events and collaborations.

Structure Affects Activities

The other non-profit food hub founder in this research brought up the reverse relationship, that a hub's structure decision affects its choice of activities. Gifford felt that having a specific mission can limit non-profits when they are exploring new avenues or expanding their operations, saying that "being a non-profit has held POP market back" from its original vision because they couldn't scale up quickly enough to meet demand. She found that the non-profit structure requires organizations to "put brakes on yourself [by saying] 'I can only work with certain kinds of buyers, farmers, etc.'" Though other interviewees did not use this terminology to highlight this relationship, it is clear that the initial choice of structure affects later decisions of all types of food hubs, not just non-profits. Through their structure, cooperative and for-profit hubs have also established access to certain types of funding and a certain relationship to profit. This means that some factors, such as profitability or expertise, play a different role in their choices about taking on certain activities than they would in non-profit decision-making.

Products Affect Activities

Almost all of the hubs in this research provide some kind of education and training to their producers. That group includes all 5 of the hubs that mentioned

choosing their products based on buyer and consumer demand. Their decisions to offer certain items that their producers were not already growing may have required the hubs to provide product-specific training on best practices for growing, harvesting, and/or packaging. This is an instance in which a decision about one aspect of a hub's work, such as the products it provides, affects other aspects, such as the activities it pursues.

Structure and Decision-Making Factors

These interviews did not reveal an association between food hub structure and the factors they considered in their decision-making. For example, an interviewee from at least one hub of each structure mentioned values-based reasons in their choices about products. In addition, both for-profit and non-profit hubs in this research made decisions about their products related to their expertise and capacity to manage them—though their structures give the hubs different relationships to profit, and non-profits have mission-related commitments to consider, they all have to make strategic decisions about what products to work with based on their existing knowledge and abilities.

CHAPTER 5: CONCLUSIONS

I. Conclusions

In the following section I will compare my findings to the research described in **Chapter 3** and explain the contributions this work makes to food hub literature and our understanding of food hub decision-making and development.

A. Decision-Making Factors

In this research I examined the role of food hubs in alternative food systems development and the current landscape of food hub knowledge. I conducted interviews with twelve food hub founders and managers to add to our understanding of decision-making related to food hub creation, work, structure, and governance.

Creation and Work

My interviews confirmed that food hubs are created to address the needs of their constituents (producers, buyers, consumers, and communities) and to fill in gaps they identified in their food systems. Some were created with specific missions or values in mind, such as supporting sustainable growing practices. This confirms prior research conducted by Barham et al. (2012), Day-Farnsworth et al. (2009), Fischer et al. (2013), Hardy and Holz-Clause (2008), Horrell et al. (2009), Morley et al. (2008), and others. My research contributes to our knowledge of food hub decisions about their particular work: In decisions about their activities and products, food hub founders and managers took into consideration factors such as the hub's expertise, logistics, and profitability.

My research augments the existing literature by addressing the lack of a temporal dimension in our understanding of successful food hubs. Over time, these food hubs continued to make decisions based on their constituents' needs, their founding principles, and the lessons they learned from their experiences. Their

constituencies and missions varied, but their sustained responsiveness and commitment were constant across the sample.

Structure and Governance

The hubs' structure decisions were affected by funding access, relationship to profit, and priorities such as decision-making speed and owner control. Decisions about structure, like all choices, involve tradeoffs: Cooperative food hubs valued the "process-based culture" and other intangible aspects of the structure, as well as the benefits of being affiliated with other coops, over the potential disadvantages of the structure's slow decision-making speed. For-profit hubs prioritized the simplicity and nimbleness of their operations over the potential benefits of coop affiliations or access to grant- and donation-based funding. Non-profits valued their access to such funding, and their subsequent ability to experiment and pursue mission-related objectives without the pressure of generating a profit. They prioritized those benefits over potential disadvantages related to responsiveness, complexity, and mission-based limits. These factors align with those identified in previous food hub research as important characteristics and effects of the structure choice (Anselm 2013; Barham et al. 2012; Gray and Stevenson 2008; Harbage 2013; Lindsay and Slama 2012; Lerman 2012; Mount 2012; Morley et al. 2008; Schmidt et al. 2011).

My research adds new perspectives to the on-going debate about the role of non-profit organizations in alternative food systems development. In this research, hubs of all structures are working toward similar AFS goals such as sustainability and food justice. However, most of the non-profit hubs in this research described their choice of structure as a necessity for performing that work, even in light of some concerns about the long-term sustainability of the non-profit model and possibility that non-profit food hubs may negatively affect markets, prices, and producer

expectations. Prior research has suggested that non-profit organizations in AFS development should focus on activities such as education, outreach, and facilitating supply chain relationships rather than distribution (Lerman 2012; Diamond and Barham 2011; Zajfen 2008; Cheng and Seely 2011). This research illustrates the core issue of these debates: how to leverage the non-profit structure to build capacity and address AFS priorities (in ways that for-profit businesses may not be able to) without letting non-profits create “false markets” that are insulated from the for-profit system.

B. Food Hub Decision-Making Patterns

Food Hub Characteristics and Decisions

This project explored potential relationships between food hub characteristics and their decision-making, and among the decisions themselves. Though prior studies have linked food hub age with financial success (Barham et al. 2012; Fischer et al. 2013), in this research, characteristics such as age and region were not associated with any decisions or any of the factors taken into consideration. These findings align with the conclusion Mount drew from his study of value chains in Ontario: food hub “development trajectories are not pre-determined by group characteristics” (2012, 165). The one exception in my research, that the background of the hub founder(s) may have influenced food hub structure, isn’t directly comparable to Mount’s work. In this study, producer-founders chose to structure their hubs as cooperatives and for-profits, not non-profit organizations. Mount’s research only included producer-created “groups that were organized informally, as a cooperative, or incorporated” (2012, 9-10). It is unclear whether there were any non-profit-led local beef chains in the region, and if so, whether Mount intentionally or unintentionally excluded them from his sample.

Iterative Decision-Making

My findings reveal that food hub development involves the process of cumulative causation, in which initial choices and commitments directly affect the options and priorities at later decision points. In this respect, my findings also align with Mount's conclusions. The sub-set of responses from my non-profit interviewees illustrates the ways in which foundational decisions are reified through the hub development process: As a hypothetical example, an initial commitment to working with a certain disadvantaged constituent group leads hub founders to prioritize access to grant funding and therefore incorporate as a non-profit. The process of establishing that organization involves articulating and codifying the mission. At later points of growth and change, the mission will have placed constraints on the types of activities the hub can pursue and/or the types of constituents it can serve. Those limits restrict the hub's options for generating additional revenue, which compounds its need for grant- and donation-based funding to cover expenses. The whole process then reinforces the choice of the non-profit structure and frames it as the only option for pursuing the hub's mission.

My work also adds nuance to our understanding of the cumulative causation process. Though I did find that initial decisions affect later options and priorities, in my research, those early decisions did not necessarily remove any factors from consideration. For example, interviewees from hubs of all structures mentioned values-based reasons (e.g., a commitment to sustainable production practices) in their decisions about what products to work with. In addition, both non-profit and for-profit hubs made decisions about their products based on their staff expertise and capacity.

Development Paths

The hubs in my research did not follow a particular development trajectory. This is a point of divergence between my research and Mount 2012. He compared his

groups' development to two figurative trajectories, conventionalized and alternative, and found that groups tended to follow one path or another. In contrast, I found collaborative and/or consensus-based decision-making mechanisms in cooperative, for-profit, and non-profit hubs. My sample also included a for-profit hub that explicitly supports decentralized decision-making, which is the opposite of the expected form of control in Mount's conventional trajectory. These findings also complicate our understanding of the relationship between food hub structure and governance: while Matson et al. stated that food hub "structure determines how the organization operates," my research suggests that that relationship is not so definitive (2013, 12).

As my research builds on Mount's work, and our findings have points of both alignment and divergence, it's important to consider the differences in our projects, in particular the types of groups we studied and the scope of our investigations. Mount's sample included variation related to scale (some of his groups sold directly to consumers), but was limited to one region (Ontario), one sector (beef) and groups that were founded by producers. My sample was made up of hubs that sell only to institutions, with variation in terms of region (within the United States), sectors/products, and founder background. In addition, as noted above, both of our samples included cooperatives and for-profits, but mine also included non-profit organizations and Mount's included at least one informally organized group. Our findings related to structure may not be completely comparable given that different types of organizations may function in differently Canadian and American economic and political systems. Some of these differences in the parameters of our work may have contributed to the points at which our findings diverged.

II. Caveats and Recommendations

As with all research, there are some caveats attached to the conclusions of this

project. In the following section I outline some of the limitations of this thesis and the ways in which future projects could address them and then discuss several topics and methods that should be prioritized in future food hub research. I conclude with additional recommendations for future food hub founders and their supporters, including such as funders, service-providers, and policy-makers.

A. Recommendations for Research

Sample Size and Makeup

Many of the limitations of this study are related to its sample size and makeup; those factors inform several of my recommendations for future food hub research. This research was conducted with a relatively small number of food hubs and not all interviewees were directly or currently involved in all of the decisions in question. In addition, these interviews reflect one person's viewpoint on decisions and processes that many people were involved in. Food hub researchers should explore these decision points with a larger group of food hubs and could interview other representatives for each hub, such as staff members, funders, producers, buyers, and/or consumers, in addition to founders. To truly understand how a food hub is governed, it is crucial to have multiple perspectives on topics like decision-making, control, and workplace culture.

Future research should also explore these questions with different samples of hubs, either honing in on a particular characteristic or reaching broadly to achieve representative variation. For example, whereas my sample includes some hubs that work with a single product type and some hubs that work with multiple types, future projects could focus on particular products and subsets of the food distribution industry. My sample did not include multiple hubs from each region of the United States. Additional insights could be gained from research conducted with wider

geographic variation or a targeted focus on a particular region. Similarly, none of the hubs in my research offered processing services. Because processing generally requires more infrastructure than other food hub services, it would be beneficial to examine processor hubs and compare them to others to understand the role of infrastructure investments in food hub development.

As this research focused on hubs that sell only to institutions, future inquiries could also include food hubs that sell to individual consumers and/or both, to investigate whether the type of customer affects the hub's decision-making factors and processes. In addition, multiple hubs in this study were going through major transitions at the time of my interviews. Future research could follow up with those hubs to determine the results of their transitions and whether that changed their responses on these topics. Targeted research could also be done to understand commonalities among hubs that have undergone major transitions in ownership, structure, governance, etc. in their development. Though the logistics of identifying and accessing interviewees would be difficult, there is much to be learned from hubs that have closed. In particular, understanding the combination of external factors and internal decisions that led to the end of their operations would be an excellent basis for providing guidance to new food hubs.

The relationships among for-profit and non-profit hubs and their roles in food systems development are key topics highlighted by this research that deserve further exploration. One interesting observation is that, though cooperatives are similar to for-profits in their reliance on revenues and their goal of increasing financial returns to their members, they are often left out of these discussions. Researchers could examine the ways in which cooperatives might be able to address the disadvantages of for-profit and/or non-profit structures. Similarly they could explore the opportunities and

challenges that newer “hybrid” structures such as Benefit Corporations and L3Cs could present for food hubs.

Future research on structure should investigate several topics related to non-profit organizations in particular. First is exploring the long-term sustainability of non-profits—is there a particular timeframe or lifespan they should work within? Non-profit interviewees in this research were aware that their organizations establish their business models less quickly than for-profit hubs. Researchers should explore methods for helping non-profit hubs learn those profit-based lessons more efficiently. Finally, there are open questions about the experience of non-profit aggregators in other sectors that manage the physical transfer of goods: Do they exist? If so, in what sector or fields? And what lessons can be learned from them? If not, what does that tell us about the uniqueness of the food system and its participants?

Research Methods

Because semi-structured interviews are designed to maximize flexibility over consistency, interviewees did not respond to the exact same set of questions. Consequently, the fact that some interviewees did not offer a particular response does not mean that they did not share that opinion or have that experience. Follow-up interviews could be conducted to flesh out interviewee responses to topics that arose in some of the original responses. Alternatively, a more formally structured survey could be conducted with more consistent set of questions based on the responses given in these interviews. Also, interviewees in this study responded to questions about factors that influenced their decision-making and the advantages and disadvantages of their decisions. Future research could seek to clarify more specifically what they learned and experienced as a result of their decisions and how those results compared with their expectations.

My analysis of existing food hub research and my own findings has highlighted the major gaps in our knowledge about how food hubs have developed over time. We know what successful food hubs look like in their current state, but we don't have a sense of their characteristics at earlier stages of development. This research, combined with the efforts of USDA and Michigan State researchers, offers an opportunity to establish longitudinal research that asks consistent questions related to food hub size, viability, decision-making, and other characteristics. For example, future iterations of this type of project could reveal that the successful food hubs of the time didn't become financially viable until a certain year of operation, or that they all made decisions about their infrastructure investments for similar reasons. This kind of information would be a major asset in guiding future food hub development.

Finally, food hubs are one element of the complicated alternative food systems landscape. Researchers should continue working to identify circumstances in which food hubs are the appropriate response to food system challenges. Similar to the longitudinal studies of food hubs suggested above, they could work to investigate the economic, political, agricultural, and social contexts in which food hubs have succeeded. These efforts could also explore the most effective ways for food hubs to interact and collaborate with other AFS groups and activities, such as farmer training programs, the educational components of farm-to-school programs, and local farmers' markets. Ideally this research would also provide information on the effects of food hub work on achieving their particular missions and goals, and the overall development of their local food systems

Presentation and Audience

In addition to the research directions identified above, researchers should focus on topics that are important and relevant to new and future food hub founders.

They should also ensure that their results are reported in ways that are useful and accessible to that audience. For example, research framed around the type of constituents hubs serve, the reasons successful hubs have made particular decisions, and their priorities and values could provide more direct guidance to future food hubs than classifications based on the outcomes of those decisions (e.g., structure).

Potential food hub founders can look to hubs that started with similar priorities, values, and/or constituents to identify strategies that may also be effective for them.

B. Recommendations for Food Hub Founders

One of the key takeaways from this research is that successful food hub development involves a lot of planning. Future food hub founders should conduct a thorough business planning process that includes identifying their particular niche and business model, and weighing the factors discussed in this research and any others that apply to their circumstances. This process will inform the decisions they make related to their work and structure in the start-up stage and at points of growth and change in the hub's development. It will also help food hubs have a clear understanding of the ways in which they create value so they can focus on that work, and make decisions throughout their development to protect and enhance that value. In addition, this research has shown that well-established food hubs have found it useful to have staff and/or advisors with previous experience in food distribution. New food hub founders should prioritize that expertise in their hiring decisions and in creating a board of directors or other advisory group.

This research has highlighted the iterative nature of decision-making, especially related to the development of organizations, their governance, and their work. Food hub founders should keep in mind the long-term effects an initial choice may have on their options and priorities at future decision points. Similarly, food hub

founders should always consider long-term and short-term horizons. Some of the interviewees in this research pointed to circumstances in which the choice to take a short-term loss had been appropriate because it was likely to lead to a significant long-term payoff. They stressed the importance of being aware and open about when choices are made for such reasons. Additional recommendations for food hub founders and managers can be gleaned from the interviewee advice offered in

Appendix III: In short, learn from the experiences of established food hubs, but adapt their lessons to your particular region and situation; start small with pilot projects to test out business models and ideas, but also make sure to dive in and do the work.

C. Recommendations for Food Hub Supporters

Food hub supporters include funders (individual investors and grant- and loan-making organizations), policy-makers (from federal to municipal levels), and service providers (educators, trainers, etc.). Many of my recommendations for this group dovetail with the recommendations for researchers and founders above. Supporters can encourage food hub success by assisting in the business planning processes described above; funders could require completion before providing financial support to a new hub. They can also be pro-active in conducting broader food systems assessments in their communities, so that they have identified specific needs and potential collaborators before a new food hub project is even proposed. That level of clarity around a community's needs will help new food hubs quickly identify their core constituents and their added value, both of which are crucial to successful food hub development. Conducting these assessments in advance can also prevent AFS entrepreneurs and activists from sinking time, energy, and other resources into launching a food hub that wouldn't actually meet a community's needs or would duplicate other efforts.

Food hub supporters should provide education and training to potential food hub founders about structure and business development. Many interviewees mentioned the simplicity of the for-profit *incorporation process* as a major advantage to that structure. Food hub supporters could provide incorporation-related guidance and support to new food hubs, thereby simplifying the process for all structures. This would help new hub founders consider each structure on its own merits, as opposed to the time and hassle involved in setting it up. Also on the topic of structure, these interviews revealed some tensions around non-profit hubs operating in the same markets as for-profit and cooperative hubs. To the extent that this issue is a problem in a particular community, food hub supporters could provide opportunities for founders and managers of all types of food hubs to meet on neutral ground and discuss the best ways to work together.

As part of their educational programming, food hub supporters can facilitate connections among the founders and managers of new and successful hubs. They can also document and disseminate best practices and other guidance. Some prior research suggests that mid-sized/mid-scaled AFS groups, such as food hubs, are most in need of outside perspectives ("bridging capital") rather than input and advice within their existing networks ("bonding capital") (Mount 2012, 101). Food hub supporters can help new hubs develop connections with other networks that can offer innovative strategies and solutions.

There are also opportunities for food hub supporters to pursue broader AFS educational goals. One hub in this research suffered because it transported mostly "heavy and cheap" potatoes and carrots. The founder said that he had a hard time getting the hub's buyers (and their customers) to look beyond the "local pastoral vegetable story" to the proteins and value-added products that are more profitable for

food hubs to work with. Food hub supporters could address this issue in their communities by emphasizing the importance, and potential availability of, all kinds of local, sustainable foods, and coordinating taste testings and other events to pique consumer interest.

Alternative food systems movements face many challenges in their efforts to offer a substantial alternative to the conventional system. Food hubs address the issues of scale and missing infrastructure that prevent small and mid-size producers from developing relationships with institutional buyers and reaching the additional consumers they serve. Though there is no universal step-by-step set of instructions for food hub development, this thesis has provided initial insight into the reasons behind the work and structure decisions of established food hubs. These factors and the iterative decision-making processes explored in this analysis offer some guidance to food hub founders and supporters, and provide several directions for future food hub research.

APPENDICES

I. Interview Questions

This research involved semi-structured interviews that included questions and topics specific to each hub. The questions were drawn from the list below. For all of the main topics, I asked interviewees about factors considered in the deliberation, disagreements about choices, and the advantages and disadvantages they've experienced.

Structure

- What led you to choose your hub's structure above other options?
- *[For-profit hubs]* What led you to choose *[LLC, LC3, C-corp, etc.]* structure over the other options?

Creation, Products, Activities

- What drove you to create this hub?
- At what point in your development did you identify the products you would work with? What were the factors that drove that choice?
- At what point in your development did you determine what functions your hub would fulfill in the value/supply chain? What were the factors that drove that choice?

Hub Governance

- Who are the main decision-makers about the hub's goals, operations, and finances, etc.?
- What 'checks and balances' are in place? (e.g. between the staff and the board)

Reflections

- What were the major factors that caused you to make the choices we've discussed?
 - In retrospect, were there other factors that should have been prioritized?
 - Would you recommend food hub founders make the same decision(s) today?
- How has your organization grown and changed over time?
 - What were the driving factors at growth points?
 - Have you made any significant changes to the initial decisions you made when creating the hub? If so, what were they and why did you make them?
- Do you have any advice for individuals or groups who are thinking of starting a food hub?

II. Alternative food hub structures

Some of the hubs in this research are currently part of, or their interviewees referred to, alternative or unconventional food hub structures. In this appendix I provide a short synthesis of interviewee responses about food hubs operating within larger organizations and the Benefit Corporation and Low-Profit Limited Liability Company structures.

Food Hubs within Organizations

Three²⁰ of the food hubs studied in this research are currently structured as departments or programs of a larger entity: Farmer Foodshare's POP Market, ALBA's ALBA Organics, and The Wedge Coop's Co-op Partners Warehouse. The dynamics, advantages, and challenges of these arrangements are discussed in the following section.

Advantages

One advantage of creating a food hub within an existing organization is having the initial questions of structure and governance already answered. For example, Zuidema said that CPW didn't really have to make "decisions about what type of governance to set up" because the Wedge's structure was established and CPW operates as "a department of the Wedge." Another benefit is that the larger organization can be source of funding and support for the food hub. In its first few years, CPW's expenses were higher than its revenues, but, as a successful retail coop, The Wedge could cover CPW's shortfall. Zuidema said the Wedge was "our bedrock during those early years when we weren't making money consistently. We are [profitable] now but their capital helped us through the rough patch, so it was good to have them in the wings, supporting us."

Food hubs within other organizations can be structured to have a significant amount of autonomy from the rest of the entity. For example, CPW's staff have to work within a budget that is set by the Wedge management and the coop membership but they have the ability to offer input about their needs, and can make their own decisions about who to work with and what products to buy, as long as they fit within the broader CPW mission and the "character of the business," Zuidema said. She continued: "Overall I think the system [works]. It seems like there would be a lot of room for making mistakes about the types of decisions [we can make at the CPW level] but really it hasn't happened very much—I think we're pretty in sync with each other."

Having additional oversight from the top levels of the organization can help keep a food hub focused on meeting its AFS goals, in addition to becoming a viable, sustainable business. ALBA's director said he and the board have discussed spinning off ALBA Organics to be its own aggregation and marketing service but currently "the

²⁰Farm Fresh Connection first operated as a subsidiary of a non-profit organization and is now independently incorporated as an LLC. Unfortunately that experience is not reflected in this research because FFC's founder was unavailable for an interview.

advantage of keeping it under [ALBA's] umbrella is we can find grant funding for needed investments and can watch very closely in terms of how it operates. [We can] be sure that it's primarily for farmers, getting them affordable access to market."

Challenges

These hubs have faced challenges related to operating within larger organizations. Differentiating the food hub from its parent organization in terms of identity, decision-making, and systems is an important process. Even though CPW's high-level decisions about structure and governance were pre-determined by being a department of The Wedge, CPW is in a different location (the hub's warehouse is in St. Paul and the Wedge retail store is in Minneapolis) and has a different staff and daily processes. This meant the food hub had to create its own systems for managing its work. In addition, CPW has sometimes struggled with unclear boundaries about their decision-making power: Zuidema said, "the ambiguity sometimes is difficult" because "we don't always know exactly what decisions we can make on our own and what ones" need to be brought to management or the full coop board. She cautioned that if new hubs are going to create a similar situation, they "just have to be clear about what decisions [they] can make at the warehouse level and what decisions [they] can't."

This type of governance arrangement requires the staff and board members to have the same understanding of the food hub's mission and goals. Farmer Foodshare's POP Market had to make staffing changes because the first person in the POP Manager position thought of it as a program of Farmer Foodshare, whereas FF's founder said she thought of the POP Market as "a self-contained start-up inside the umbrella [of FF]", with the "manager" playing the role of CEO. Running the POP market as a start-up within a non-profit also means that the board of directors has control over the direction of the food hub. At one point, Farmer Foodshare's founder broached the subject of making POP Market its own entity but the non-profit's board did not support that transition.

In its early stages, The Wedge and CPW also discussed transitioning the food hub operations to be an independent entity. However they were not able to get the support of the area's other retail cooperatives that ideally would have taken on the leadership and governance that The Wedge had provide. ALBA has started having that conversation about ALBA Organics but no decisions have been made and no details have been discussed as to the independent entity's structure or governance. ALBA's Director said that in recent years ALBA Organics has had significant growth and ALBA wants to match that growth with "a facility with proper systems and proper staffing" so that it can "operate like a business." At that point, ALBA's board and management will "strongly consider" making ALBA Organics an independent entity.

Benefit Corporations and Low-Profit Limited Liability Companies

None of the hubs in this research are structured as a Benefit Corporation (B-Corp) or a Low-Profit Limited Liability Company (L3C), mostly because those forms were not available when hubs in my target age group were created. Interviewees from

Red Tomato, Cherry Capital Foods, and FoodEx said their hubs might have chosen such a structure if it had been an option at the time. Red Tomato's founder said he chose the non-profit structure because at the time "the U.S. didn't really have a comfortable middle ground [or a] third section and the tax statuses to support that."

FoodEx's founder explained that the primary difference between B-Corps and other for-profit entities is that the B-Corp structure "creates the legal ability to prevent a state government, tax agency, [or] stockholders from coming after you for making decisions for reasons other than profit." The reasons can be related to social, environmental, or other goals and missions but they must be spelled out in the by-laws.²¹ The availability of the B-Corp structure in the U.S. varies by state. However, there are options for food hubs in states without it, such as incorporating as an LLC or other corporation and including language in the bylaws related to the mission and decision-making rationales of the hub. In that case, Kemp said, "everyone has to read the fine print and agree in writing that the company can [and] will make decisions for reasons of public benefit, not just profit."

III. Development Strategies and Advice

The hubs in this research became successful by making decisions and growing through a trial-and-error process. Zuidema said that outsiders often want to know how Co-op Partners Warehouse achieved its success and pointed out that CPW "went through those same dog years that every food hub goes through, [in which] our expenses were higher than what we were bringing in." As noted in Appendix II, one unique factor for CPW was that, as a department of a larger organization, they had The Wedge "to fall back on" during those early years. Red Tomato's founder started to question why most food hubs go the route of investing in infrastructure and acquiring assets but stopped himself and asked, "Who am I to talk?! That's what we did when we were starting out; we did that for four seasons [before we] grew out of it" and changed their approach. As the findings of this research make clear, many of the hubs' initial decisions about products and activities changed as the hubs grew and developed. The following section provides a synthesis of strategies that interviewees thought were key to successful food hub development and the lessons and advice they offered to new and future food hubs.

A. Understand the Community and Its Needs

Interviewees stressed the importance of understanding the existing local food market, actors, and community before starting to develop a food hub. Local Food Hub's co-founder said having an inventory of the community "can impact the vision, mission, and needs of what an organization can provide." Moore suggested that food hubs should be open to collaboration and "figure out how to utilize what exists as opposed to recreating the wheel." For example, if a community already has a business

²¹ The Benefit Corp website (<http://benefitcorp.net>) lists examples of "public benefits" that B-Corps can use to make decisions in their Business FAQ section.

that could handle distribution, a food hub could recruit and train producers to work with them; alternatively if an existing organization does producer outreach, the food hub could provide distribution services. Similarly, The Shepherd's Grain's co-founder said "It's been one of our philosophies to reach out and find people with like needs and desires." Though the hub's managers have "no desire for vertical integration," Kupers said they do like "the idea of horizontal integration," in which they "let people who are good at something do that and enjoy the idea that sharing success is a lot more rewarding to both of us than individual success."

Openness to collaboration extended to businesses in their communities that weren't necessarily part of the AFS movement. Local Food Hub's co-founder said they recognize that large, conventional distributors "exist for a reason" and are "great at what they do;" LFH is "never going to outcompete them, so it doesn't make sense to try." Instead he said the food hub would "rather partner with them to some extent" to help its farmers and expand its markets.

B. Know Your Value

The process of identifying the players and needs in a community can be an integral step in identifying and protecting a food hub's particular value and opportunity for profit. Regardless of the hub's structure, treating and managing food hubs as businesses was noted as a key to success. Zuidema said she thought some of the national attention paid to Co-op Partners Warehouse is related to the fact that the hub is "financially successful—[as a] for-profit cooperative, we make money, and that's so novel in the food hub world. Most food hubs break even if they're lucky or are dependent on grants and donations to keep alive." In order to be successful, in terms of finances and mission goals, Farmer Foodshare's founder said that hubs need to treat food "like any kind of consumer product"—rather than assuming they know why people would buy a product, hub founders need to "go find out, to understand who you're selling to, why they'll buy it, and what they'll pay for it."

Drawing on his experience managing and closing FoodEx, and starting over, FoodEx's founder said his "number one piece of advice is to figure out where your margin is as an organization—do not lose sight of the fact that you need to figure out how to make money, and you need to deliver value to do that." He noted that "It's very easy in a socially-motivated business to lose sight of that and in the great pressure to get all the other things right, you'd better figure out early how are you making money." VQM's new chief of operations said his management of the hub will be different from its earlier years because they're "approaching it from the business aspect rather than the lifestyle." Though many farmers in his region appreciate farming for the lifestyle it provides, Alinovich said, "if a business doesn't make money there's no business. That might sound like a negative capitalist attitude, but if you can't pay your bills it doesn't matter how much you love what you're doing."

C. Timeframe and Context

The factors involved in food hub decision-making were considered in a combination of short-term and long-term frameworks. Two interviewees in particular noted the importance of keeping long-term horizons in mind when evaluating the short-term consequences of a decision. Smith agreed with other interviewees that food hubs need to operate like a business and not get lost in the social aspects of their work. However, he said that sometimes Cherry Capital Foods has done work at a short-term loss, such as working with school buyers or starting to work with larger buyers like Whole Foods, because of the “community goodwill” and the opportunity for “long-term growth potential,” respectively. He said those exceptions to the rule only work when a hub is clear that it’s making such a decision, understands why, and isn’t “shy about sharing that” reasoning with others. Local Food Hub’s co-founder described the approach as not being “risk averse [but knowing] what the risks are when you’re buying a truck of food from a grower” because “decisions [are] made on a day-to-day basis that impact daily, weekly, monthly, yearly, to 5-year plans” and “being cognizant of that” is important.

D. Learn and Adapt

New food hub founders can and should learn from the experiences of the wide variety of hubs that are already doing this work. Smith noted that the food hub work of the Wallace Center, National Good Food Network, and other organizations has created “an unbelievable amount of openness and willingness to share experiences [and] mistakes. Smith said “it’s invaluable” to “take advantage of this growing network of hubs and partners” and that hubs should “learn from [others] and be willing to adapt to your circumstances.”

On the topic of adapting lessons, Smith also brought up a point he’d heard at a recent national food hub conference: “If you’ve seen one food hub, you’ve seen one food hub.” This was echoed by The Shepherd’s Grain’s co-founder, who said, “it’d be great if I could give you step by step [instructions for creating new hubs] but there’s so much difference in regionality in terms of the culture around production, distribution, and the marketplace.” He said TSG has found that “it’s just not a cookie cutter”—as the hub has started working to move into other regions they have “recognized [...] that we need to go and sit and learn about that region’s culture agriculturally and economically and find ways that our program fits into that.” In a different community, Kupers said, “you can’t just take your [model] and lay it on top of an existing system and expect all parties to react the same way.” Local Food Hub’s co-founder also noted that, “just like working with LFH won’t work for every farm, [...] each community is very different and not every model works in every community.”

E. Start Small

In discussing their food hubs’ development and the iterative process of determining the appropriate work for their food hubs to do, interviewees noted the benefits of starting small. After receiving a donation of refrigerated space and other

materials, Moore said Local Food Hub's founders "started small and figured out what [they] needed and built out from there." Red Tomato's founder believes that running pilot projects and experimenting is crucial. Rozyne said, "we did a lot of experimentation—we failed at a lot of things and walked away from them and we succeeded at a lot of others and built them up." His experience is that "that's a much cheaper and faster and more accurate way of narrowing in on what works" than conducting feasibility studies or doing significant market research projects. Smith said the he and the other CCF founders "probably figured out [the food hub's activities] by accident," through trial and error.

The Farmer's Cow's managing member advised food hubs to "start off small and build." He argued that "business has to swell from within" because TFC's members have found that doing their work well "leads to other customers and other opportunities." The Shepherd's Grain's co-founder also pointed out that market demand and the need to develop additional markets for the hub's producers "go hand in hand" and build on each other: increased "production provides opportunities to market more and marketing provides us opportunities to seed more production."

F. Do the Work

Similar to interviewee remarks about the value of starting small, others discussed the importance of *doing* the work, rather than researching or talking about it. One reason Red Tomato has focused on "small-scale pilots and prototypes to try things out," Rozyne said, is that the feedback from academic research can be "limited and inaccurate." His experience has shown him that "there's so much about a new business that you can't figure out on paper." In addition, though the popularity of food hubs and AFS development has increased in recent years, one interviewee stressed the importance of staying grounded in the actual work. At Farm Fresh Connection, Nunes said, "we're all very action oriented—we don't really theorize or even talk about what we're so much as we just do it, which I think is really important because this work can be kind of glamorized." She pointed out that the mission aspect of their work is good, "at the end of the day we're a food distributor [...] so we have people driving trucks all over the place and we all lift 50 pound bags over and over." Nunes thinks part of Farm Fresh Connection's success comes from the fact that "everybody is working hard [and] we're not really in the head as much as we're in the body." Local Food Hub's co-founder also noted the importance of doing the necessary work to get the food hub up and running: "to some degree there was some pushback and hesitancy until we became a real thing—you can talk about it and that's great but until your check clears, growers aren't likely to buy in."

REFERENCES

- AgMRC (Agricultural Marketing Resource Center). 2013. "Food Consumption Trends." Ames, Iowa: Iowa State University. Last updated July 2012. Accessed March 2. http://www.agmrc.org/markets_industries/food/food-consumption-trends/
- Ahearn, Mary, Jet Yee, and Wallace Huffman. 2002. "The Effect of Contracting and Consolidation on Farm Productivity." Paper prepared for University of Maryland Workshop on Economics of Contracting in Agriculture. Annapolis, MD.
- Anselm, Marie E. 2013. *Exploring The Rationale For And Role Of Public Financing For Food Hubs*. Master's Thesis, Oregon State University.
- APA (American Planning Association). 2007. *Policy Guide on Community and Regional Food Planning*. American Planning Association.
- Barham, Jim, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. 2012. *Regional Food Hub Resource Guide*. Washington, D.C.: USDA AMS
- Bell, Judith, and Marion Standish. 2009. "Building Healthy Communities Through Equitable Food Access." *Community Development Investment Review* 5 (3):75-87. San Francisco, CA: Federal Reserve Bank of San Francisco.
- Benbrook, Charles M. 2012. "Impacts of genetically engineered crops on pesticide use in the U.S. -- the first sixteen years." *Environmental Sciences Europe* 24:24.
- Berry, Wendell. 1977. *The Unsettling of America: Culture and Agriculture*. San Francisco: Sierra Club Books.
- Beus, Curtis E., and Riley E. Dunlap. 1990. "Conventional versus Alternative Agriculture: The Paradigmatic Roots of the Debate." *Rural Sociology* 55 (4):590-616.
- Binkley, James K., James Eales, and Mark Jekanowski. 2000. "The Relation between Dietary Change and Rising U.S. Obesity." *International Journal of Obesity* 24 (8):1032.
- Block, Daniel R., Michael Thompson, Jill Euken, Toni Liquori, Frank Fear, Sherill Baldwin. 2008. "Engagement for transformation: Value webs for local food system development." *Agriculture and Human Values* 25 (3):379-388.
- Bloom, J. Dara, and C. Clare Hinrichs. 2010. "Moving local food through conventional food system infrastructure: Value chain framework comparisons and insights." *Renewable Agriculture and Food Systems* 26 (1):13-23.
- Booth, Ashley Rachel Masland. 2012. *How Good Is the Good Food Market: An Exploration of Community Food Security*. Master's Thesis, University of Toronto. Toronto, Canada: Ontario Institute for the Studies of Education University of Toronto.
- Born, Branden, and Mark Purcell. 2006. "Avoiding the Local Trap: Scale and Food Systems in Planning Research." *Journal of Planning Education and Research* 26:195-207.
- Boule, Danielle, George Hubert, Anna Jensen, Alannah Kull, Julia Van Soden Kim, Courtney Marshall, Kelsey Meagher, and Thea Rittenhouse. 2011. *Context Matters: Visioning a Food Hub in Yolo and Solano Counties*. Davis, CA: University of California, Davis.
- CAFF (Community Alliance with Family Farmers). 2011. *Establishing an Aggregation and Marketing Center for California's North Coast: A USDA Rural Development Feasibility Study*. Davis, CA: CAFF.
- CDC (Centers for Disease Control and Prevention). 2013a. "CDC Health Disparities and Inequalities Report." *Morbidity and Mortality Weekly Report*, 62 (Supplement No. 3):1-187. Atlanta, Georgia: CDC.

- CDC (Centers for Disease Control and Prevention). 2013b. "The History of State Obesity Prevalence." *Adult Obesity Facts*. Atlanta, Georgia: CDC. Accessed March 2. <http://www.cdc.gov/obesity/data/adult.html#History>
- Cech, Sharon. 2010. *California network of regional food hubs: A vision statement and strategic implementation plan*. Los Angeles, CA: Urban and Environmental Policy Institute, Occidental College.
- Chef's Collaborative. 2008. *Chef's Collaborative Regional Food Infrastructure Project*. Boston, MA: Chef's Collaborative.
- Cheng, Melanie, and Kate Seely. 2011. *Building Regional Produce Supply Chains: Helping Farms Access and Sell to Multiple Channels, Helping Large-Volume Buyers Access Regional Foods*. San Francisco, CA: FarmsReach.
- CIW (Coalition of Immokalee Workers). 2013. "Campaign for Fair Food." Accessed March 3, <http://www.ciw-online.org/about.html#cff>
- Clancy, Kate, and Kathy Ruhf. 2010. "Is local enough? Some arguments for regional food systems." *Choices* 25 (1).
- Clark, Jill K., Shoshana Inwood, and Jeff S. Sharp. 2011. *Scaling up Connections between Regional Ohio Specialty Crop Producers and Local Markets: Distribution as the Missing Link*. Columbus, OH: The Ohio State University.
- Cochrane, Willard W. 1958. *Farm Prices: Myth and Reality*. Minneapolis, MN: University of Minnesota Press.
- Cohen, Nevin, and Dennis Derryck. 2011. "Corbin Hill Road Farm Share: A Hybrid Food Value Chain in Practice." *Journal of Agriculture, Food Systems, and Community Development* 1 (4).
- Cohen, Larry, Sherin Larijani, Manal Aboelata, and Leslie Mikkelsen. 2004. *Cultivating Common Ground: Linking Health And Sustainable Agriculture*. Oakland, CA: Prevention Institute.
- Conner, David S., Victoria Campbell-Arvai, and Michael W. Hamm. 2008. "Value in the values: pasture-raised livestock products offer opportunities for reconnecting producers and consumers." *Renewable Agriculture and Food Systems* 23 (1):62-69.
- D'Souza, Gerard, and John Ikerd. 1996. "Small Farms and Sustainable Development: Is Small More Sustainable?" *Journal of Agricultural and Applied Economics* 28 (1):73-83.
- Day-Farnsworth, Lindsey, Brent McCown, Michelle Miller, Anne Pfeiffer. 2009. *Scaling Up: Meeting the Demand for Local Food*. Madison, WI: UW-Extension Ag Innovation Center and UW-Madison Center for Integrated Agricultural Systems.
- Day-Farnsworth, Lindsey and Alfonso Morales. 2011. "Satiating the demand: Planning for alternative models of regional food distribution." *Journal of Agriculture, Food Systems, and Community Development* 2(1):227-247.
- DeLind, Laura B. 2000. "Transforming organic agriculture into industrial organic products: Reconsidering national organic standards." *Human Organization* 52 (2):198-208.
- Diamond, Adam and James Barham. 2011. "Money and Mission: Moving Food with Value and Values." *Journal of Agriculture, Food Systems, and Community Development* 1(4).
- . 2012. *Moving Food Along the Value Chain: Innovations in Regional Food Distribution*. Washington, D.C.: USDA AMS.
- Dimitri, Carolyn, Anne Effland, and Neilson Conklin. 2005. *The 20th Century Transformation of U.S. Agriculture and Farm Policy (EIB-3)*. Washington, D.C: USDA ERS.

- Duffy, Mike. 2008. "Appendix: The changing status of farms and ranches of the middle." In *Food And The Midlevel Farm: Renewing An Agriculture Of The Middle*, edited by Thomas A. Lyson, G.W. Stevenson, and Rick Welsh, 257-283. Cambridge, MA: The MIT Press.
- Duram, Leslie A. 2005. *Good Growing Why Organic Farming Works (Our Sustainable Future)*. New York: Bison Books.
- Feeenstra, Gail W. 1997. "Local Food Systems and Sustainable Communities." *American Journal of Alternative Agriculture* 12 (1):28-36.
- Feeenstra, Gail, Patricia Allen, Shermain Hardesty, Jeri Ohmart, and Jan Perez. 2011. "Using a Supply Chain Analysis to Assess the Sustainability of Farm to Institution Programs." *Journal of Agriculture, Food Systems, and Community Development* 1 (4).
- Feeenstra, Gail, Tracy Lerman, and David Visher. 2012. *Food Hubs and Values Based Aggregation and Distribution: A Toolkit for California Farmers and Ranchers*. Davis, CA: University of California-Davis.
- Fernandez, Margarita, Katherine Goodall, Meryl Olson and V. Ernesto Méndez. 2013. "Agroecology and Alternative Agri-Food Movements in the United States: Toward a Sustainable Agri-Food System." *Agroecology and Sustainable Food Systems* 37 (1):115-12.
- FFRI (Farm Fresh Rhode Island). 2013. "SNAP / EBT and Credit Cards at RI Farmers Markets." Accessed March 3, <http://www.farmfresh.org/markets/freshbucks.php>
- Fischer, Micaela, Michael Hamm, Rich Pirog, Dr. John Fisk, Jeff Farbman, and Stacia Kiraly. 2013. *Findings of the 2013 National Food Hub Survey*. Michigan State University Center for Regional Food Systems & The Wallace Center at Winrock International.
- Gaber, John and Sharon Gaber. 2007. *Qualitative analysis for planning & policy: Beyond the numbers*. Chicago: APA Planners Press.
- GAO (Government Accountability Office). 2009. *Retail Food Prices Grew Faster Than the Prices Farmers Received for Agricultural Commodities, but Economic Research Has Not Established That Concentration Has Affected These Trends (GAO-09-746R)*. Washington, D.C.: GAO.
- Gaskin, Julia W., Kate Munden-Dixon, Carrie Furman, and Marc Beechuck. 2013. *Is There Farmer Interest in Food Hubs in Georgia? A Needs Assessment Survey*. Athens, GA: University of Georgia and the Georgia Sustainable Agriculture Consortium.
- Goldschmidt Walter. 1978. *As You Sow: Three Studies in the Social Consequences of Agribusiness*. Montclair, NJ: Allanheld, Osmun and Company.
- Gottlieb, Robert. *Forcing the Spring: The Transformation of the American Environmental Movement*. Rev. ed. Washington, D.C.: Island Press.
- Gray, Thomas and G.W. Stevenson. 2008. "Cooperative Structure for the Middle: Mobilizing Power and Identity." In *Food And The Midlevel Farm: Renewing An Agriculture Of The Middle*, edited by Thomas A. Lyson, G.W. Stevenson, and Rick Welsh, 37-53. Cambridge, MA: The MIT Press.
- Greenberg, Laurie S. Z. 2007. *Innovative Strategies for Meeting New Markets*. Minneapolis, MN: Northcountry Cooperative Development Fund.
- Guthman, Julie. 2004a. "Back to the land: The paradox of organic food standards." *Environment and Planning A* 36 (3):511-528.
- . 2004b. *Agrarian dreams: The paradox of organic farming in California*. Berkeley: University of California Press.

- Hancharick, Amber Lockawich, and Nancy Ellen Kiernan. 2008. "Improving Agricultural Profitability Through an Income Opportunities for Rural Areas Program," *Journal of Extension* 46 (5): n.p.
- Hand, Michael S. 2010. *Local Food Supply Chains Use Diverse Business Models to Satisfy Demand*. *Amber Waves* 8 (4):18-23.
- Hanley, Nick (ed.) 1991. *Farming and the Countryside: An Economic Analysis of External Costs and Benefits*. Wallingford: C.A.B. International.
- Hanson, John D. and John R. Hendrickson. 2009. "Toward a sustainable agriculture." In *Farming with Grass: Achieving Sustainable Mixed Agricultural Landscapes*, edited by A.J. Franzluebbers, 26-36. Ankeny, IA: Soil and Water Conservation Society.
- Harbage, Rebecca. 2013. *Bringing Food Systems Home: Preliminary Analysis for a Regional Food Hub in Oregon's Mid-Willamette Valley*. Master's Thesis, University of Oregon.
- Hardy, Connie, and Mary Holz-Clause. 2008. *Bridging the Gap: What does it take to bring small and medium-sized producers and retail and foodservice distributors together?* Ames, IA: Leopold Center for Sustainable Agriculture, Iowa State University.
- Heffernan, William, Mary Hendrickson, and Robert Gronski. 1999. *Consolidation in the food and agriculture system*. Columbia, MO: Department of Rural Sociology, University of Missouri.
- Hendrickson, Mary and William Heffernan. 2002. *Concentration of Agricultural Markets*. Columbia, MO: Department of Rural Sociology, University of Missouri.
- Hendrickson, Mary, William Heffernan, Phil Howard, and Judith Heffernan. 2001. *Consolidation in food retailing and dairy: Implications for farmers and consumers in a global food system*. Columbia, MO: Department of Rural Sociology, University of Missouri.
- Hendrickson, Mary K. and Harvey S. James, Jr. 2005. "The Effects of Constrained Choice: How the Industrialization of Agriculture Impacts Farming and Farmer Behavior." *Journal of Agricultural and Environmental Ethics* 18: 269–291.
- Hilimire, Kathleen. 2011. "Integrated Crop/Livestock Agriculture in the United States: A Review." *Journal of Sustainable Agriculture* 35 (4):376-393.
- Hinrichs, C. Clare. 2000. "Embeddedness and local food systems: notes on two types of direct agricultural market." *Journal of Rural Studies* 16:295-303.
- . 2007. "Introduction: Practice and Place in Remaking the Food System." In *Remaking the North American Food System: Strategies for Sustainability*, edited by C. Clare Hinrichs and Thomas A. Lyson, 1-15. Lincoln, NE: University of Nebraska.
- Hinrichs, C. Clare and Patricia Allen. 2008. "Selective patronage and social justice: Local food consumer campaigns in historical context." *Journal of Agricultural and Environmental Ethics* 21: 329-352.
- Horrell, Clare, Stuart D. Jones, Suzanne Natelson, and Kath Williams. 2009. *An investigation into the workings of small scale food hubs*. United Kingdom: Making Local Food Work.
- Horst, Megan, Eva Ringstrom, Shannon Tyman, Michael K. Ward, Virginia Werner, and Branden Born. 2011. "Toward a more expansive understanding of food hubs." *Journal of Agriculture, Food Systems, and Community Development* 2 (1): 209–225.
- Hoshide, Aaron K. 2007. *Values-Based & Value-Added Value Chains in the Northeast, Upper Midwest, and Pacific Northwest*. Orono, ME: University of Maine
- IAASTD (International Assessment of Agricultural Knowledge, Science and Technology for Development). 2009. *Agriculture at a Crossroads: Global Report*. Washington, D.C.: Island Press.

- James, Harvey S. and Mary K. Hendrickson. 2010. "Are Farmers of the Middle Distinctively 'Good Stewards'? Evidence from the Missouri Farm Poll, 2006." *Journal of Agricultural and Environmental Ethics* 23:571-590.
- Johnson, Renée. 2009. Climate Change: *The Role of the U.S. Agriculture Sector* (RL33898). Washington, D.C.: Congressional Research Service.
- Johnston, Josée and Lauren Baker. 2005. "Eating outside the box: FoodShare's good food box and the challenge of scale." *Agriculture and Human Values* 22 (3): 313-325.
- Kaufman, Jerome L. 2004. "Introduction." *Journal of Planning Education and Research* 23 (4): 335-340.
- Kirschenmann, Fred. 2004. "A Brief History of Sustainable Agriculture." *The Networker* 9 (2): n.p.
- Kirschenmann, Fred, G.W. Stevenson, Frederick Buttel, Thomas. A. Lyson, and Mike Duffy. 2008. "Why worry about the agriculture of the middle?" In *Food and the midlevel farm: Renewing an agriculture of the middle*, edited by Thomas A. Lyson, G. W. Stevenson, and Rick Welsh, 3–22. Cambridge, MA: The MIT Press.
- Kloppenberg, Jack Jr., Sharon Lezberg, Kathryn De Master, George W. Stevenson, and John Hendrickson. 2000. "Tasting Food, Tasting Sustainability: Defining the Attributes of an Alternative Food System with Competent, Ordinary People." *Human Organization* 59 (2): 177-186.
- Krummel, Luke. 2003. "She's Got the Hook-Up: Martha Putnam's Farm Fresh Connection." *The Portland Phoenix*, July 18. <http://www.portlandphoenix.com/supplements/influentials/18best6.pdf>
- Kvale, Steinar. 2007. *Doing interviews*. London: Sage.
- Lambert, Dayton M., Patrick Sullivan, Roger Claassen, and Linda Foreman. 2007. "Profiles of US farm households adopting conservation-compatible practices." *Land Use Policy*, 24 (1): 72-88.
- Lee, Linda K. 1980. "The impact of landownership factors on soil conservation." *American Journal of Agricultural Economics*, 62 (5): 1070–1076.
- Lerman, Tracy. 2012. *A Review of Scholarly Literature on Values-Based Supply Chains*. Davis, CA: University of California, Davis.
- Lerman, Tracy, Gail Feenstra, and David Visher. 2012. *A Practitioner's Guide to Resources and Publications on Food Hubs and Values-Based Supply Chains*. Davis, CA: University of California, Davis.
- Lev, Larry and G.W. Stevenson. 2011. "Acting collectively to develop midscale food value chains." *Journal of Agriculture, Food Systems, and Community Development* 1(4): 119.
- Lindsey, Timothy C. and Jim Slama. 2012. *Building Successful Food Hubs: A Business Planning Guide for Aggregating and Processing Local Food in Illinois*. Illinois: FamilyFarmed.org, IL Dept. of Commerce and Economic Opportunity, University of Illinois Business Innovation Services, and IL Dept. of Agriculture.
- Lockeretz, William. 2007. "What Explains the Rise of Organic Farming?." In *Organic Farming: An International History*, edited William Lockeretz, 1-8. Boston, MA: CABI North America.
- Low, Sarah A. and Stephen Vogel. 2011. *Direct and Intermediated Marketing of Local Foods in the United States (ERR 128)*. Washington, D.C.: USDA ERS.
- Lyson, Thomas A. 2004. *Civic Agriculture: Reconnecting Farm, Food, and Community*. Medford, MA: Tufts University Press.

- Lyson, Thomas A. 2007. "Civic Agriculture and the North American Food System." In *Remaking the North American Food System: Strategies for Sustainability*, edited by C. Clare Hinrichs and Thomas A. Lyson, 19-32. Lincoln, NE: University of Nebraska.
- MacDonald, James M., and William D. McBride. 2009. *The Transformation of U.S. livestock agriculture: Scale, efficiency, and risks (EIB 43)*. Washington, D.C.: USDA ERS.
- Martin, Garrett and Amar Pate. 2011. *Going Local: Quantifying the Economic Impacts of Buying from Locally Owned Businesses in Portland, Maine*. Augusta, ME: Maine Center for Economic Policy.
- Martinez, Steve, Michael Hand, Michelle Da Pra, Susan Pollack, Katherine Ralston, Travis Smith, Stephen Vogel, et al. 2010. *Local Food Systems: Concepts, Impacts, and Issues (ERR 97)*. Washington, D.C.: USDA ERS.
- Masi, Brad, Leslie Schaller, and Michael H. Shuman. 2010. *The 25% Shift: The Benefits of Food Localization for Northeast Ohio and How to Realize Them*. Ohio: Northeast Ohio Food Web.
- Matson, James, Martha Sullins, and Chris Cook. 2013. *The Role of Food Hubs in Local Food Marketing (SR 73)*. Washington, D.C.: USDA Rural Development.
- Matson, James, and Jeremiah Thayer. 2013. "The role of food hubs in food supply chains." *Journal of Agriculture, Food Systems, and Community Development* 1 (5):43–47.
- Matteson, Gary, and Robert Heuer. 2008. *Growing Opportunity: Outlook for the Local Food Systems Marketplace*, unpublished manuscript. Washington, D.C.: Young, Beginning, and Small Farmer Program, Farm Credit Council.
- McMillan, Tracy. 2013. *The American Way of Eating: Undercover at Walmart, Applebee's, Farm Fields, and the Dinner Table*. New York, NY: Scribner.
- Miller, J. Cory and Keith H. Coble. 2007. "Cheap food policy: Fact or rhetoric?" *Food Policy* 32: 98-111.
- Morley, Adrian, Selyf Morgan, and Kevin Morgan. 2008. *Food hubs: The "missing middle" of the local food infrastructure?* Cardiff, Wales: BRASS Centre, Cardiff University.
- Morton, Lois W., and Leah Miller. 2007. "Connecting Sustainable Agriculture to Rural Development: The Case of Pasture-Based Dairy Grazing." *Journal of the Community Development Society* 38 (3): 23-38.
- Moss, Michael. 2013. "The Extraordinary Science of Addictive Junk Food." *New York Times Magazine*, February 20.
- Mount, Philip. 2012. *Local Food, Scale and Conventionalization: Mid-scale Farms and the Governance of "Local Beef" Chains*. Doctoral Thesis. Guelph, Ontario: University of Guelph.
- Mount, Philip, Shelley Hazen, Shawna Holmes, Evan Fraser, Anthony Winson, Irena Knezevic, Erin Nelson, Lisa Ohberg, Peter Andre, and Karen Landman. 2013. "Barriers to the local food movement: Ontario's community food projects and the capacity for convergence." *Local Environment: The International Journal of Justice and Sustainability* 18 (5): 592-605.
- Nestle, Marion. 2002. *Food Politics: How the Food Industry Influences Nutrition and Health*. Berkeley, CA: University of California Press.
- O'Donoghue, Erik, James MacDonald, Utpal Vasavada, and Patrick Sullivan. 2011. "Changing Farming Practices Accompany Major Shifts in Farm Structure." *Amber Waves* 9 (4): 30-37.
- O'Hara, Jeffrey K. 2011. *Market Forces: Creating Jobs Through Public Investment in Local and Regional Food Systems*. Cambridge, MA: Union of Concerned Scientists Publications.

- Ohberg, Lisa Ann. 2012. *What's Stopping Us? Identifying Barriers to the Local Food Movement Using Ontario, Canada as a Case Study*. Master's thesis. Toronto, Canada: Department of Geography and Planning, University of Toronto.
- Painter, Kathleen. 2007. *An Analysis of Food-Chain Demand for Differentiated Farm Commodities: Implications for the Farm Sector*. Pullman, WA: Center for Sustaining Ag and Natural Resources, Washington State University.
- PCIFAP (Pew Commission on Industrial Farm Animal Production). 2008a. *Putting Meat on the Table: Industrial Farm Animal Production in America*. Baltimore, MD: PCIFAP.
- . 2008b. *Community and Social Impacts of Concentrated Animal Feeding Operations*. Baltimore, MD: PCIFAP.
- Perez, Michelle, Craig Cox, and Ken Cook. 2009. *Facing Facts in the Chesapeake Bay*. Washington D.C.: Environmental Working Group.
- Perrett, Allison S. 2007. *The Infrastructure of Food Procurement and Distribution: Implications for Farmers in Western North Carolina*. Asheville, NC: Appalachian Sustainable Agriculture Project.
- Pollan, Michael. 2012. "Vote for the Dinner Party." *New York Times*, October 14.
- Pothukuchi, Kameshwari. 2009. "Community and Regional Food Planning: Building Institutional Support in the United States." *International Planning Studies* 14 (4): 349-367.
- Pullman, Madeleine E., and Jesse Dillard. 2010. "Values based supply chain management and emergent organizational structures." *International Journal of Operations and Production Management* 30 (7): 744-771.
- Putnam, Judith Jones and Jane E. Allshouse. 1999. *Food Consumption, Prices, and Expenditures, 1970-97 (SB-965)*. Washington, D.C.: USDA ERS
- Ragland, Edward, and Debra Tropp. 2009. *USDA National Farmers' Market Manager Survey 2006*. Washington, D.C.: USDA AMS.
- Ramey, Valerie A. 2009. "Time Spent in Home Production in the Twentieth-Century United States: New Estimates from Old Data." *Journal of Economic History* 69 (1):1-47.
- Rosset, Peter. 1999. "The Multiple Functions and Benefits of Small Farm Agriculture in the Context of Global Trade Negotiations." *Development* 43: 77-82.
- Schmidt, Michele. C., Jane M. Kolodinsky, Thomas P. DeSisto, and Faye C. Conte. 2011. "Increasing Farm Income and Local Food Access: A Case Study of Combined Storage, Marketing, and Distribution Strategies that Link Farmers to Markets." *Journal of Agriculture, Food Systems, and Community Development* 1 (4): 157-175.
- Schumacher, August, Rachel Winch, and Angel Park. 2009. *Fresh, Local, Affordable: Nutrition Incentives at Farmers' Markets 2009 Update*. New York, NY: Wholesome Wave Charitable Ventures.
- Shuman, Michael, Alissa Barron, and Wendy Wasserman, W. 2009. *Community Food Enterprise: Local Success in a Global Marketplace*. Arlington, VA: Wallace Center at Winrock International.
- Slama, Jim, Kathy Nyquist, and Megan Bucknum. 2010. *Local Food System Assessment for Northern Virginia*. Wallace Center at Winrock International, FamilyFarmed.org, and Triskeles Foundation.
- Smith, Stephanie M. n.d. *How Do They Differ: Co-ops, C-Corps, LLCs, Non-Profits, L3Cs, CMGs*. Washington, D.C.: USDA Rural Development. Accessed July 21, 2013.
<http://www.ngfn.org/resources/ngfn-database/knowledge/BusinessModels.pdf>

- Soule, Meredith J. 2001. "Soil management and the farm typology: Do small family farms manage soil and nutrient resources differently than large family farms?" *Agricultural and Resource Economics Review* 30 (2): 179–188.
- Stevenson, G. W., and Rich Pirog. 2008. "Values-Based Supply Chains: Strategies for Agrifood Enterprises of the Middle." In *Food And The Midlevel Farm: Renewing An Agriculture Of The Middle*, edited by Thomas A. Lyson, G.W. Stevenson, and Rick Welsh, 119-143. Cambridge, MA: The MIT Press.
- Stevenson, G. W., Kate Clancy, Robert King, R., Larry Lev, M. Ostrom, and S. Smith. 2011. "Midscale food value chains: An introduction." *Journal of Agriculture, Food Systems, and Community Development* 1 (4): 27–34.
- Stevenson, G.W., Kathryn Ruhf, Sharon Lezberg, and Kate Clancy. 2007. "Warrior, Builder, and Weaver Work: Strategies for Changing the Food System." In *Remaking the North American Food System: Strategies for Sustainability*, edited by C. Clare Hinrichs and Thomas A. Lyson, 33-62. Lincoln, NE: University of Nebraska.
- Tavernier, Edmund M., and Vic Tolomeo. 2004. "Farm typology and sustainable agriculture: Does size matter?" *Journal of Sustainable Agriculture* 24 (2): 33–46.
- Taylor, Ben. 2010. *Small Farms and Sustainability: A Case Study in Madison County, New York*. Undergraduate Honors Thesis. Hamilton, NY: Department of Geography, Colgate University and the Upstate Institute.
- TFP (The Food Project). 2013. "Boston Bounty Bucks." Accessed March 3, <http://thefoodproject.org/bountybucks>
- THS (The Humane Society of the United States). 2011. "Science and Research." Farm Animal Welfare. Washington, D.C.: THS
- Tilman, David, Kenneth Cassman, Pamela Matson, Rosamond Naylor, and Stephen Polasky. 2002. "Agricultural Sustainability and Intensive Production Practices." *Nature* 418: 671-677.
- TRI (The Rodale Institute). 2011. *The Farming Systems Trial: Celebrating 30 years*. Kutztown, PA: The Rodale Institute.
- Tropp, Debra, Edward Ragland, and James Barham. 2008. *Supply Chain Basics: The Dynamics of Change in the U.S. Food Marketing Environment* (AH 728-3). Washington, D.C.: USDA AMS.
- Wallington, Tabitha J. and Geoffrey Lawrence. 2008. "Making democracy matter: Responsibility and effective environmental governance in regional Australia." *Journal of Rural Studies* 24 (3): 277–290.
- Weiss, Robert S. 1994. *Learning From Strangers: The Art and Method of Qualitative Interview Studies*. New York City, NY: The Free Press.
- Welsh, Rick. 1996. *The Industrial Reorganization of U.S. Agriculture: An Overview & Background Report*. Arlington, VA: Henry Wallace Center for Alternative Agriculture.
- . 1997. *Reorganizing U.S. Agriculture: The Rise of Industrial Agriculture and Direct Marketing*. Arlington, VA: Henry Wallace Center for Alternative Agriculture.
- Wilkins, Jennifer L. and Marcia Eames-Sheavly. 2003. "A Primer on Community Food Systems: Linking Food, Nutrition and Agriculture." *Discovering the Food System*. Ithaca, NY: Cornell University Extension.
- Woods, Michael. 2005. *Rural Geography: processes, responses, and experiences in rural restructuring*. London: Sage.
- Zajfen, Vanessa. 2008. *Fresh Food Distribution Models for the Greater Los Angeles Region*. Los Angeles, CA: Center for Food and Justice, Urban and Environmental Policy Institute, Occidental College.