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Farm Fresh Food Boxes

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FARM FRESH FOOD BOXES

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ABSTRACT

In response to trends that challenge food access, farmer livelihoods and public health, several market and social institutions have pursued the development of alternative food systems (AFS). These attempt to support the production and distribution of foods with important qualities, such as attention to specific growing practices, higher worker standards, superior product quality and taste, support for environmental health and farmer well-being (Valchuis et al. 2015). While there has been some success in these efforts, as evidenced by the growth of farmers' markets, community supported agriculture programs, and farm-to-institution relationships, growth in direct to consumer markets has flattened in recent years (USDA 2012) and there are still many barriers that limit the efficacy and reach of AFS. Farmers and distributors are constantly innovating, trialing new ideas and re-thinking old ones in hopes of overcoming or circumventing these challenges.

The Farm Fresh Food Box (F3B) project is one such market innovation that hybridizes direct to consumer (DTC) and value chain models with the goal of expanding producer sales and improving rural food access. Researchers and extension professionals from University of Vermont, University of Washington, Evergreen State College, and University of California studied the efficacy of F3B as a potential food system innovation through an applied project in partnership with small farmers and retailers. Research efforts focused on understanding challenges and opportunities for success within the model, as well as gleaning fundamental take-aways to better inform the broader knowledge of the continuum between DTC and value chain distribution systems.

This thesis considers findings from the first half of this research project. The first article *Farm Fresh Food Boxes: Pilot Study Findings of Farmer-Rural Retailer Partners* assesses the pilot season of the project and identifies major challenges and associated learning opportunities, with a focus on implications for Extension personnel.The second article, *Farm Fresh Food Boxes: Relationships in Value-Chain Partnerships,* merges existing knowledge of strategies and barriers that characterize DTC with current understanding of value-chains to better understand the process of expanding into new consumer populations. This analysis focuses on how the quality of the relationship between producers and retailers impacts overall success when expanding into new or unusual venues. Unlike much of the previous value-chain research, this paper places unique emphasis on the importance of the farmer-retailer relationship.

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CHAPTER 1: COMPREHENSIVE LITERATURE REVIEW

1.1. Introduction

The transformation of the American food system over the last century has resulted in an array of interconnected challenges that bridge the economic, ecological, and social spheres. The growth of large farms has challenged small and medium sized farmer livelihoods (Lyson et al., 2008) while the proliferation of national supermarket chains has similarly affected independent grocers and general stores in rural communities (Lyson, Stevenson and Welsh, 2008). These trends combine to threaten rural agricultural economies and communities (Jilcott et al., 2010)

The effects of this transformation extend beyond economic viability, impacting the health of rural residents who suffer from poor access to the types of fresh, affordable produce that support a healthy life (Liese et al., 2007; Blanchard and Lyson, 2006). The relationship between consumption of fresh, whole foods and chronic disease and obesity lends a sense of urgency to the situation (Bailey, 2010; Andreyeva et al., 2011)

In response to these trends, several market and social institutions have pursued the development of alternative food systems (AFS) (Valchuis et al., 2015). These alternative food systems use Direct to Consumer (DTC) marketing and value-chain innovations to support the distribution of foods that have qualities often missing in industrially produced foods. These missing qualities include additional attention to specific growing practices,

worker standards, product quality, taste, environmental health, and farmer well-being (Valchuis et al., 2015).

While there has been some success in these efforts, as evidenced by the growth of farmers' markets, community supported agriculture programs, and farm-to-institution relationships, growth in direct to consumer markets has flattened in recent years (USDA, 2012) and there are still many barriers that limit the efficacy and reach of AFS. Farmers and distributors are constantly innovating, trialing new ideas and re-thinking old ones in hopes of overcoming or circumventing these challenges.

1.2. Farms, Retailers & Consumers: Shared Challenges in the Food System

Competition from industrial, large-scale farms and agribusinesses challenges small and mid-scale farmers to maintain sustainable livelihoods (Andreatta, 2008). The growth of these large, centralized farms and firms who benefit from technological efficiencies and economies of scale has allowed them to outcompete smaller players (Lyson et al., 2008). For example, of the 6.8 million US farms that existed in 1935, fewer than half were still in business by 1964, and in 2002 that number fell to 1.9 million (Norberg-Hodge et al., 2002). And, while there has been a surge in growth in very small farms—those grossing less than $10,000 annually grew by 38% between 1982 and 2007—the number of farms grossing between $10,000 and $249,000 decreased by over 40%, and the number of large farms (those grossing over $500,000) grew by 129%. As these trends continue, it becomes increasingly difficult for small and mid-sized farmers to maintain adequate

markets that provide enough sales volume at a high enough price to remain viable (Lerman, 2012).

Likewise, the survival of independent grocers and general stores, particularly in rural areas, has been impacted (Jilcott et al., 2010). Expanded road networks and the growth of automobile ownership has affected the transportation patterns of community members and customers while creating a more difficult financial landscape for store owners (Jilcott et al., 2010; Bailey, 2010; Stoffle, 1972). Shrinking populations that result from patterns of rural-to-urban migration challenge small retailers by reducing the customer base in small towns. This trend creates a feedback loop, as towns that lack food retailers are less desirable destinations for new residents and young families to move to (Bailey, 2010). Moreover, the spread of national supermarket chains, dollar stores, and e-commerce directly threaten grocers by undercutting prices and altering shopping behaviors for consumers (Dollar Store Impacts; Rothstein 2019). Additionally, many rural residents now work away from home and shop elsewhere along their commute, effectively reducing the potential customer base in their home town.

Small retailers also face difficulties when trying to order from distributors who require a large order volume, or will not deliver to out of the way village centers. Additionally, small retailers are challenged to comply with retail regulations that are written with larger businesses in mind (Bailey, 2010). Many small communities have lost or are losing their local grocers. In the ten years between 1995 and 2005, the number of grocery stores in Iowa decreased by almost half, while the number of supercenter grocers grew by 175%

(O'Brien, 2008. Small retailers continue to face many challenges that threaten their viability (Bailey, 2010; Stoffle, 1972).

The impacts of these trends extend beyond the immediate challenges experienced by small business owners. In the United States, the country store has long served an integral and multifunctional role in rural communities and in rural life. Among other things, general stores have been the center for trade, purveying food and other necessary items, local economic drivers, provisioning credit to community members, employers, and centers for gathering and social engagement (Bailey, 2010; Stoffle, 1972; Morse 2018). The decline of rural retailers is a problematic trend for the viability and vibrancy of rural towns that see these stores not just as distributors of goods, but as institutional anchors that support community functioning and social connection (Stoffle, 1972).

The challenges faced by small farms and retailers have also resulted in varied food access and made it difficult for many to buy fresh, healthy produce (Jilcott et al., 2010; Smith and Morton, 2009; Kaufman, 1999; Morton et al., 2005; Hendrickson et al., 2006; Richards and Smith, 2006; Morland et al., 2002; Eikenberry and Smith, 2005; Liese et al., 2007; Blanchard and Lyson, 2006). As more and more small retailers go out of business, many communities are simply left without food stores. Compared to people with access to grocery stores, residents of food deserts have lower access to a diversity of healthy foods, consume fewer fruits and vegetables (Andreyeva et al., 2011; Hanson et al., 2009; Rose and Richards, 2004; Zenk et al., 2009; Timperio et al., 2008), have a higher risk of poor nutrition, and suffer more from chronic illness, including obesity and heart disease

(Bailey, 2010; Andreyeva et al., 2011; Booth et al., 2001; Lovasi et al., 2009; Larson et al., 2009; Robert and Reither, 2004; Roux, 2003; Roux et al., 2001).

Many rural residents live in agricultural communities, but lack access to the food that is produced around them (Morton and Blanchard, 2007; McEntee and Agyeman, 2010). Environmental and economic barriers, such as lack of time to purchase and prepare food, high prices, and lack of access to culturally relevant food, limit the purchase and consumption of fruits and vegetables (Conner and Garnett, 2016; Yeh et al., 2008.; Beydoun, 2008). Ample evidence suggests that eating a diet rich in fresh fruits and vegetables and low in processed foods supports wellbeing (Hanson et al., 2017; Reddy and Katan, 2004; Ness and Powles, 1997; Steinmetz and Potter, 1996). Those who live in communities with good access to grocery stores have a greater likelihood of eating a healthy diet and maintaining a healthy weight (O'Malley et al., 2013; Rose and Richards, 2004; Morland et al., 2006; Powell et al., 200; Lopez, 2007; Bodor et al., 2010; Moore et al., 2008). Rural adults are less likely to consume the recommended amount of fruits and vegetables than their urban and peri-urban counterparts, and those living in food deserts are less likely to consume a variety of fresh foods (Bailey, 2010; Andreyeva et al., 2011; Booth et al., 2001; Lovasi et al., 2009; Larson et al., 2009). Likewise, income is still a major predictor of fruit and vegetable consumption and participation in DTC relationships (Conner and Garnett, 2016).

1.3. Alternative Food Systems

Several market and social institutions have pursued the development of alternative food systems (AFS) in an attempt to counteract the diverse social, economic and ecological externalities of a globalized food system (Valchuis et al., 2015). Efforts to re-localize and re-orient priorities within the food system have taken many forms, including DTC channels such as farmers' markets, farm stands, and community supported agricultural arrangements; value chain relationships, such as farm-to-school and farm-to-hospital sales; as well as a resurgence of home and community gardening (Valchuis et al., 2015). Foods within these alternative food systems often have embedded quality attributes that can be missing in traditional supply chains. Such values include better nutritional quality and taste, specific growing practices or animal welfare standards, prioritization of community economic well-being, farmer livelihoods, and environmental stewardship (Valchuis et al., 2015; Murdoch et al.; Sage, 2003; Selfa et al., 2005; Sitaker et al., 2014).

1.3.1 DTC Markets

The emergence of DTC marketing models can be traced back to 1976 and the passing of the Farmer-to-Consumer Direct Marketing Act (Hardesty, 2007). In the decades that have followed, DTC sales have experienced significant growth**,** and many believe that there are an array of potential benefits conferred with the strengthening of local food systems through the use of these strategies (Colasanti et al., 2010; Conner and Levine, 2007; Andreatta and Wickliffe, 2002; Andreatta et al., 2008). Many small-scale farmers use these marketing models in order to situate themselves within a food distribution niche

that excludes their larger counterparts who benefit from economies of scale and drive down the price of food (Andreatta et al., 2008; Lyson and Guptill, 2004; Lyson, 2000; Andreatta and Wickliffe, 2002). University extension groups often recommend direct marketing approaches for smaller producers as a strategy to sell smaller volumes of produce at a higher price point (Hardesty, 2007). These models can also be helpful as a diversification strategy to supplement wholesale accounts, particularly useful given the nature of farmers' highly perishable product (LeRoux et al., 2010; Hardesty, 2007). Some suggest that DTC food distribution models are also better able to prioritize and maintain transparency about environmental and human health factors. Because DTC farmers have more interaction with their customer base, they are able to differentiate and communicate the value of their food rather than merely competing through price. This allows them to highlight their growing practices, environmental ethic, or superior food quality (Schmidt et al., 2011; Conner et al., 2016; Lobao, 1990; Hardesty, 2007). Most popular among these market innovations are farmers' markets and CSAs, each offering their own opportunities and limitations.

1.3.2 Farmers' Markets

Farmers’ markets are a popular DTC model. There is considerable variation in their efficacy. Farms are able to sell their produce at higher retail prices, creating the potential to increase profit share for the farmer by circumventing distributors, though evidence of this is inconsistent and dependent on circumstance (LeRoux et al., 2010; Hardesty, 2007). Additionally, farmers' markets have a relatively low barrier to entry, require minimal

up-front investment in packaging materials, and provide opportunities for farmers to network and develop the relationships necessary to engage in other marketing strategies like CSAs or restaurant accounts (LeRoux et al., 2010; Hardesty, 2007). However, farmers' markets are considered risky and some farms find that they are not profitable enough (Hardesty, 2007; Ness, 2007; Parsons, 2007). Farmers' markets are also widely critiqued for primarily serving those of higher socioeconomic status, and can be considered elitist or exclusive, creating both real and perceived barriers for consumers with lower incomes (McEntee, 1010; DeLind, 1993; Hinrichs, 2003; Dupuis and Goodman, 2005).

1.3.3. Community Supported Agriculture

CSAs were introduced to the United States in the mid-1980s, gaining an early foothold in the New England states (Cooley and Lass, 1998; DeMuth, 1993). Since then, CSAs have ballooned in popularity nationally, and are one of the most widespread forms of DTC marketing strategies outside of farmers' markets (Vassalos et al., 2017; Greer, 1999; Sharp et al., 2002; USDA, 2015; Kolodinsky et al., 1997; Harmon, 2014; USDA, 2012; Pole et al., 2013; Sproul and Kropp, 2015).

CSAs create opportunities for relationships between consumers and farmers, give an identity to farmers, and a better understanding of farming to consumers (Cooley and Lass, 1998). This relationship supports the consumption of more fresh and sustainably grown produce while also enabling farmers up to prioritize land stewardship alongside productivity and profitability (Cooley and Lass ,1998; Vassalos et al., 2017)

Like farmers' markets, CSAs have the potential to increase farm profitability by bypassing normal distribution channels and converting a portion of a farm's sales from wholesale to retail (Sharp, 2002; Vassalos et al., 2017; Lea et al., 2006; Zepeda, 2006; Curtis et al., 2015). Some researchers have shown that marketing costs can be lower for CSA channels than for farmers' markets and, once established, CSAs generate a reliable cash-flow throughout the year, without the same level of continued labor required by farmers' markets (Hardesty, 2007). The unique financial arrangement can also serve to distribute the risk of farming across the growers and the eaters (DeMuth, 1993; Greer, 1999; Sharp et al., 2002; Pollan, 2016). CSA consumers are likely to know more about who grows their food, where it is grown, and by what cultural practices (DeMuth, 1993; Sharp et al., 2002). There is evidence that CSA membership is positively associated with the consumption of a larger quantity and larger diversity of vegetables, which can have positive effects on health (Perez et al., 2003; Brehm et al., 2008; McCormack et al., 2010; Minaker et al. 2014; Kane and Lohr, 1997; Uribe, 2012; Hanson et al., 2017).

Despite their widespread growth, CSAs still represent a fraction of all food consumption in the United States, and there are several barriers that limit CSA success: consumer financial constraints (Hanson et al., 2017; Brehm and Eisenhauer, 2008; Cooley and Lass, 1998; Russell and Zepeda, 2008; Landis et al., 2010; Kolodinsky and Pelch, 1997), discomfort with product quantity and lack of choice (Hardesty, 2007; Perez et al., 2003), inability to commit to a weekly pick-up, and lack of time, knowledge or resources to

cook whole foods (Cooley and Lass, 1998; Perez et al., 2003; Uribe, 2012; Freedman and King, 2016; Brown et al., 2009).

1.3.4. Value Chains

In an attempt to overcome the constraints of DTC markets, some farms have begun to merge the benefits of DTC marketing with existing supply chain infrastructure. Value chain relationships have evolved as an alternative to traditional, hierarchical supply chains as a means of broadening the distribution of products differentiated by embedded attributes beyond DTC channels while retaining the connection between farmers and consumers (Conner 2012 et al., 2012; Porter, 1985).

The concept of value chains was originally conceived in business literature and later extended to agri-food systems (Stevenson and Pirog, 2008). In her comprehensive literature review on the subject, Lerman defined value chains as:

> *"a network of business enterprises operating in wholesale markets, moving goods differentiated by a variety of different kinds of attributes, including but not limited to those related to production practices (e.g. organic and pesticide-free), adherence to specific ethics (e.g. humane animal treatment or fair trade), origin in a particular location (e.g. local or a region known for the product), or the identity of the farm or ranch from which it came (Lerman, 2012)."*

In these models, “values” represent both the products sold and the value generated through the collaborative partnership of the value-chain (Stevenson and Pirog, 2008;

Hoshide, 2007; Block et al., 2008). Within value-chains, farms, businesses and institutions engage in relationships that are horizontal and cooperative. They rely on trust and communication to determine the division of labor (Conner et al., 2012; Lerman, 2012), and are shaped by shared values which might include goals beyond profit maximization (Conner et al., 2012; Stevenson and Pirog, 2008; Bloom and Hinricks, 2001; Renting et al., 2003).

In addition to creating new marketing channels for small and medium-sized growers at a price premium generally associated with DTC marketing (Conner et al., 2008; Diamond and Barham, 2011; Hoshide, 2007; Jablonski et al., 2011), value-chains may also be an effective strategy to improve fresh food access to low-income communities by expanding outside of the geographic and cultural barriers of DTC. Examples of this are most common in the value-chain arrangement of farm-to-school (Jablonski et al., 2011; Lerman, 2012; Conner et al., 2016). Despite the potential benefits that value-chains offer, achieving fair and affordable pricing (Abatekassa and Peterson, 2011; Feenstra et al., 2011; Zajfen, 2008; Cohen and Derryck, 2011) and maintaining consumer demand (Bloom and Hinricks, 2011) can still pose challenges.

Coordination and communication can also be a challenge for value-chain partners. Within value-chains, communication of the value of the product along the supply chain is crucial. However, as the food moves further from the farm, the message can become diluted. King and Venturini (2005) observed challenges in maintaining information about

the products through the supply chain and Clancy and Ruhf (2010) found that retailers would oversimplify the values of the food.

Foundational to many of these issues is the importance and challenge of building real relationships across value chain actors. These challenges can be amplified by differences in work cultures found in alternative and conventional supply chain settings (Clancy and Ruhf, 2010; Zajfen, 2008; Lerman, 2012). Lack of knowledge about how to work within value-chain partnerships has also been found to limit their efficacy and has prompted the involvement of outside actors, like non-profits and universities, who aim to help formation and functioning of these arrangements (Lerman, 2012).

In an effort to help businesses overcome these barriers, research of existing value-chain relationships has identified several best practices that contribute to success. Chief among these is the importance of cultivating a stable, trusting, and communicative relationship between value-chain partners (Conner et al., 2008; Hoshide, 2007; Feenstra et al., 2011; Conner et al., 2016). Partners should strive for mutual understanding of the model as it exists along their supply chain, and of the perspective of their partners, including a recognition of each party's strengths and limitations (Stevenson and Pirog, 2008; Diamond and Barham, 2011). From these relationships, actors are better able to co-create systems that are mutually beneficial, establish fair prices that work for all parties, and adapt as necessary (Cohen and Derryck, 2011). Moreover, these qualities build the foundation for effective communication that enables all subsequent aspects of coordination, including supply management, logistics, and communication of values to

consumers, as well as consumer feedback back to producers (Stevenson et al., 2008; Feenstra et al., 2011; King and Venturini, 2005). Finally, effective product differentiation and communication of those values is crucial, as is the preservation of the producer's identity (Stevenson and Pirog, 2008; Conner et al., 2008; Block et al., 2008; Diamond and Barham, 2011; Feenstra et al., 2011).

1.4. Consumer Preferences

Efforts to understand the array of interrelated barriers to AFS have been complemented by research to understand the factors that drive consumption of alternative foods, which are shown to be widely varied (Pole and Kumar, 2015; Sitaker et al., 2019). Consumers prefer food that is convenient, affordable, and reliably available (Pole and Kumar, 2015; Sitaker et al., 2019; Tropp, 2013), and as shown above, alternative foods can require more effort or money to access. However, Valchuis et al. (2015), found that consumers who held multiple, "stacked" beliefs about alternative foods were more likely to participate in AFS, and in some cases, those beliefs would push consumers to overcome other barriers to participation, like high prices or lack of convenience. Motivating preferences and beliefs include a preference for fresh, whole foods, environmental ethics, concerns about provenance, scale, the relationship between food and health, the desire to shop local and the desire to support small farms (Feldmann et al., 2014; Pole and Kumar, 2015; Sitaker et al., 2019; Bean and Sharp, 2011). Self-efficacy, knowledge of alternative food systems, and access to social support (Conner and Garnett, 2016; Shaikh et al., 2008) have been shown to improve consumers' ability to partake in alternative food

systems beyond personal preferences. A follow up study conducted by Conner and Garnett (2016) found that in Vermont, provenance was found to be more important than actual relationships with farmers, suggesting an opportunity for potential expansion of DTC markets beyond the immediate reach of farmers themselves, as is the case in value-chain arrangements.

CHAPTER 2: FARM FRESH FOOD BOXES: RELATIONSHIPS IN

VALUE-CHAIN PARTNERSHIPS

Abstract

The Farm Fresh Food Box (F3B) project is a market innovation that hybridizes direct to consumer (DTC) and value chain models with the goal of expanding producer sales and improving rural food access. Researchers and extension professionals from University of Vermont, University of Washington, Evergreen State College, and University of California studied the efficacy of F3B as a potential food system innovation through an applied project in partnership with small farmers and retailers. Research efforts focused on understanding challenges and opportunities for success within the model, as well as gleaning fundamental take-aways to better inform the broader knowledge of the continuum between DTC and value chain distribution systems. This analysis merges existing knowledge of strategies and barriers that characterize DTC with current understanding of value-chains to better understand the process of expanding into new consumer populations. This paper focuses on how the quality of the relationship between producers and retailers impacts overall success when expanding into new or unusual venues. Unlike much of the previous value-chain research, this work places unique emphasis on the importance of the farmer-retailer relationship.

Keywords

Direct to Consumer, Alternative Food Systems, Farming, Food Retail, Value-Chains, Food Access, Relationships

Introduction

The transformation of the American food system over the last century has resulted in an array of interconnected challenges that bridge the economic, ecological, and social spheres. The growth of large farms has challenged small and medium sized farmer livelihoods while the proliferation of national supermarket chains has similarly affected independent grocers and general stores in rural communities (Lyson, Stevenson and Welsh 2008). These trends combine to threaten rural agricultural economies and communities (Jilcott et al. 2010).

The effects of this transformation extend beyond economic viability, impacting the health of rural residents who suffer from poor access to the types of fresh, affordable produce that support a healthy life (Liese et al. 2007; Blanchard and Lyson 2006). The relationship between consumption of fresh, whole foods and chronic disease and obesity lends a sense of urgency to the situation (Bailey 2010; Andreyeva et al. 2011).

In response to these trends, several market and social institutions have pursued the development of alternative food systems (AFS) (Valchuis et al. 20150). These alternative food systems use Direct to Consumer (DTC) marketing and value-chain innovations to support the distribution of foods that have qualities often missing in industrially produced foods. These missing qualities include additional attention to specific growing practices, worker standards, product quality, taste, environmental health, and farmer well-being (Valchuis et al. 2015).

While there has been success in these efforts, as evidenced by the growth of farmers' markets, community supported agriculture programs, and farm-to-institution relationships, growth in direct to consumer markets has flattened in recent years (USDA 2012) and there are still many barriers that limit the efficacy and reach of AFS. Farmers and distributors are constantly innovating, trialing new ideas and re-thinking old ones in hopes of overcoming or circumventing these challenges.

The Farm Fresh Food Box (F3B) project is one such market innovation which hybridizes DTC and value chain models with the goals of expanding producer sales and improving rural food access. Through a research-extension collaboration, our team studied the efficacy of F3B as a potential food system innovation through an applied pilot project, in partnership with small farmers and retailers. Research efforts focused on understanding challenges and opportunities for success within the model, as well as gleaning fundamental takeaways to better inform our broader knowledge of the continuum between Direct to Consumer (DTC) and value chains.

In this article, we consider how we can merge existing knowledge of strategies and barriers that characterize DTC with current understanding of value-chains to expand into new consumer populations. We specifically consider how the quality of the relationship between producers and retailers affects overall success when expanding into new or unusual venues. Unlike much of the previous value-chain research, this paper places unique emphasis on the importance of the farmer-retailer relationship.

We begin with a literature review of common challenges faced by small farms and retailers in the context of an industrialized food system, and the ways in which alternative food system innovations are used to address these issues. We then detail the research methods used to track the F3B pilot, and analyze this data using a conceptual framework which situates F3B as a 'hybrid value-chain' on a continuum between DTC structures and traditional supply chains. Through this lens, we consider the ways that F3B is able to combine the benefits of both traditional supply chains and DTC models to create an innovative food distribution model, while considering the barriers and opportunities we encountered along the way.

Background Literature

Farms, Retailer and Consumer: Shared Challenges in the Food System

Competition from industrial, large-scale farms and agribusinesses challenges small and mid-scale farmers to maintain sustainable livelihoods (Andreatta 2008). The growth of these large, centralized farms and firms who benefit from technological efficiencies and economies of scale has allowed them to outcompete smaller players (Lyson et al. 2008). For example, of the 6.8 million US farms that existed in 1935, fewer than half were still in business by 1964, and in 2002 that number fell to 1.9 million (Norberg-Hodge et al. 2002). And while there has been a surge in growth in very small farms—those grossing less than $10,000 annually grew by 38% between 1982 and 2007—the number of farms grossing between $10,000 and $249,000 decreased by over 40%, and the number of large farms (those grossing over $500,000) grew by 129%. As these trends continue, it becomes increasingly difficult for small and mid-sized farmers to maintain adequate markets that provide enough sales volume at a high enough price to remain viable (Lerman 2012).

Likewise, the survival of independent grocers and general stores, particularly in rural areas, has been impacted (Jilcott et al. 2010). Expanded road networks and the growth of automobile ownership has affected the transportation patterns of community members and customers, while creating a more difficult financial landscape for store owners (Jilcott et al. 2010; Bailey 2010; Stoffle 1972). Shrinking populations that result from patterns of rural-to-urban migration challenge small retailers by reducing the customer base in small towns. This trend creates a feedback loop, as towns that lack food retailers are less desirable destinations for new residents and young families to move to (Bailey 2010) Moreover, the spread of national supermarket chains, dollar stores, and e-commerce directly threaten grocers by undercutting prices and altering shopping behaviors for consumers (Dollar Store Impacts; Rothstein 2019). Additionally,, many rural residents now work away from home and shop elsewhere along their commute, effectively reducing the potential customer base in their home town.

Small retailers also face difficulties when trying to order from distributors who require a large order volume, or will not deliver to out of the way village centers. Additionally, small retailers are challenged to comply with retail regulations that are written with larger businesses in mind (Bailey 2010) Many small communities have lost or are losing their local grocers. In the ten years between 1995 and 2005, the number of grocery stores in Iowa decreased by almost half, while the number of supercenter grocers grew by 175% (O'Brient 2008). Small retailers continue to face many challenges that threaten their viability (Bailey 2010; Stoffle 1972)

The impacts of these trends extend beyond the immediate challenges experienced by small business owners. In the United States, the country store has long served an integral and multifunctional role in rural communities and in rural life. Among other things, general stores have been the center for trade, purveying food and other necessary items, local economic drivers, provisioning credit to community members, employers, and centers for gathering and social engagement (Bailey 2010; Stoffle 1972, Morse 2018) The decline of rural retailers is a problematic trend for the viability and vibrancy of rural

towns that see these stores not just as distributors of goods, but as institutional anchors that support community functioning and social connection (Stoffle 1972).

The challenges faced by small farms and retailers have also resulted in varied food access and made it difficult for many to buy fresh, healthy produce (Jilcott et al. 2010; Smitth and Morton 2009; Kaufman 1999; Morton et al. 2005; Hendrickson et al. 2006; Richards and Smith 2006; Morland et al 2002; Eikenberry and Smith 2005; Liese et al. 2007; Blanchardand Lyson 2006). As more and more small retailers go out of business, many communities are simply left without food stores. Compared to people with access to grocery stores, residents of food deserts have lower access to a diversity of healthy foods, consume fewer fruits and vegetables (Andreyeva et al. 2011; Hanson et al. 2009; Rose and Richards 2004; Zenk et al. 2009; Timperio et al. 2008) have a higher risk of poor nutrition, and suffer more from chronic illness, including obesity and heart disease (Bailey 2010; Andreyeva et al. 2011; Booth et al. 2001; Lovasi et al. 2009; Larson et al. 2009; Robert and Reither 2004; Roux 2003; Roux et al. 2001).

Many rural residents live in agricultural communities, but lack access to the food that is produced around them (Morton and Blanchard 2007; McEntee and Agyeman 2010). Environmental and economic barriers, such as lack of time to purchase and prepare food, high prices, and lack of access to culturally relevant food limit the purchase and consumption of fruits and vegetables (Conner and Garnett 2016; Yeh et al. 2008; Beydoun 2008). Ample evidence suggests that eating a diet rich in fresh fruits and vegetables and low in processed foods supports well-being (Hanson et al. 2017; Reddy and Katan 2004; Ness and Powles 1997; Steinmetz and Potter 1996). Those who live in communities with good access to grocery stores have a greater likelihood of eating a healthy diet and maintaining a healthy weight (O'Malley et al. 2013; Rose and Richards 2004; Morland et al. 2006; Powell et al. 200; Lopez 2007; Bodor et al. 2010; Moore et al. 2008). Rural adults are less likely to consume the recommended amount of fruits and vegetables than their urban and peri-urban counterparts, and those living in food deserts are less likely to consume a variety of fresh foods (Bailey 2010; Andreyeva et al. 2011; Booth et al. 2001; Lovasi et al. 2009; Larson et al. 2009). Likewise, income is still a major predictor of fruit and vegetable consumption and participation in DTC relationships (Conner and Garnett 2016).

Alternative Food Systems

Several market and social institutions have pursued the development of alternative food systems (AFS) in an attempt to counteract the diverse social, economic and ecological externalities of a globalized food system (Valchuis et al. 2015). Efforts to re-localize and re-orient priorities within the food system have taken many forms, including DTC channels such as farmers' markets, farm stands, and community supported agricultural arrangements; value chain relationships, such as farm-to-school and farm-to-hospital sales; as well as a resurgence of home and community gardening (Valchuis et al. 2015). Foods within these alternative food systems often have embedded quality attributes that can be missing in traditional supply chains. Such values include better nutritional quality

and taste, specific growing practices or animal welfare standards, prioritization of community economic well-being, farmer livelihoods, and environmental stewardship (Valchuis et al. 2015; Murdoch et al; Sage 2003; Selfa et al. 2005; Sitaker et al. 2014).

DTC Markets

The resurgence of DTC marketing models can be traced back to 1976 and the passing of the Farmer-to-Consumer Direct Marketing Act (Hardesty 2007). In the decades that have followed, DTC sales have experienced significant growth**,** and many believe that there are an array of potential benefits conferred with the strengthening of local food systems through the use of these strategies (Colasanti et al. 2010; Conner and Levine 2007; Andreatta and Wickliffe 2002; Andreatta et al. 2008) Many small-scale farmers use these marketing models in order to situate themselves within a food distribution niche that excludes their larger counterparts who benefit from economies of scale and drive down the price of food (Andreatta et al. 2008; Lyson and Guptill 2004; Lyson 2000; Andreatta and Wickliffe 2002). University extension groups often recommend direct marketing approaches for smaller producers as a strategy to sell smaller volumes of produce at a higher price point (Hardesty 2007). These models can also be helpful as a diversification strategy to supplement wholesale accounts, particularly useful given the nature of farmers' highly perishable product (LeRoux et al. 2010; Hardesty 2007). Some suggest that DTC food distribution models are also better able to prioritize and maintain transparency about environmental and human health factors. Because DTC farmers have more interaction with their customer base, they are able to differentiate and communicate the value of their food rather than merely competing through price. This allows them to highlight their growing practices, environmental ethic, or superior food quality (Schmidt et al. 2011; Conner et al. 2016; Lobao 1990; Hardesty 2007). Most popular among these market innovations are farmers' markets and CSAs, each offering their own opportunities and limitations.

Farmers' Markets

Farmers' markets are a popular DTC model. There is considerable variation in their efficacy. Farms are able to sell their produce at higher retail prices, creating the potential to increase profit share for the farmer by circumventing distributors, though evidence of this is inconsistent and dependent on circumstance (LeRoux et al. 2010; Hardesty 2007). Additionally, farmers' markets have a relatively low barrier to entry, require minimal up-front investment in packaging materials, and provide opportunities for farmers to network and develop the relationships necessary to engage in other marketing strategies like CSAs or restaurant accounts (LeRoux et al. 2010; Hardesty 2007). However, farmers' markets are considered risky and some farms find that they are not profitable enough (Hardesty 2007; Ness 2007; Parsons 2007). Farmers' markets are also widely critiqued for primarily serving those of higher socioeconomic status, and can be considered elitist or exclusive, creating both real and perceived barriers for consumers with lower incomes (McEntee 1010; DeLind 1993; Hinrichs 2003; Dupuis and Goodman 2005).

Community Supported Agriculture

CSAs were introduced to the United States in the mid-1980s, gaining an early foothold in the New England states (Cooley and Lass 1998; DeMuth 1993). Since then, CSAs have ballooned in popularity nationally, and are one of the most widespread forms of DTC marketing strategies outside of farmers' markets (Vassalos et al. 2017; Greer 1999; Sharp et al. 2002; USDA 2015; Kolodinsky et al. 1997; Harmon 2014; USDA 2012; Pole et al. 2013; Sproul and Kropp 2015).

CSAs create opportunities for relationships between consumers and farmers, give an identity to farmers, and a better understanding of farming to consumers (Cooley and Lass 1998). This relationship supports the consumption of more fresh and sustainably grown produce while also enabling farmers up to prioritize land stewardship alongside productivity and profitability (Cooley and Lass 1998; Vassalos et al. 2017).

Like farmers' markets, CSAs have the potential to increase farm profitability by bypassing normal distribution channels and converting a portion of a farm's sales from wholesale to retail (Sharp 2002; Vassalos et al. 2017; Lea et al. 2006; Zepeda 2006; Curtis et al. 2015). Some researchers have shown that marketing costs can be lower for CSA channels than for farmers' markets and, once established, CSAs generate a reliable cash-flow throughout the year, without the same level of continued labor required by farmers' markets(Hardesty 2007). The unique financial arrangement can also serve to distribute the risk of farming across the growers and the eaters (DeMuth 1993; Greer 1999; Sharp et al. 2002; Pollan 2016). CSA consumers are likely to know more about who grows their food, where it is grown, and by what cultural practices (DeMuth 1993; Sharp et al. 2002). There is evidence that CSA membership is positively associated with the consumption of a larger quantity and larger diversity of vegetables, which can have positive effects on health (Perez et al. 2003; Brehm et al. 2008; McCormack et al. 2010; Minaker et al. 2014; Kane and Lohr 1997; Uribe 2012; Hanson et al. 2017).

Despite their widespread growth, CSAs still represent a small fraction of all food consumption in the United States, and there are several barriers that limit CSA success: consumer financial constraints (Hanson et al 2017; Brehm and Eisenhauer 2008; Cooley and Lass 1998; Russell and Zepeda 2008; Landis et al. 2010; Kolodinsky and Pelch 1997), discomfort with product quantity and lack of choice (Hardesty 2007; Perez et al. 2003), inability to commit to a weekly pick-up, and lack of time, knowledge or resources to cook whole foods (Cooley and Lass 1998; Perez et al. 2003; Uribe 2012; Freedman and King 2016; Brown et al. 2009).

Value Chains

In an attempt to overcome the constraints of DTC markets, some farms have begun to merge the benefits of DTC marketing with existing supply chain infrastructure. Value chain relationships have evolved as an alternative to traditional, hierarchical supply chains as a means of broadening the distribution of products differentiated by embedded

attributes beyond DTC channels while retaining the connection between farmers and consumers (Conner 2012 et al. 2012; Porter 1985).

The concept of value chains was originally conceived in business literature and later extended to agri-food systems (Stevenson and Pirog 2008). In her comprehensive literature review on the subject, Lerman defined value chains as:

> *"a network of business enterprises operating in wholesale markets, moving goods differentiated by a variety of different kinds of attributes, including but not limited to those related to production practices (e.g. organic and pesticide-free), adherence to specific ethics (e.g. humane animal treatment or fair trade), origin in a particular location (e.g. local or a region known for the product), or the identity of the farm or ranch from which it came (Lerman 2012)."*

In these models, "values" represent both the products sold and the value generated through the collaborative partnership of the value-chain (Stevenson and Pirog 2008; Hoshide 2007; Block et al. 2008). Within value-chains, farms, businesses and institutions engage in relationships that are horizontal and cooperative. They rely on trust and communication to determine the division of labor (Conner et al. 2012; Lerman 2012), and are shaped by shared values which might include goals beyond profit maximization (Conner et al. 2012; Stevenson and Pirog 2008; Bloom and Hinrichs 2001; Renting et al. 2003).

In addition to creating new marketing channels for small and medium-sized growers at a price premium generally associated with DTC marketing (Conner et al. 2008; Diamond and Barham 2011; Hoshide 2007; Jablonski et al. 2011), value-chains may also be an effective strategy to improve fresh food access to low-income communities by expanding outside of the geographic and cultural barriers of DTC. Examples of this are most common in the value-chain arrangement of farm-to-school (Jablonski et al. 2011; Lerman 2012; Conner et al. 2016). Despite the potential benefits that value-chains offer, achieving fair and affordable pricing (Abatekassa and Peterson 2011; Feenstra et al. 2011; Zajfen 2008; Cohen and Derryck 2011) and maintaining consumer demand (Bloom and Hinricks 2011) can still pose challenges.

Coordination and communication can also be a challenge for value-chain partners. Within value-chains, communication of the value of the product along the supply chain is crucial. However, as the food moves further from the farm, the message can become diluted. King and Venturini (2005) observed challenges in maintaining information about the products through the supply chain and Clancy and Ruhf (2010) found that retailers would oversimplify the values of the food.

Foundational to many of these issues is the importance and challenge of building real relationships across value-chain actors. These challenges can be amplified by differences in work cultures found in alternative and conventional supply chain settings (Clancy and Ruhf 2010; Zajfen 2008; Lerman 2012). Lack of knowledge about how to work within value-chain partnerships has also been found to limit their efficacy and has prompted the

involvement of outside actors, like non-profits and universities, who aim to help formation and functioning of these arrangements (Lerman 2012).

In an effort to help businesses overcome these barriers, research of existing value-chain relationships has identified several best practices that contribute to success. Chief among these is the importance of cultivating a stable, trusting, and communicative relationship between value-chain partners (Conner et al. 2008; Hoshide 2007; Feenstra et al. 2011; Conner et al 2016). Partners should strive for mutual understanding of the model as it exists along their supply chain, and of the perspective of their partners, including a recognition of each party's strengths and limitations (Stevenson and Pirog 2008; Diamond and Barham 2011). From these relationships, actors are better able to co-create systems that are mutually beneficial, establish fair prices that work for all parties, and adapt as necessary (Cohen and Derryck 2011). Moreover, these qualities build the foundation for effective communication that enables all subsequent aspects of coordination, including supply management, logistics, and communication of values to consumers, as well as consumer feedback back to producers (Stevenson et al. 2008; Feenstra et al. 2011; King and Venturini 2005). Finally, effective product differentiation and communication of those values is crucial, as is the preservation of the producer's identity (Stevenson and Pirog 2008; Conner et al. 2008; Block et al. 2008; Diamond and Barham 2011; Feenstra et al. 2011).

Consumer Preferences

Efforts to understand the array of interrelated barriers to AFS have been complemented by research to understand the factors that drive consumption of alternative foods, which are shown to be widely varied (Pole and Kumar 2015; Sitaker et al. 2019). Consumers prefer food that is convenient, affordable, and reliably available (Pole and Kumar 2015; Sitaker et al. 2019; Tropp 2013). and as shown above, alternative foods can require more effort or money to access. However, Valchuis et al. (2015), found that consumers who held multiple, "stacked" beliefs about alternative foods were more likely to participate in AFS, and in some cases, those beliefs would push consumers to overcome other barriers to participation, like high prices or lack of convenience. Motivating preferences and beliefs include a preference for fresh, whole foods, environmental ethics, concerns about provenance, scale, the relationship between food and health, the desire to shop local and the desire to support small farms (Feldmann et al. 2014; Pole and Kumar 2015; Sitaker et al. 2019; Bean and Sharp 2011). Self-efficacy, knowledge of alternative food systems, and access to social support (Conner and Garnett 2016; Shaikh et al. 2008) have been shown to improve consumers' ability to partake in alternative food systems beyond personal preferences. A follow up study conducted by Conner and Garnett (2016) found that in Vermont, provenance was found to be more important than actual relationships with farmers, suggesting an opportunity for potential expansion of DTC markets beyond the immediate reach of farmers themselves, as is the case in value-chain arrangements.

Farm Fresh Food Box Concept

Through a research-extension collaboration, our team studied the efficacy of the Farm Fresh Food Box concept as a potential food system innovation through an applied pilot project, in partnership with small farmers and retailers. The F3B concept is a market innovation that exists in the space between the DTC market channels and traditional supply chains, with a goal to expand producer sales and improve rural food access.

The F3B concept works as follows: farms offer weekly boxes of fresh food at local retail locations that offer convenient access to consumers. Ideally, F3B is a low-risk additional market channel for farmers in retail locations that otherwise could not maintain produce sections due to low sales volume and lack of infrastructure. Customers pre-order boxes at the retail site on a weekly basis for later pick-up, and the box contents change throughout the season to sell produce that is abundant.

Similarly to a CSA, customers pick up their food box from the retail site, but in this case do not have the significant commitment and cost of an entire CSA season. Additionally, we anticipated that the community pick-up location would add a level of convenience. While F3B is less a secure income stream than other DTC channels for farms, it is also lower risk and lower cost. The retailer may also benefit from increased ancillary sales of other food items and increased foot traffic and customer loyalty. Finally, social benefits could include connection between farmers and retailers and revitalization of retail sites as community gathering places. As shown below in Figure 1, we anticipated that F3B would fill a new market space that compares favorably with respect to benefit to consumers, farmers and retailers, as compared to other similar models.

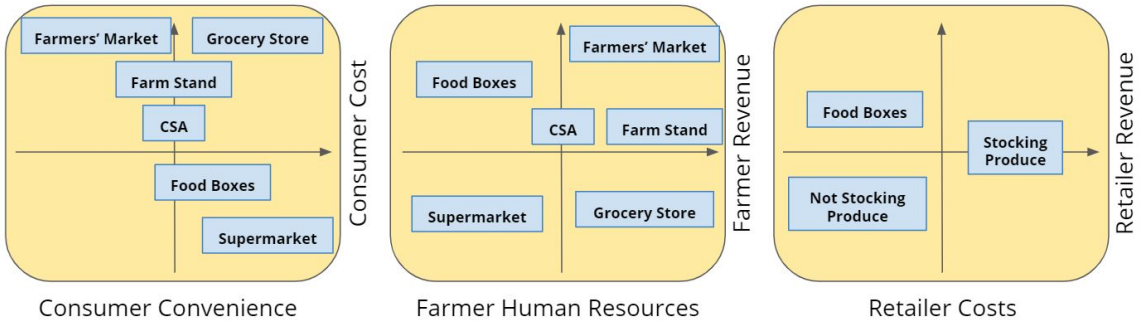

Fig 1 Cost Comparison of Different Models for Consumers, Farmers and Retailers

We developed the conceptual framework below to model the spectrum of food system market channels that span from DTC to traditional supply chains. Within this framework, we consider F3B to be a hybrid value chain positioned between the two ends of that spectrum. This perspective acknowledges that value chains are not concretely defined but share certain characteristics with both market strategies, may thus access a wider spectrum of opportunities that could help to further expand the sale of alternative food in

an economically viable way, and are also subject to the myriad challenges that already exist related to food distribution and access (Bauman et al., 2014).

In this framework we focus on three primary themes that emerged from the literature to understand hybrid value-chains: relationships, communication of differentiated food values and the food environment (Bloom and Hinrichs 2011; Conner et al. 2012; Valchuis et al. 2015). These themes sit at the intersection of two existing frameworks: the value-chain framework which describes elements and indicators of food system value chains (Bloom and Hinricks 2011; Conner et al. 2012) and the stacked beliefs framework which outlines common trade-offs and barriers that affect peoples' willingness and ability to participate in alternative food systems (Valchuis et al. 2015) .

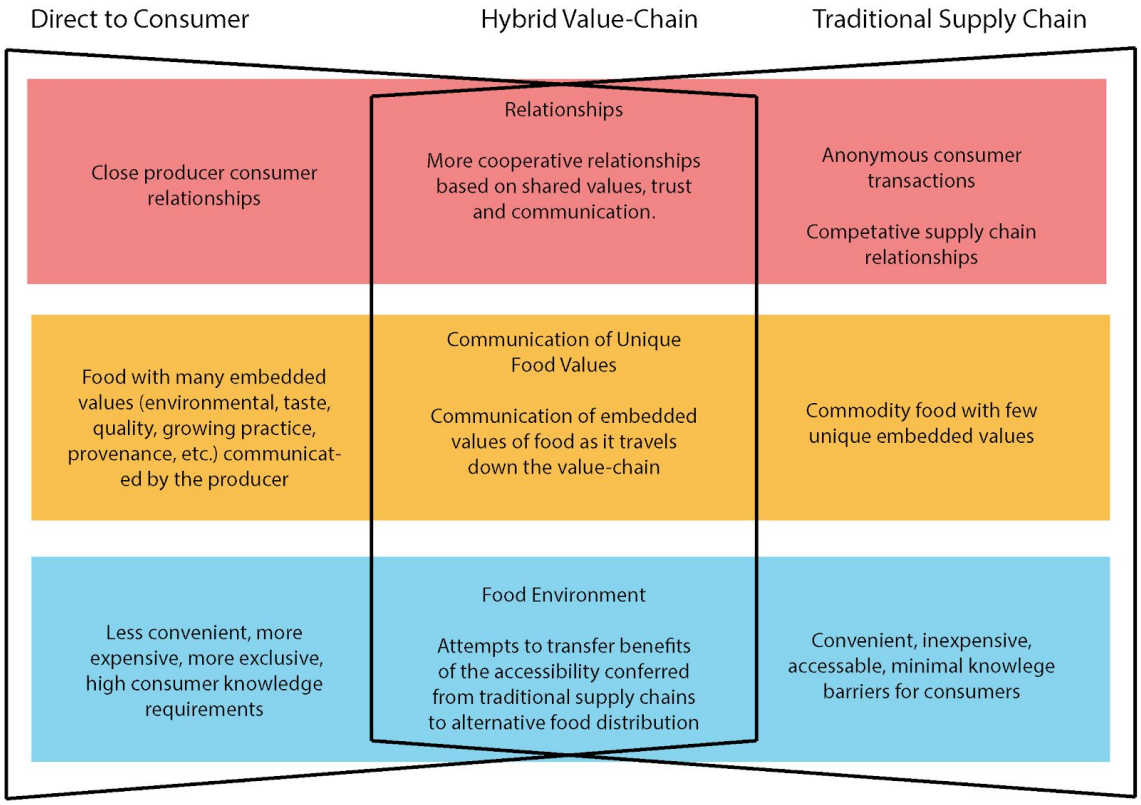

Fig 2 Comparison of DTC, Hybrid Value-Chain, and Traditional Supply Chains in Food Systems (Bloom and Hinrichs 2011; Conner et al. 2012; Valchuis et al. 2015)

The first theme we consider is the role of the relationship in value-chains. The closer relationship between supply chain partners replaces the direct relationship between the producer and consumer in DTC venues. This relationship is understood to underpin adaptation and collaboration between the partners and promote success in value-chain models. In our work, we considered the following themes as indicators of relationship quality, which are based on the value-chain framework (Bloom and Hinricks 2011;

Conner et al. 2012): relationships of mutual regard and shared values; shared governance; and, trust, transparency and communication.

Next, we consider product differentiation and the subsequent communication of those unique food values to the consumer. In DTC venues, this is done through differentiated marketing and direct interaction with consumers on the part of producers (Schmidt et al. 2011; Conner et al. 2015; Lyson and Welsh 2005; Lobao 1990). Conversely, in most traditional supply chains, food is seen as interchangeable and differentiation is not as important. In value-chain models, product differentiation is important and partners work closely with one another to communicate the unique identity of the food as it travels down the supply chain (Conner et al. 2012; Porter 1985; USDA 2015; Conner et al. 2012). In our analysis we aim to understand the ways in which food sold through F3B is uniquely differentiated, and the extent to which this message is delivered. To do so, we consider the unique attributes of the farms and retailers that might differentiate their products, marketing, and the ways in which retailers represented the farms.

The final theme we consider is the environment in which the food is sold, and how this affects the viability of the value-chain in that location. It is widely shown that consumers value convenience, location and price when buying and preparing food (Pole et al. 2015; Sitaker et al. 2019; Tropp 2013). In the article *Stacking Beliefs and Participation in Alternative Food Systems,* price and convenience are cited as trade-offs and lack of food knowledge a barrier to buying foods from alternative food systems. We consider these three themes together to make up the food buying environment. In the model, we see the hybrid-value chain as an attempt to both address some of the chronic DTC food access barriers related to this environment, and are interested in the ways that these barriers limit the efficacy of F3B itself across different locations.

Implementation

The project is a tri-state collaboration of extension and research partners from the University of Vermont (UVM), Washington State University (WSU), Evergreen State College, and the University of California (UC). Research protocols were approved under the UVM Institutional Review Board. In Spring of 2017, the extension team engaged 3 farmer-retailer pairs in the northeastern and western U.S. to trial a full-season F3B pilot project. Extension professionals worked to match farmers with rural country stores, convenience stores or gas stations that were proximal to the farm and did not already offer fresh produce in a significant quantity. Extension also facilitated project logistics between farm-store partners and provided tailored marketing materials and technical support throughout the season. They served as a liaison between researchers and project partners to guide research development and data collection. The extension and research teams worked collaboratively to develop research instruments to assess project outcomes.

During the first full F3B pilot season, farmers offered weekly boxes of produce with seasonal content. Retailers advertised F3B, took weekly orders, relayed box orders to farmers, and served as pick-up locations. Farmers dropped off the prepaid boxes every week, and customers returned for pick-up. Each farmer-retail pair determined order and pick-up times; farmers set box sizes and price. These elements varied by location, community demographics and store culture.

The team was motivated by the potential to create opportunities for retailers to provide local products in a low-risk manner that would also result in ancillary sales; to improve access to healthy foods at affordable prices in an accessible, convenient and "comfortable" location for consumers; and, to develop an innovative, low-risk market channel for farmers.

During the pilot phase of the project, research was focused on identifying challenges and opportunities for success within the model, to help determine the extent to which F3B meets the above goals. In this article, we attempt to identify and understand the opportunities and barriers of F3B with a focus on understanding the ways that the retailer-farmer relationship affects project outcomes.

Research

The extension and research teams worked collaboratively to develop research instruments to assess project outcomes and challenges. These included firmographic surveys, tracking spreadsheets, and semi-structured qualitative interviews.

The firmographic surveys were developed for retailers and farmers to complete at the beginning of the F3B season. These surveys were administered online through the web application LimeSurvey and included descriptive questions about each partners' business. Tracking spreadsheets were used by all partners to record quantitative, logistic, and descriptive information about the food box program throughout the season. These were made available in hard copy and in digital formats using MS Excel. Finally, semi-structured interviews were developed collaboratively by the research and extension teams (Wengraf 2001). Questions were designed to illuminate partners' motivations, values, and experiences with the F3B project. The qualitative interview was tested with two non-participating farmers before use.

Six farmer and six retailer interviews were conducted between November 2017 and March 2018. All interviews were conducted over the phone, recorded, transcribed verbatim by a third party contractor into MS Word and de-identified by UVM researchers. Transcripts were structurally coded according to the interview guide. The research team developed a codebook made of collated themes from the value-chain framework and the stacked beliefs framework (Bloom 2011; Conner et al. 2012; Valchuis et al. 2015). Two of the transcripts were independently coded according to this framework using the qualitative data analysis software NVivo version 11 by two

researchers. Differences in data interpretation were discussed and resolved by the research team through consensus, with inter-coder comparisons yielding a kappa coefficient of 0.85 or greater (Hanson 2019). The remaining interviews were coded by one researcher according to the agreed-upon standard.

Results

This analysis considers six project sites in Washington State and Vermont that tried F3B during the 2017 growing season. Project sites participated in the program for varying lengths of time, ranging between 1-6 months. Challenges establishing partnerships and a late growing season affected start dates. Total box sales ranged from 5-136, and averaged between 1–6 boxes sold per week (Table 1). All farms were small and independently owned, and sold through at least one DTC market channel. Some farms also raised animals for meat and had some wholesale markets. Three of the retailers had gas stations at their stores, two were independent general stores, and one was a farm and feed store.

Table 1 Farmer and Retailer Partners in Vermont and Washington

ID	**Description**	**ID**	**Description**	**Box Sales**	**Months in Program**	**Avg. Box / Week**
VT1	Small Diversified Farm	VT1A	Farm & Feed Store	5	1	1.25
VT2	Small Diversified Farm	VT2B	Gas Station / Convenience Store	15	2	1.88
VT4	Small Diversified Farm	VT4A	General Store	12	1.5	2
WA1	Small Diversified Farm	WA1B	General Store	136	6	5.67
WA2	Small Diversified Farm	WA2A	Gas Station / Convenience Store	10	4	0.63
WA3	Small Diversified Farm	WA3A	Gas Station / Convenience Store	10	1	2.5

Relationships

The quality of relationship between value-chain partners has been identified as distinct from traditional supply chain relationships, and a crucial component of innovation and success within these models. In this analysis, we considered three levels of relationship quality, informed by the value-chain framework outlined by Conner et. al. (2012), relationships of mutual regard and shared values, shared governance and fair pricing, and relationships based on communication, trust & transparency.

Relationships of Mutual Regard and Shared Values

During the pilot season, the majority of farm and retailer partners shared overlapping values. All farms were small to mid-sized operations that were organically certified or used organic practices. Farmers expressed values for growing high quality food, being part of their community, and land stewardship.

> VT4 (Farmer) "I like doing things with my hands. I like growing food, vegetables, and food that people say taste better than anything they've had."
>
> VT2 (Farmer) "[we farm to] maintain the health of the land, ourselves and our workers, and provide a nutritious source of food for people in the community"

Each also had an interest in making food more accessible, especially for low-income people, and saw F3B as an opportunity to expand their market beyond their existing customer base. Many farmers also expressed pride in the quality of their food, particularly in its exceptional taste.

Many of the retailers self-identified as "community stores", and all expressed an interest in helping to support other local businesses.

> VT4A (Retailer) “mostly because everyone feels it's an essential business anchor and also community anchor in terms of social, and, you know, it's a hub for people."
>
> WA3A (Retailer) “We're in a very small community and I would definitely say that we are the community store."
>
> VT2B (Retailer) "We like to try to make an effort to help grow, you know, a local business, or in this case, a local farm, which is a business."

The retailer with the most success had been a part of a CSA prior to the project, and expressed an interest in supporting local food.

> WA1B (Retailer) "we've belonged to CSAs in the past and the whole thing about bringing small farmers together with other people in the community is great."

Generally, the retailers appreciated the possibility of bringing new people into their stores and the opportunity to expand their selection of fresh produce.

Both farms and retailers expressed interest in the role of their business in supporting their community, and nearly all expressed a sense that the project had the potential to benefit their business. While the retailers expressed a desire to help another local business (the farm), the farms didn't see their involvement as beneficial to the retailer. Likewise, retailers did not express opinions or values about farming cultivation practices or land stewardship. Most of the partners expressed positive feelings about their relationship with their partner, even if they ultimately described a relatively dysfunctional working partnership.

Shared Governance - Fair, Stable Pricing of Value-Differentiated Products

Shared governance and fair pricing was another indication of relationship quality for this analysis. Shared governance and fair pricing distinguish value-chain partnerships from traditional supply chains in that there is an effort to cooperate and more equitably distribute profit and risk. Shared governance is also an indication of co-creation and innovation of new models and partnership styles.

While it was apparent that the retailers believed that their involvement enabled them to support local businesses (the farms), the farms did not express the reciprocal belief. This may have been because the arrangement was a direct expansion of the farmers' markets, allowing them to charge DTC prices while selling through a retail outlet while the benefit to the retailers was hypothetical ancillary sales. Given the early stage in the project and low box sales, this may have created an imbalanced benefit outcome for the farmers and retailers, as the retailers' direct financial incentive was more delayed than that of the farms.

All farms and retailers said that the project did not change their business or affect their profitability, though most still believed that it had the potential to. While the retailers did not report that the lack of direct and immediate benefit was a problem, the burden of work may have been disproportionately allocated.

Trust, Transparency and Communication

Relationship depth and quality varied greatly across partnerships, despite surface level value sharing. Many of the relationships appeared shallow, as indicated by lack of communication, negative reports of relationship quality, and discrepancies in how the retailers and farmers within a pair viewed the quality of that relationship. In most cases it seemed that a more substantive relationship with more consistent communication would have benefited the partnership.

In one instance, despite expressing positive feelings about their retail partner, the farmer was disheartened by their inability to communicate regularly over email. This ultimately

made the project incompatible with the farmer's work-flow. In this case, the retailer's interpretation of the relationship was positive, the retailer going so far as to express gratitude for how accommodating the farmer was, not realizing the farmer's frustration.

> VT1 (Farmer) "The biggest thing was that he doesn't communicate over email, and so he was much more, like, he, a couple of times he would, like, go out of his way to, like, stop by the farm to tell us that there was an order, or something like that. Like, he didn't give, he didn't call us or email."
>
> VT1A (Retailer) "Oh, very good. We've been doing business back and forth here, probably, for the last couple years or so, anyways. [...] Actually, they were very accommodating, because if I had somebody that couldn't be here for the day for the pickup, I could run up and they would take and do the... would do... Oh, what am I saying? They'd put a box together for me." (when asked about their relationship)

At another site, the farmer's assessment of the partnership was more positive than the retailer's. The farmer appreciated the energy and enthusiasm put forth by the retailer, and reported good communication. However the retailer described their relationship as "non-existent." Both the farmer and the retailer expressed having had ideas during the season that were never realized; both attributed this to a failure in communication. The retailer observed weaknesses in how the box logistics were coordinated, a seemingly critical issue which may have been solved had there been more ongoing collaboration between the partners.

> VT2 (Farmer) "Communications with the stores were great. I mean, Partner Store was really on board, and you know, once we ironed out who emailed who when, it all went smoothly. "
>
> VT2B (Retailer) "I think that a direct line of communication may have benefitted us a little more."

At the site with the least success, both parties reported a negative or non-existent relationship experience. In this case, the farmer did not have a relationship with the owner, and perceived the project to be burdensome for the retailer's employees. The farmer felt the lack of relationship translated into a lack of understanding for the farm's story and for their food. When asked about their relationship with the farmer, the retailer had very little sense of who the farmer was, or what their involvement in the project was.

> WA2 (Farmer) "And since we never really had, you know, like I wondered, it would have been cool if we could have been able to sit down with the retailer at the beginning of the season and talk about our farm to them, because they don't really know anything about us."

WA2A (Retailer)

"Interviewer: Can you tell me about your…what your relationship was like with the farmer?

Interviewee: Which farmer?

Interviewer: The farmer who was providing the food.

Interviewee: It was fine, we didn't have much of an interaction but it was fine.

Interviewer: Did you guys coordinate each week to get the boxes or to learn about what food was gonna be in the next box?

Interviewee: I think they were coming and change the sign. I'm not sure if they called in or they came.

Interviewer: Did you ever meet the farmer?

Interviewee: Let me think. I can say I don't remember, maybe I did. "

The most successful farm-store pair expressed positive feelings about their relationship with the retailer. The farmer had a strong sense that their relationship was a critical aspect of their success, and spoke about this at length. In this case, the retailer reported the relationship was "real easy" and the farmer, "very accommodating."

> WA1 (Farmer) "When you get down to it, the relationship between a grower, a retailer and the people who actually eat, it's kinda odd type of thing and it can make or break it."

Thus, while most partners reported positive feelings about each other as people, acknowledging good intent and shared values, both farmers and retailers expressed that a lack of relationship and a general lack of good communication hindered the effective implementation of the project. In many of the cases, it appeared as if the partnerships had sufficient buy-in and value sharing to give the model a try, but not enough "activation energy" to really put the effort forth to execute and persist through early failures. In some cases, partners never met, and did not co-determine their work flow or logistics together. One possible result of this was the general absence of adaptive management throughout the season.

Communication of Embedded Food Values

The second theme that we focused on was the communication of the embedded food attributes. Successful marketing of alternative or DTC food relies on effectively sharing the qualities of that food having to do with those things that make it "alternative." This may include superior taste, certifications, growing practices, and other attributes. Traditionally, DTC sales rely on the producer-consumer relationship to convey these

values. However, in value-chain models that relationship shifts. Below, we consider the attributes of the farms that participated in the program and the extent to which these were marketed or represented by the retail partners.

Farm Attributes

All of the farms in the pilot season were small to mid-sized operations that grew diversified organic vegetables. Each of the farmers prioritized land stewardship and being a part of their community. A few of the farms discussed the superior taste of their food, believing that once folks taste it, they become regular customers. Each of the farmers also believed that their existing customers bought their food because they shared similar values for high quality, organic cultivation practices, and support for local businesses.

> VT2 (Farmer) "People are looking for what they see as a healthier product. We're known for quality, so people appreciate that freshness and that quality. And then a big part of it is, they really wanna support local."

Marketing of Attributes

It appeared as if the embedded attributes of the food were not clearly communicated to consumers. Almost all partners expressed a need for more and better marketing. Apart from one, most retailers did not market outside of a sandwich board, posters, and in some cases, social media. Not all retailers did these things. One of the retailers did not put the sandwich board outside of their store, and another did not want to display the flyer. Adding to this challenge was the fact that the box was sold for pre-order and the food was not present in the store during the time of sale. Some of the project sites set up a display with the empty box, but expressed that it was a challenge to sell something that was not physically present in the store. One retailer transitioned to pre-buying the boxes, and displayed it as a marketing strategy (VT4A).

> WA2 (Farmer) "I think the marketing needs to be a lot more, like, it's got to be in front of people's faces, like actually meeting people, actually talking to people, encouraging them, introducing them."

The retailer who put the most effort into marketing (VT2B), supplying additional printed materials and pump-topper advertisements on their gas pumps was the most critical of the overall marketing effort. They noted that they could have timed marketing pushes better, and created better displays. They also believed that they lost critical days of pre-sales due to lags in communication of the upcoming week's box contents.

> VT2B (Retailer) "I've been doing this for years between wine and beer, and we learned that most people don't shop wine for main brands or anything like that, they're shopping labels." (commenting on the lack of visible vegetables during the time of sale)

> VT2B (Retailer) "Execution is by far the most important part of trying to grow (sell) something."

Two retailers spoke about advertising pushes (a television segment and print article) that were not appropriately timed with the actual availability of the food box, considering this a missed opportunity (VT2B, WA2). Even the most successful retailer (WA1B) expressed that it took a long time for would-be customers to understand what the box was.

> WA1B (Retailer) "I think, you know, a lot of people didn't know what it was. They didn't really understand what it was and how it worked, and people would see the sign and see that the...our board that we would have listed every week with the stuff on it, but they still didn't really understand it for a while, and then after a while people kind of asked questions about it, and, but, so I think the reaction was pretty good once people started figuring out what it was."

Retailer Representation of Farms

Finally, several of the farmers spoke about the challenge of working with a retailer who simply did not know their farm or their values. Most of the farms sell their food through DTC channels and maintain a high amount of touch with their customers. However, during the F3B project, farmers had no interaction with the consumer and many had minimal relationship with their retailer. This lack of farmer-customer relationship combined with a lack of farmer-retailer relationship may have caused a loss of the farm's and food's identity as it moved down the value-chain, especially where effective marketing was also lacking.

The value of the farmer-retailer relationships and the importance of effective marketing intersect when considering the role of the retailer as the surrogate representative of the farm and the primary relationship builder with the consumer. Four of the six farms discussed the importance of the retailer in this capacity. The farms consistently expressed that the retailer's relationship with the customer and their representation of the farm's story was critical.

> WA2 (Farmer) "I think the challenge was that a relationship between our retailer and us wasn't really established, wasn't really strong. And so that probably affects, I think, the ability for them to both, say, want to market it and know how, because maybe they needed a better story about who we are and who our farm is."

> VT4 (Farmer) "But really it always has a lot to do with store personnel. You know, the store manager, or store personnel, they've gotta be excited about it, or it's just gonna be, like, you know, a sack of potatoes in the back room for them. And I do know, by experience in selling, to other stores, other items, that if you get one buyer who's into it, sales really spike up."

> VT1 (Farmer) "He wasn't, he's not the best, he wasn't sort of, like, a strong communicator in that way, so it kind of is a lot to ask, I guess. And so therefore maybe we do provide more information on, you know, through posters or through, you know, somehow provide a little bit more information so that people could understand it without having to rely on the retailer."

The most successful farm (WA2) believed that it was not just the authentic relationship that his retailer partner had with their customers, but also the "mom and pop" ambiance that created an atmosphere conducive to buying whole foods, as opposed to an overstimulating convenience store.

> WA1 (Farmer) "But, you know, the folks who run that store, it's very much still a kind of country mom-and-pop store, which, despite a lot of people trying to create that sort of image as a marketing tool, like, as a genuine thing that I find out here at least to be very few and far between anymore. And so I think a lot of the credit would go towards them and just the people they are, and the way they're able to structure and operate their business, and the people that they have to run it for them."

At one site, the farmer had a strong sense that the retailer did not understand her story, and felt as if the project was a burden for the retailer. This was the only retailer who expressed that the food box itself lacked sufficient value, and was improperly priced, comparing it to organic food found in the supermarket.

> WA2A (Retailer) "Like I said before, you need to have more products in there for the price. Check what prices are around, like all the supermarkets now, they carry organic food and they are way cheaper."

Food Environment

The final component that we considered is the way in which F3B affects and is affected by the context of the surrounding food buying culture. There are several chronic contextual barriers that affect the consumption of alternative foods; in this paper we focus on price, convenience, and level of knowledge about what to do with seasonal, whole foods. F3B was initially conceived with hopes of addressing some of these barriers structurally. For example, the research team believed that the direct cooperation between the farms and retailers would reduce the consumer price while still fetching an acceptable profit for farms. Likewise, placement of the box in rural retail venues was expected to reduce barriers for consumers by increasing convenience and circumventing the cultural barriers to attending farmers' markets. Because this analysis does not include consumer data, it is unclear to what extent the model affected these variables, and this should be explored. However, retailer and farmer experience reinforced that these chronic challenges were likely relevant factors in the success of the pilot.

Price

Many of the farm partners believe that the high price of their food creates a real or perceived barrier for some consumers. Farm VT2 explained that for many of their products, their food is more expensive than similar in appearance, lower-quality food sold at supermarkets. To be affordable, farm VT4 subsidized their box to below-wholesale pricing. Similarly, WA3 believed their food to be affordable, but also identified profitability as their main challenge.

> VT2 (Farmer) "I think one of the biggest barriers is probably price if they are, you know, income limited, certainly. In some...not all products, but in a lot of products, our food is going to be more expensive than at Costco or Walmart."
>
> VT4 (Farmer) “It's a matter of...we kind of subsidize the pricing of what we're putting in the box to reach a certain price point, and long-term, you know, that would have to...We gave away a lot of produce at a really good price. [...] I was pricing the produce in the box actually, I guess, there, you know, almost below wholesale prices.”
>
> WA3 (Farmer) “Oh, I guess in a nutshell, being profitable.” (When asked their main challenge as a farmer)

The tension between price and profitability for the farmers may have been amplified by the location of box sales, which was outside of traditional DTC venues where higher prices are more typical. The food boxes were sold in convenience stores that primarily sell processed foods and beverages. Moreover, several of the retailers expressed affordability as a valued attribute of their store. In one case, the retailer described F3B as too expensive, comparing it to organic food sold at nearby supermarket chains.

> VT4A (Retailer) "We're trying to be a place where, you know, I think increasingly people recognize our prices are reasonable"
>
> WA2A (Retailer)
>
> "Interviewer: Why do you think your customers choose to buy from your store?
>
> Interviewee: [...] Of course, pricing, the best pricing"
>
> WA2A (Retailer) "Like I said before, you need to have more products in there [the food box] for the price. Check what prices are around, like all the supermarkets now, they carry organic food and they are way cheaper."

Thus, the inexpensive setting where the boxes were sold may have amplified the perceived degree of unaffordability and affected the retailers’ perception of the food boxes themselves.

Finally, farmers expressed disappointment that F3B was not compatible with food stamps. The farmers noted that both farmers' markets and CSAs now accept these programs, and that this is an important component of affordability for their consumers.

Convenience

Convenience and accessibility are another critique of many DTC market channels, and the F3B team had hoped this would be a strength of the model. Several of the retailers expressed that their customers patronize them because of convenience; a few of the locations self-identified as the only option in town. Despite this, most locations were still within close proximity to farmers' markets, food co-ops, or supermarkets. Thus, improvements in physical convenience may have been minimal. Additionally, it is unclear whether F3B increased convenience given that it required two trips to the store: pre-order and pick-up. A couple retailers pre-bought boxes and offered spot-sales in response to this issue.

> WA3A (Retailer) "The one thing that made it difficult is that, you know, I would have some people that would come in and ask about it and they wanted something for me to have available for them right then, not just once a week where they pre-order or anything like that."

> VT4A (Retailer) "Well, we kind of modified, because at a certain point, people were in on the wrong day to order, or they had just missed the pick-up, or something, but they wanted a box, and so I, I asked if we could have one, you know?"

Lack of Consumer Knowledge

Several farmers and retailers believed that lack of knowledge about cooking created a barrier to using the produce. One of the farms (VT1) discussed that this is a significant issue for their CSA and farmers' market customers and explained putting forth significant effort educating their customers. Two retailers (VT2B, WA3A) stated that their customers expressed challenges about knowing what to do with the produce.

> VT2B (Retailer) "And then, again, some people came in that I knew had bought one one week and asked if they were going to buy another week, and a lot of it was, 'Well, we didn't know what to do with half the stuff so we ended up tossing it.'"

> WA3A (Retailer) "The only thing that I and, like I said, I addressed it with the farmer, is that some of the more unique products, because, you know, some of the just different things, just to throw in ideas, or how to cook or, you know, anything like that because I know some folks were like, 'I didn't eat that because I didn't know what to do with it.'"

Discussion

Understanding F3B as a hybrid value chain positioned between the two ends of a spectrum whose limits are DTC and traditional supply chains demonstrated that the project indeed shared characteristics with both market strategies, and was subject to the myriad challenges and possibilities that exist related to food distribution and access in each (Bauman et al. 2014).

The analysis affirmed existing value-chain research which identifies relationships of mutual regard between partners, fair stable pricing, value differentiation of products, and co-learning, trust and communication as critical aspects of successful value-chain partnerships (Conner et al. 2010; Bloom and Hinrichs 2011; Conner et al. 2012; Valchuis et al. 2015). In F3B, the relationship between retailers and farmers stood out as both important and underdeveloped. Similarly to previous research, retailers and farmers were motivated by overlapping values and motivations (Conner et al. 2010; Izumi et al. 2010, Conner; Sage 2003), however in F3B their relationships lacked the depth that might have characterized them as solid working partnerships.

Unlike in previous research which affirms the link between communication and co-adaptation (Bloom and Hinricks 2011; Conner et al. 2010), F3B was marked by the lack of consistent and successful communication between partners, a subsequent lack of understanding of each other's business models, and a lack of co-adaptation in response to challenges throughout the season. This lack of communication appeared to inhibit the discussion of new ideas and the troubleshooting of challenges experienced by the partners during the season. This absence of communication was in many cases seeded at the start of the project when partners did not directly collaborate to co-determine their project logistics, share their communication needs and constraints (such as preference for phone or e-mail, time availability, *etc*.) or describe the inner-workings and values of their businesses to one another. The types of challenges that partners reported at the end of the season, for the most part, were probably not insurmountable, but the lack of discussion about them made them impactful nonetheless. Had the owners and employees met one another, toured each other’s businesses, or had discussions about their values and goals directly with one another, the retailers might have also been better able to represent the farm to their customers.

In most DTC and alternative models, the communication of the embedded food attributes is critical. Often, these foods are sold for a higher price that reflects additional care for food quality, land, and labor (Schmidt et al. 2011; Conner et al. 2015; Lyson and Welsh 2005; Lobao 1990). When shifting from DTC models where farmers represent themselves directly to consumers to value-chain models where there is an intermediary, care needs to be taken in maintaining the communication of these less-visible attributes.

In F3B, the absence of this communication and subsequent mutual understanding of partners' businesses, product differentiation was apparently lost as the food moved down the value chain.

This is where an understanding about consumer held beliefs described in the stacked values framework becomes relevant. Valchuis et al. (2015) found that "to elicit participation in the alternative food system, these [consumer] beliefs must outweigh the barriers, which were found to be price, convenience, lack of knowledge, and cultural norms or routine." Without insight into the unique attributes of the food that differentiated it from conventional produce, consumers likely lacked the necessary motivation to understand or try the box if they experienced it to be too expensive, inconvenient, or difficult to cook.

The full extent to which the structure of F3B was able to overcome challenges inherent to a limited food access environment is still unclear and requires more consumer research and time for model development. That said, it did seem clear that simply stocking fresh produce in new locations without deeper attention to the array of barriers to access is not enough. Similarly to findings in "Moving local food through conventional food system infrastructure: Value chain framework comparisons and insights" (Bloom and Hinrichs, 2010), identifying and achieving a price that was both affordable for consumers (in reality and perception) and profitable for farmers and retailers was difficult and was not achieved in the pilot. Whether or not this is ultimately possible is unclear. However, this is another element where strong communication between partners might have supported experimentation with box size, price, and contents to see if a favorable equilibrium could have been found. Beyond this, as innovation in small scale food sales continues, policy work will need to follow to assure that benefits like food stamps can be used in settings like F3B.

As affirmed by Valchuis et al., the cultural setting, level of convenience, and availability of cooking knowledge seemed to be relevant factors in the pilot. Further adaptation of the ordering and pick-up logistics might have helped to create convenience for consumers while still retaining the benefits that make the model favorable for the value-chain partners. However, because F3B required two visits to the store for pick-up, and because the boxes were largely sold within proximity of other food purveyors (AFS and otherwise), it is likely that the food box was not especially convenient for consumers. A couple of the project sites experimented with stocking some boxes to offer spot sales in response to this issue, and perhaps more experimentation in this vein would help consumers who found the double pick-up a barrier.

Finally, providing information about how to prepare foods was a missing element that might have improved access and retention for F3B. Of the many likely barriers to F3B, information about how to cook the food might have been the simplest to address. Many of the farms reported taking care to educate their customers in their direct to consumer

venues, so it is clear that there was an awareness of these issues at the outset. Had the retailers and farmers discussed this challenge, perhaps they may have been able to respond during the season. However, once again the lack of foundational relationship seems to have impeded even this more simple issue.

References

Abatekassa, Getachew, and H. Christopher Peterson. 2011. Market access for local food through the conventional food supply chain. *International Food and Agribusiness Management Review*.

Amine, E. K., N. H. Baba, M. Belhadj, M. Deurenberg-Yap, A. Djazayery, T. Forrestre, D. A. Galuska et al. 2003. Diet, nutrition and the prevention of chronic diseases. In *World Health Organization - Technical Report Series*.

Andreatta, S, M Rhyne, and N Dery. 2008. Lessons Learned from Advocating CSAs for Low-Income\rand Food Insuecure Households. *Southern Rural Sociology*.

Andreatta, Susan, and William Wickliffe. 2002. Managing farmer and consumer expectations: A study of a North Carolina farmers market. *Human Organization*. doi:10.17730/humo.61.2.a4g01d6q8djj5lkb.

Andreyeva, Tatiana, Ann E. Middleton, Michael W. Long, Joerg Luedicke, and Marlene B. Schwartz. 2010. Food retailer practices, attitudes and beliefs about the supply of healthy foods. *Public Health Nutrition*. doi:10.1017/S1368980011000061.

Baronberg, Sabrina, Lillian Dunn, Cathy Nonas, Rachel Dannefer, and Rachel Sacks. 2013. The impact of New York city's health bucks program on electronic benefit transfer spending at farmers markets, 2006-2009. *Preventing Chronic Disease*. doi:10.5888/pcd10.130113.

Bailey, J. 2010. Rural grocery stores: Importance and challenges Center for Rural Affairs Rural Research and Analysis Program. Lyons, NE: Center for Rural Affairs.

Bauman, A., D. Shideler, D. Thilmany, M. Taylor, and B. Angelo. 2014. An Evolving Classification Scheme of Local Food Bu. *eXtension CLRFS 2014 Food Security Conference*.

Bean, Molly, and Jeff S. Sharp. 2011. Profiling alternative food system supporters: The personal and social basis of local and organic food support. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170511000032.

Beydoun, May A., Lisa M. Powell, and Youfa Wang. 2008. The association of fast food, fruit and vegetable prices with dietary intakes among US adults: Is there modification by family income? *Social Science and Medicine*. doi:10.1016/j.socscimed.2008.01.018.

Blanchard, T., and Lyson, T. 2006. Food availability and food deserts in the nonmetropolitan south. Special Food Assistance Policy Series Number 12, April 2006, Southern Rural Development Center.

Block, Daniel R., Michael Thompson, Jill Euken, Toni Liquori, Frank Fear, and Sherill Baldwin. 2008. Engagement for transformation: Value webs for local food system

development. *Agriculture and Human Values*. doi:10.1007/s10460-008-9113-5.
Bloom, J. Dara, and C. Clare Hinrichs. 2011. Moving local food through conventional food system infrastructure: Value chain framework comparisons and insights. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170510000384.
Bodor, J. Nicholas, Janet C. Rice, Thomas A. Farley, Chris M. Swalm, and Donald Rose. 2010. The association between obesity and urban food environments. *Journal of Urban Health*. doi:10.1007/s11524-010-9460-6.
Booth, Sarah L., James F. Sallis, Cheryl Ritenbaugh, James O. Hill, Leann L. Birch, Lawrence D. Frank, Karen Glanz et al. 2009. Environmental and Societal Factors Affect Food Choice and Physical Activity: Rationale, Influences, and Leverage Points. *Nutrition Reviews*. doi:10.1111/j.1753-4887.2001.tb06983.x.
Brehm, Joan M., and Brian W. Eisenhauer. 2008. Motivations for participating in Community-Supported Agriculture and their relationship with Community Attachment and Social Capital. *Southern Rural Sociology*.
Breitbach, Carrie. 2009. Food and the Mid-Level Farm: Renewing an Agriculture of the Middle - Edited by Thomas A. Lyson, G. W. Stevenson, and Rick Welsh. *Economic Geography*. doi:10.1111/j.1944-8287.2009.01037.x.
Brown, Cheryl, and Stacy Miller. 2008. The impacts of local markets: A review of research on farmers markets and community supported agriculture (CSA). In *American Journal of Agricultural Economics*.
Brown, Elizabeth, Sandrine Dury, and Michelle Holdsworth. 2009. Motivations of consumers that use local, organic fruit and vegetable box schemes in Central England and Southern France. *Appetite*. doi:10.1016/j.appet.2009.06.006.
Buttel, Frederick H. 2005. Ever since Hightower: The politics of agricultural research activism in the molecular age. In *Agriculture and Human Values*.
Ness, C. 2007. Farmers burn out on markets. San Francisco Chronicle, September 19, 2007. http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/09/19/FDAHS186D.DTL.
Clancy, K., and K. Ruhf. 2010. Report on Some Regional Values Chains in the Northeast: 1-20.
Cohen, Nevin, and Dennis Derryk. 2011. Corbin Hill Road Farm Share: A Hybrid Food Value Chain in Practice. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.011.
Colasanti, Kathryn J.A., David S. Conner, and Susan B. Smalley. 2010. Understanding barriers to farmers' market patronage in Michigan: Perspectives from marginalized populations. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2010.504097.
Conner, David, Andrew Nowak, JoAnne Berkenkamp, Gail Feenstra, Julia Van Soelen Kim, Toni Liquori, and Michael Hamm. 2011. Value Chains for Sustainable Procurement in Large School Districts: Fostering Partnerships. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.005.
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*. doi:10.1017/S1742170507002086.

Conner, David S., and Bernice R. Garnett. 2016. Economic and Environmental Drivers of Fruit and Vegetable Intake Among Socioeconomically Diverse Adults in Vermont. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2015.1128862.

Conner, David S., Betty T. Izumi, Toni Liquori, and Michael W. Hamm. 2012. Sustainable school food procurement in large K-12 districts: Prospects for value chain partnerships. In *Agricultural and Resource Economics Review*.

Connolly, Cristina, and H. Allen Klaiber. 2014. Does organic command a premium when the food is already local? *American Journal of Agricultural Economics*. doi:10.1093/ajae/aau030.

Connor, David S., and Ralph Levine. 2016. Circles of association: The connections of community-based food systems. In *Handbook of Applied System Science*.

Cooley, Jack P., and Daniel A. Lass. 1998. Consumer Benefits from Community Supported Agriculture Membership. *Review of Agricultural Economics*. doi:10.2307/1349547.

Curtis, Kynda R, and Ruby A Ward. 2015. Food Consumption , Attitude , and Behavioral Change Among CSA Members : A Northern Utah Case Study 1. *Journal of Food Distribution Research*.

DeLind, Laura B. 1993. Market Niches, 'Cul de Sacs', and Social Context: Alternative Systems of Food Production. *Culture & Agriculture*. doi:10.1525/cuag.1993.13.47.7.

DeMuth, S. 1993. Community supported agriculture (CSA): an annotated bibliography and resource guide. Agri-topics (USA).

Diamond, Adam, and James Barham. 2011. Money and Mission: Moving Food with Value and Values. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.013.

Diez Roux, Ana V. 2003. Residential Environments and Cardiovascular Risk. In *Journal of Urban Health*.

Diez Roux, Ana V., Sharon Stein Merkin, Donna Arnett, Lloyd Chambless, Mark Massing, F. Javier Nieto, Paul Sorlie, Moyses Szklo, Herman A. Tyroler, and Robert L. Watson. 2001. Neighborhood of residence and incidence of coronary heart disease. *New England Journal of Medicine*. doi:10.1056/NEJM200107123450205.

Dollar Store Impacts. (n.d.). Retrieved November 18, 2019, from ww.ilsr.org/dollar-stores.

DuPuis, E. Melanie, and David Goodman. 2005. Should we go "home" to eat?: Toward a reflexive politics of localism. *Journal of Rural Studies*. doi:10.1016/j.jrurstud.2005.05.011.

Eikenberry, Nicole, and Chery Smith. 2005. Attitudes, beliefs, and prevalence of dumpster diving as a means to obtain food by Midwestern, low-income, urban

dwellers. *Agriculture and Human Values*. doi:10.1007/s10460-004-8278-9.
Feenstra, 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*. doi:10.5304/jafscd.2011.014.009.
Feldmann, Corinna, and Ulrich Hamm. 2015. Consumers' perceptions and preferences for local food: A review. In *Food Quality and Preference*.
Freedman, Marjorie R., and Juliana K. King. 2016. Examining a New "Pay-as-You-Go" Community-Supported Agriculture (CSA) Model: A Case Study. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2015.1045671.
Giskes, K., F. van Lenthe, M. Avendano-Pabon, and J. Brug. 2011. A systematic review of environmental factors and obesogenic dietary intakes among adults: Are we getting closer to understanding obesogenic environments? *Obesity Reviews*. doi:10.1111/j.1467-789X.2010.00769.x.
Goodall, J., G. McAvoy, and G. Hudson. 2005. Harvest for hope: A guide to mindful eating. Grand Central Publishing.
Greer, L. 1999. Community supported agriculture. Business Management Series. Fayetteville, AR: Appropriate Technology Transfer for Rural Areas (ATTRA).
Hanson, Karla L., Jane Kolodinsky, Weiwei Wang, Emily H. Morgan, Stephanie B. Jilcott Pitts, Alice S. Ammerman, Marilyn Sitaker, and Rebecca A. Seguin. 2017. Adults and children in low-income households that participate in cost-offset community supported agriculture have high fruit and vegetable consumption. *Nutrients*. doi:10.3390/nu9070726.
Hanson, K. L., Garner, J., Connor, L. M., Pitts, S. B. J., McGuirt, J., Harris, R., ... & Seguin, R. A. 2019. Fruit and Vegetable Preferences and Practices May Hinder Participation in Community-Supported Agriculture Among Low-Income Rural Families. Journal of nutrition education and behavior, 51(1), 57-67.han
Hardesty, S. 2007. Producer returns in alternative marketing channels. Small Farms Program, Department of Agriculture and Resource Economics. University of California–Davis. Available at Web site http://www. sfc. ucdavis. edu/events/07hardesty. pdf (verified 23 March 2009).
Harmon. 2014. Community supported agriculture: A conceptual model of health implications. Austin J. Nutr. Food Sci. 2014, 2, 1024. [Google Scholar]
Heffernan, William D., and Douglas H. Constance. 1994. Transnational Corporations and the Globalization of the Food System. *From Columbus to ConAgra: The Globalization of Agriculture and Food*.
Hendrickson, Deja, Chery Smith, and Nicole Eikenberry. 2006. Fruit and vegetable access in four low-income food deserts communities in Minnesota. *Agriculture and Human Values*. doi:10.1007/s10460-006-9002-8.
Hinrichs, C. Clare. 2003. The practice and politics of food system localization. In *Journal of Rural Studies*.
Hoppe, R., MacDonald, J., and Korb. P., 2010. Small Farms in the United States: Persistence Under Pressure (Economic Research Service, Trans.). Washington,

DC: USDA ERS.
Hoshide, A. K. 2007. Values-Based & Value-Added Value Chains in the Northeast, Upper Midwest, and Pacific Northwest (pp. 1-13). Orono, ME: University of Maine.
Jablonski, Becca, Javier Perez-Burgos, and Miguel Gómez. 2011. Food Value Chain Development in Central New York: CNY Bounty. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.015.
Jilcott, Stephanie B., Haiyong Liu, Justin B. Moore, Jeffrey W. Bethel, James Wilson, and Alice S. Ammerman. 2010. Commute times, food retail gaps, and body mass index in North Carolina Counties. *Preventing Chronic Disease*.
Kane, D., Lohr, L. 1997. Maximizing Shareholder Retention in Southeastern CSAs: A Step Toward Long Term Stability; Organic Farming Research Foundation: Santa Cruz, CA, USA.
Kaufman, Pr. 1999. Rural poor have less access to supermarkets, large grocery stores. *Rural Development Perspectives*.
Kimbrell, Andrew, and Kim Marie Pezza. 2003. Fatal Harvest: The tragedy of industrial agriculture. In *Electronic Green Journal*.
King, Rp, and L Venturini. 2005. Demand for Quality Drives Changes in Food Supply Chains. *New Directions in Global Food Markets*.
Kolodinsky, Jane M., and Leslie L. Pelch. 1997. Factors influencing the decision to join a community supported agriculture (csa) farm. *Journal of Sustainable Agriculture*. doi:10.1300/J064v10n02_11.
L.V., Moore, Diez Roux A.V., Nettleton J.A., and Jacobs D.R. 2008. Associations of the local food environment with diet quality - A comparison of assessments based on surveys and geographic information systems. In *American Journal of Epidemiology*.
Landis, Bill, Tracy Entwisle Smith, Maura Lairson, Kerbie Mckay, Heather Nelson, and Jason O'Briant. 2010. Community-supported agriculture in the research triangle region of North Carolina: Demographics and effects of membership on household food supply and diet. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320240903574403.
Larson, Nicole I., Mary T. Story, and Melissa C. Nelson. 2009. Neighborhood Environments. Disparities in Access to Healthy Foods in the U.S. In *American Journal of Preventive Medicine*.
Lasley, Paul, and Linda Labao. 1991. Locality and Inequality: Farm and Industry Structure and Socioeconomic Conditions. *Social Forces*. doi:10.2307/2580092.
Lea, Emma, Jodi Phillips, Madeleine Ward, and Anthony Worsley. 2006. Farmers' and consumers' beliefs about community-supported agriculture in Australia: A qualitative study. *Ecology of Food and Nutrition*. doi:10.1080/03670240500530592.
Lerman, Tracy. 2012. A Review of Scholarly Literature on Values-Based Supply Chains. *Sustainable Agriculture Research and Education Program, Agricultural Sustainability Institute, University of California, Davis*.

doi:10.1007/s11746-015-2611-x.
Leroux, M. N., T. M. Schmit, M. Roth, and D. H. Streeter. 2010. Evaluating marketing channel options for small-scale fruit and vegetable producers. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170509990275.
Liese, Angela D., Kristina E. Weis, Delores Pluto, Emily Smith, and Andrew Lawson. 2007. Food Store Types, Availability, and Cost of Foods in a Rural Environment. *Journal of the American Dietetic Association*. doi:10.1016/j.jada.2007.08.012.
Lindsay, Suzanne, Jennifer Lambert, Tanya Penn, Susan Hedges, Kristine Ortwine, Anchi Mei, Tracy Delaney, and Wilma J. Wooten. 2013. Monetary matched incentives to encourage the purchase of fresh fruits and vegetables at farmers markets in underserved communities. *Preventing Chronic Disease*. doi:10.5888/pcd10.130124.
Lopez, Russ P. 2007. Neighborhood risk factors for obesity. *Obesity*. doi:10.1038/oby.2007.251.
Lovasi, Gina S., Malo A. Hutson, Monica Guerra, and Kathryn M. Neckerman. 2009. Built environments and obesity in disadvantaged populations. *Epidemiologic Reviews*. doi:10.1093/epirev/mxp005.
Lyson, Thomas A. 2000. Moving toward civic agriculture. *Choices*.
Lyson, Thomas A., and Amy Guptill. 2004. Commodity agriculture, civic agriculture and the future of U.S. farming. *Rural Sociology*. doi:10.1526/0036011041730464.
Lyson, Thomas A., and Rick Welsh. 2005. Agricultural industrialization, anticorporate farming laws, and rural community welfare. *Environment and Planning A*. doi:10.1068/a37142.
MacMillan Uribe, Alexandra L., Donna M. Winham, and Christopher M. Wharton. 2012. Community supported agriculture membership in Arizona. An exploratory study of food and sustainability behaviours. *Appetite*. doi:10.1016/j.appet.2012.06.002.
McCormack, Lacey Arneson, Melissa Nelson Laska, Nicole I. Larson, and Mary Story. 2010. Review of the Nutritional Implications of Farmers' Markets and Community Gardens: A Call for Evaluation and Research Efforts. *Journal of the American Dietetic Association*. doi:10.1016/j.jada.2009.11.023.
McEntee, Jesse. 2010. Contemporary and traditional localism: A conceptualisation of rural local food. *Local Environment*. doi:10.1080/13549839.2010.509390.
McEntee, Jesse, and Julian Agyeman. 2010. Towards the development of a GIS method for identifying rural food deserts: Geographic access in Vermont, USA. *Applied Geography*. doi:10.1016/j.apgeog.2009.05.004.
Minaker, Leia M., Kim D. Raine, Pat Fisher, Mary E. Thompson, Josh Van Loon, and Lawrence D. Frank. 2014. Food Purchasing From Farmers' Markets and Community-Supported Agriculture Is Associated With Reduced Weight and Better Diets in a Population-Based Sample. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2014.898175.
Morgan, Emily H., Michelle M. Severs, Karla L. Hanson, Jared McGuirt, Florence Becot, Weiwei Wang, Jane Kolodinsky et al. 2018. Gaining and maintaining a competitive edge: Evidence from CSA members and farmers on local food

marketing strategies. *Sustainability (Switzerland)*. doi:10.3390/su10072177.
Morland, Kimberly, Ana V. Diez Roux, and Steve Wing. 2006. Supermarkets, other food stores, and obesity: The Atherosclerosis Risk in Communities Study. *American Journal of Preventive Medicine*. doi:10.1016/j.amepre.2005.11.003.
Morland, Kimberly, Steve Wing, Ana Diez Roux, and Charles Poole. 2002. Neighborhood characteristics associated with the location of food stores and food service places. *American Journal of Preventive Medicine*. doi:10.1016/S0749-3797(01)00403-2.
Morland, Kimberly, Steve Wing, and Ana Diez Roux. 2002. The contextual effect of the local food environment on residents' diets: The atherosclerosis risk in communities study. *American Journal of Public Health*.
Morton, Lois Wright, Ella Annette Bitto, Mary Jane Oakland, and Mary Sand. 2005. Solving the problems of Iowa food deserts: Food insecurity and civic structure. *Rural Sociology*. doi:10.1526/0036011053294628.
Morse, C. 2018. The Multifunctionality of Country Stores: Insights on Resilience from Rural Vermont. Geographical Review, 108(3), 457-475.
Morton, L., and Blanchard, T. 2007. Starved for Access: Life in Rural America's Food Deserts. Rural Realities.
Murdoch, Jonathan, Terry Marsden, and Jo Banks. 2000. Quality, nature, and embeddedness: Some theoretical considerations in the context of the food sector. *Economic Geography*. doi:10.1111/j.1944-8287.2000.tb00136.x.
Ness, Andrew R., and John W. Powles. 1997. Fruit and vegetables, and cardiovascular disease: A review. In *International Journal of Epidemiology*.
Nestle, Marion. 2013. Food politics: How the food industry influences nutrition and health. *Food Politics: How the Food Industry Influences Nutrition and Health*.
O'Brien, M. 2008. Small Town Grocers in Iowa: What Does the Future Hold? (No. 12970). Iowa State University, Department of Economics.
O'Malley, Keelia, Jeanette Gustat, Janet Rice, and Carolyn C. Johnson. 2013. Feasibility of increasing access to healthy foods in neighborhood corner stores. *Journal of Community Health*. doi:10.1007/s10900-013-9673-1.
Painter, K. 2007. An Analysis of Food-Chain Demand for Differentiated Farm Commodities: Implications for the Farm Sector (Center for Sustaining Ag & Natural Resources, Trans.).
Parsons, R. 2007. A victim of its own success? Los Angeles Times, April 11. Available at Web site http://articles.latimes.com/2007/apr/11/food/fo-farmers11 (accessed November 3, 2009).
Perez, J., Allen, P.; Brown, M. 2003. Community supported agriculture on the central coast: the CSA member experience. Cent. Agroecol. Sustain. Food Syst.
Pole, Antoinette, and Margaret Gray. 2013. Farming alone? What's up with the "C" in community supported agriculture. *Agriculture and Human Values*. doi:10.1007/s10460-012-9391-9.
Pole, Antoinette, and Archana Kumar. 2015. Segmenting CSA members by motivation: Anything but two peas in a pod. *British Food Journal*.

doi:10.1108/BFJ-12-2014-0405.
Pollan, M. 2016. Why Did the Obamas Fail to Take On Corporate Agriculture? *The NewYork Times.* Retrieved March 08, 2018, from https://www.nytimes.com/interactive/2016/10/09/magazine/obama-administration-big-food-policy.html
Porter, Micheal E. 1985. Competitive strategy: Creating and sustaining superior performance. In *Creating and Sustaining Competitive Advantage*.
Powell, Lisa M., M. Christopher Auld, Frank J. Chaloupka, Patrick M. O'Malley, and Lloyd D. Johnston. 2007. Associations Between Access to Food Stores and Adolescent Body Mass Index. *American Journal of Preventive Medicine*. doi:10.1016/j.amepre.2007.07.007.
Powell, Lisa M., Sandy Slater, Donka Mirtcheva, Yanjun Bao, and Frank J. Chaloupka. 2007. Food store availability and neighborhood characteristics in the United States. *Preventive Medicine*. doi:10.1016/j.ypmed.2006.08.008.
Pullman, Madeleine E., and Jesse Dillard. 2010. Values based supply chain management and emergent organizational structures. *International Journal of Operations and Production Management*. doi:10.1108/01443571011057326.
Reddy, K Srinath, and Martijn B Katan. 2004. Diet, nutrition and the prevention of hypertension and cardiovascular diseases. *Public Health Nutrition*. doi:10.1079/phn2003587.
Reed, M. 2004. Bringing the food economy home: Local alternatives to global agribusiness. *Environmental Politics*.
Renting, Henk, Terry K. Marsden, and Jo Banks. 2003. Understanding alternative food networks: Exploring the role of short food supply chains in rural development. *Environment and Planning A*. doi:10.1068/a3510.
Richards, Rickelle, and Chery Smith. 2006. Shelter environment and placement in community affects lifestyle factors among homeless families in Minnesota. *American Journal of Health Promotion*. doi:10.4278/0890-1171-21.1.36.
Robert, Stephanie A., and Eric N. Reither. 2004. A multilevel analysis of race, community disadvantage, and body mass index among adults in the US. *Social Science and Medicine*. doi:10.1016/j.socscimed.2004.03.034.
Rose, Donald, and Rickelle Richards. 2004. Food store access and household fruit and vegetable use among participants in the US Food Stamp Program. *Public Health Nutrition*. doi:10.1079/phn2004648.
Rothstein, Matthew. (2019) E-commerce Hasn't Slammed Grocery Stores Yet, But It May Bleed Them Dry Over Time. https://www.bisnow.com/national/news/retail/grocery-retail-ecommerce-amazon-whole-foods-97072
Russell, Willow Saranna, and Lydia Zepeda. 2008. The adaptive consumer: Shifting attitudes, behavior change and CSA membership renewal. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170507001962.
Sage, Colin. 2003. Quality in Alternative Food Networks: Conventions, Regulations and Governance. In *International Seminar Policies Governance and Innovation for Rural Areas*.

Schmidt, Michele, Jane Kolodinsky, Thomas DeSisto, and Faye Conte. 2011. Increasing Farm Income and Local Food Access: A Case Study of a Collaborative Aggregation, Marketing, and Distribution Strategy That Links Farmers to Markets. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.017.

Selfa, Theresa, and Joan Qazi. 2005. Place, taste, or face-to-face? Understanding producer-consumer networks in "local" food systems in Washington State. *Agriculture and Human Values*. doi:10.1007/s10460-005-3401-0.

Shaikh, Abdul R., Amy L. Yaroch, Linda Nebeling, Ming Chin Yeh, and Ken Resnicow. 2008. Psychosocial Predictors of Fruit and Vegetable Consumption in Adults. A Review of the Literature. In *American Journal of Preventive Medicine*.

Sharp, Jeff, Eric Imerman, and Greg Peters. 2002. Community Supported Agriculture (CSA): Building community among farmers and non-farmers. *Journal of Extension*.

Shiva, Vandana. 2014. Seeds of Suicide: The Ecological and Human Costs of the Globalization of Agriculture. In *The Vandana Shiva Reader*.

Shiva, Vandana, and Afsar Jafri. 2004. Failure of GMOs in India. *Research Foundation for Science, Technology and Ecology*.

Silva, Erin, Fengxia Dong, Paul Mitchell, and John Hendrickson. 2015. Impact of marketing channels on perceptions of quality of life and profitability for Wisconsin's organic vegetable farmers. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170514000155.

Sitaker, M., Kolodinsky, J., Pitts, S. J., & Seguin, R. 2014. Do entrepreneurial food systems innovations impact rural economies and health? Evidence and gaps. American journal of entrepreneurship, 7(2), 3.

Sitaker, M., McGuirt, J. T., Wang, W., Kolodinsky, J., & Seguin, R. A. 2019. Spatial Considerations for Implementing Two Direct-to-Consumer Food Models in Two States. Sustainability, 11(7), 2081.

Small, M. L., and M. McDermott. 2006. The Presence of Organizational Resources in Poor Urban Neighborhoods: An Analysis of Average and Contextual Effects. *Social Forces*. doi:10.1353/sof.2006.0067.

Smith, Chery, and Lois W. Morton. 2009. Rural Food Deserts: Low-income Perspectives on Food Access in Minnesota and Iowa. *Journal of Nutrition Education and Behavior*. doi:10.1016/j.jneb.2008.06.008.

Sproul, Thomas W., and Jaclyn D. Kropp. 2015. A General Equilibrium Theory of Contracts in Community Supported Agriculture. In *American Journal of Agricultural Economics*.

Steinmetz, K. A., Potter, J. D. 1996. Vegetables, fruit, and cancer prevention: a review. Journal of the American Dietetic Association, 96(10), 1027-1039.

Stevenson, G. W., and Rich Pirog. 2013. Values-Based Supply Chains: Strategies for Agrifood Enterprises of the Middle. In *Food and the Mid-Level Farm*.

Stevenson, Steve, and Cias June. 2009. Values-based food supply chains : Executive Summary, Country Natural Beef, CROPP/Organic Valley, Shepherd's Grain and

Red Tomato. *Director*.
Stoffle, Richard W. 1972. Whither the Country Store? *Ethnohistory*. doi:10.2307/481345.
Timperio, Anna, Kylie Ball, Rebecca Roberts, Karen Campbell, Nick Andrianopoulos, and David Crawford. 2008. Children's fruit and vegetable intake: Associations with the neighbourhood food environment. *Preventive Medicine*. doi:10.1016/j.ypmed.2007.11.011.
Tropp, D. 2013. Why Local Food Matters: The Rising Importance of Locally-Grown Food in the US Food System; No. 160752; United States Department of Agriculture: Washington, DC, USA.
United States Department of Agriculture, National Agricultural Statistics Service (USDA/NASS). 2012 Census of Agriculture—Summary and Stated Data; USDA/NASS: Washington, DC, USA, 2014.
US Department of Agriculture; National Agricultural Statistics Service. 2015 Local Food Marketing Practices Survey; U.S. Department of Agriculture: Washington, DC, USA, 2015.
Valchuis, Laurel, David S. Conner, Linda Berlin, and Qingbin Wang. 2015. Stacking Beliefs and Participation in Alternative Food Systems. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2015.1004211.
Vassalos, Michael, Zhifeng Gao, and Lisha Zhang. 2017. Factors affecting current and future CSA participation. *Sustainability (Switzerland)*. doi:10.3390/su9030478.
Wengraf, Tom. 2001. Qualitative research interviewing: Biographic Narrative and Semi-Structured Methods. *SAGE Publication*. doi:10.4135/9781849209717.
Wilkins, Jennifer L., Tracy J. Farrell, and Anusuya Rangarajan. 2015. Linking vegetable preferences, health and local food systems through community-supported agriculture. *Public Health Nutrition*. doi:10.1017/S1368980015000713.
Yeh, Ming Chin, Scott B. Ickes, Lisa M. Lowenstein, Kerem Shuval, Alice S. Ammerman, Rosanne Farris, and David L. Katz. 2008. Understanding barriers and facilitators of fruit and vegetable consumption among a diverse multi-ethnic population in the USA. *Health Promotion International*. doi:10.1093/heapro/dam044.
Zajfen, Vanessa. 2008. Fresh Food Distribution Models for the Greater Los Angeles Region. Barriers and Opportunities to Facilitate and Scale up the Distribution of Fresh Fruits and Vegetables. *Center for Food & Justice. Urban & Environmental Policy Institute. Occidental College.*
Zenk, Shannon N., Amy J. Schulz, and Angela M. Odoms-Young. 2009. How neighborhood environments contribute to obesity. *American Journal of Nursing*. doi:10.1097/01.NAJ.0000357175.86507.c8.
Zepeda, Lydia, and Jinghan Li. 2006. Who buys local food? *Journal of Food Distribution Research*.

CHAPTER 3: FARM FRESH FOOD BOXES: PILOT STUDY FINDINGS OF FARMER – RURAL RETAILER PARTNERS

Abstract
The Farm Fresh Food Box (F3B) is a market innovation that partners farmers and rural retailers to improve rural food access. This article reviews an applied research project with a goal of understanding of potential of this new model, based on the pilot season. Findings are used to illuminate major challenges and associated learning opportunities. These findings and their implications for Extension are included in this study and will be used to inform future iterations of F3B trials.

Keywords: local food, direct-to-consumer, value-chains, rural food access, food systems

Background Literature

Transformation in the American food system has challenged small and mid-sized farmer and independent grocer viability (Andreatta, 2008, Jilcott et al., 2010; Bailey 2010; Stoffle, 1972), and thereby threatened the vibrancy of rural communities who not only lack the social anchor of their independent stores, but also experience reduced food access, a factor strongly linked to health and well-being (Jilcott et al., 2010; Smith and Morton, 2009; Kaufman, 1999; Morton et al., 2005; Hendrickson et al., 2006; Richards and Smith, 2006; Morland et al., 2002; Eikenberry and Smith, 2005; Liese et al., 2007; Blanchard and Lyson, 2006). Several alternative food system innovations have evolved in response to these challenges, including direct to consumer (DTC) strategies like farmers' markets, farm stands, and CSAs; value-chain partnerships like farm-to-school; and non-market food systems like community gardening. These venues support the growing and consumption of food with embedded qualities that can be missing in industrial supply chains, such as improved nutritional quality and taste, specific growing practices and animal welfare standards, farmer and worker well-being, and environmental stewardship (Valchuis et al., 2015; Murdoch et al.; Sage, 2003; Selfa et al., 2005; Sitaker et al., 2014).

DTC markets have experienced significant growth in the past several decades, and have been a helpful market niche for small farms that excludes their larger counterparts. Within these markets, farms are able to differentiate their food and farming practices through the direct relationship with their consumers and thus charge higher prices that better reflect the real cost of production (Colasanti et al., 2010; Conner and Levine, 2007; Andreatta and Wickliffe, 2002; Andreatta et al., 2008, Schmidt et al., 2011; Conner et al., 2016; Lobao, 1990; Hardesty, 2007; Lyson and Guptill, 2004; Lyson, 2000). That said, DTC market channels also have limited consumer reach as they can require more money and effort to access, and are often subject to geographic and cultural boundaries (McEntee, 2010; DeLind, 1993; Hinrichs, 2003; Dupuis and Goodman, 2005). In an effort to expand beyond the constraints of DTC, farms have begun to merge aspects of

DTC with traditional supply chains to form value-chains relationships. Within these, businesses form cooperative partnerships to support the distribution of value-differentiated products (Conner et al., 2012; Lerman, 2012; Stevenson and Pirog, 2008). Successful value-chain relationships rely on relationships of mutual regard based on shared values, fair, stable pricing of differentiated products and co-learning, trust and communication between partners (Conner et al., 2012). These models can be challenging for organizations not used to so much collaborative work.

Farm Fresh Food Boxes (F3B) is one such value-chain innovation that links farmers with rural retail venues to offer weekly boxes of fresh produce (Smith et al., 2018). From the farmer's perspective, F3B functions like Community Supported Agriculture (CSA) but does not require season-long commitments from consumers. From the rural consumer's perspective, F3B may serve as a supplementary opportunity for DTC purchases and increased access to fresh produce. The model may also prove beneficial to small retailers who lack equipment to stock fresh produce or worry it will go bad before it sells. The project is being conducted as a research and extension collaboration involving partners from the University of Vermont (UVM), Washington State University (WSU), Evergreen State College, and the University of California (UC). Findings from the 2017 pilot phase of the project, involving 3 farmer-retailer pairs in a northeastern state and 3 farmer-retailer pairs in a western state, are shared here.

Methods

F3B is an ongoing research and extension project that explores the impact of a food distribution innovation on rural economies. In spring of 2017, the extension team engaged 6 farmer-retailer pairs in the northeastern and western U.S. to trial a full-season F3B pilot project. Extension professionals worked to match farmers with rural country stores, convenience stores or gas stations that were proximal to the farm and did not already offer much fresh produce. Extension also facilitated project logistics between farm-store partners and provided tailored marketing materials and technical support throughout the season. They served as a liaison between researchers and project partners to guide research development and data collection. The extension and research teams worked collaboratively to develop research instruments to assess project outcomes. The three primary data collection tools were pre-season firmographic surveys, tracking spreadsheets, and postseason semi-structured interviews.

During the first full F3B pilot season, farmers offered weekly boxes of produce with seasonal content. Retailers advertised F3B, took weekly orders, relayed box orders to farmers, and served as pick-up locations. Farmers dropped off the prepaid boxes every week, and customers returned for pick-up. Each farmer-retailer pair determined order and pick-up times; farmers set box sizes and price. These elements varied by location, community demographics and store culture.

This study describes findings from three research instruments. Participating farmers and retailers filled out a pre-season online firmographic survey administered through

Limesurvey (2018), recorded sales data throughout the season in tracking spreadsheets, and participated in a post-season in-depth qualitative interview (Wengraf, 2001). We triangulated research findings after an independent analysis of data from each instrument.

We coded results from the in-depth interviews using the qualitative analysis software NVivo. We created a codebook based on the value-chain model developed by Conner et al. (2011), which describes three sets of behaviors that characterize value-chain partnerships: (a) relationships of mutual regard based on shared values; (b) co-learning, trust and communication, and (c) fair, stable pricing of differentiated products (Bloom and Hinrichs, 2011; Conner et al.,2012). We also considered a set of barriers that frequently limit the success of alternative food system innovations: high price, lack of convenience, and lack of consumer knowledge (Sharp et. al., 2002), and further categorized the data to identify challenges and associated learning opportunities according to the emergent themes.

Results

All three northeastern farms are small operations, employing 6-14 full time seasonal workers, with most of their production in diversified vegetables. Similarly, the three western farms are small, with 2-4 full-time seasonal employees. In each state, two of the three farms operate CSAs, and all use a mix of direct and wholesale markets. Given their existing structures, all farms tried F3B without making major changes to their businesses.

In the northeast, the retailers were a farm and feed store, a chain gas station/convenience store, and a general store (Table 1). In the west, one retailer was a general store and two were chain gas stations/convenience stores. Retailer similarities included rural location, lack of significant produce section, and regular foot-traffic with low-value sales. All retailers were 1/2 mile or less from another store selling produce, and many were a short distance from weekly farmers' market venues.

Table 1 summarizes food box sales across the six sites. Sites varied in the challenges they experienced in establishing partnerships, the start and duration of their growing season, and communication barriers. This in turn affected how long F3B was implemented, which varied from 1 to 6 months. Accordingly, total box sales ranged from 5 to 139 boxes, averaging 1-6 boxes per week.

Table 1.
Farm Fresh Food Box pilot season box sales

Farmer	Retailer	Retailer description	Weeks in the project	Total box sales	Average box sales per week
NE1	NE1A	farm and feed store	4	5	1.3
NE2	NE2B	gas station / convenience store	8	15	1.9
NE3	NE4A	general store	6	12	2.0
W1	W1B	general store	24	139	5.7
W2	W2A	gas station / convenience store	16	10	0.6
W3	W3A	gas station / convenience store	4	10	2.5

Note. NE1, NE2, NE3 represent farms in the northeastern state and NE1A, NE2B, NE4A represent these farms' retail partners, respectively. Similarly, W1, W2, W3 represent farms in the western state and W1B, W2A, W3A represent these farms' respective retail partners.

Despite lower than anticipated sales at all but one location, the widely varying outcomes provided rich data to inform future iterations and similar DTC innovations. Triangulation of firmographic survey responses, sales data, and interview responses resulted in three emergent areas of challenge and associated learning opportunities: (a) the farmer-retailer relationship; (b) value-differentiation, and (c) retailer context. These ideas are further detailed in Table 2.

Table 2. F3B pilot season challenges and associated learning opportunities

Areas of concern	Challenges	Learning opportunities
Partner Relationship	Small farmers and business owners are busy, with differing and demanding workflows.	Farmers and retailers should have shared values and should work around differing work-flows to coordinate their efforts.
	Partners did not have an understanding of one another's business models.	Partners should meet prior to the season to determine F3B logistics and establish expectations, particularly concerning marketing responsibilities.
	Consistent, clear communication was difficult for many farmer-retailer pairs.	Partners should establish a communication plan.
Value differentiation	Farmers were uncertain they could rely on retailers to represent and market their products.	The farmer or retailer needs to "hold" the consumer relationship; retailers may need to promote the farm's brand
	The unique identities of the farms and their food was lost as it moved down the value chain.	Farmers can reinforce their brand through establishing relationships with customers, including at DTC venues outside of F3B.
	As produce boxes were not stocked in the store, retailers found it difficult to promote a product that was not physically present.	Farmers should assist with marketing and educate retail partners about their farm and food.

Retail Context	F3B was situated in a retail context of convenience food, beverages, and conventional produce and appeared expensive by comparison.	Partners should size and price boxes with the environment of the retail store in mind Farmers should partner with retailers that maintain regular customers and have a retail culture where people linger or expect to buy food.
	Competition from nearby grocery stores, farmers' markets, and vegetable stands may have affected F3B implementation.	Farmers should consider partnering with retailers away from competing grocery stores, farmers' markets or farm stands. Alternatively, farms could find ways to establish value differentiation
	Some customers did not know what to do with the produce.	Partners should include recipes and information about vegetable preparation.
	Retailers cannot accept SNAP benefits for food that is pre-sold.	Partners should explore acceptable methods for retailers to accept prepayment of SNAP benefits.

The quality of the farmer-retailer relationship appeared to be a critical component of success, as it determined the project pair's ability to understand one another's needs and products as well as their ability persevere through challenges. Relationship quality was closely linked to the extent to which the farmer perceived that the retailer was able to convey the unique qualities of the farm's food to the consumer. This appeared to be a widespread and persistent issue, given the lack of direct farmer-consumer interaction. Finally, retail contextual factors influenced the success of each given retailer. These factors included store culture, existing product offerings and the nearby grocery options in the community. The pilot site with the most success as measured by box sales differed consistently from the rest in each of these aspects. In this case, the retailer and farmer

were neighbors with an interest in creating a working relationship, the retailer was described as a "mom and pop" store that maintained relationships with its customers, and the retail owners had themselves been a part of a CSA in the past.

Implications for Extension

Below we summarize implications for Extension personnel looking to replicate or improve upon the F3B concept:

- Extension should focus on making effective matches between retail and farm partners and should work to nurture strong relationships between them. Partners should share some similar values, have compatible workflows, and most importantly should share a desire for the project to work and a commitment to working through early challenges.
- Extension should be open to partners needs and be ready to draw upon the F3B concepts while also focusing on the specific context and capacities of each pair to support a project structure that the partners are enthusiastic about.
- Partners should meet at the beginning of the season in person to co-create project logistics, discuss their communications needs (preferences, availability, etc.), and share about their businesses' values and goals.
- Partnership depth should extend beyond the owners and include employees. Extension should explore ways to expose the retail team to who the farm is, and it may help to offer subsidized boxes of produce to the retailers' employees to give them a better sense of what they are selling.
- Retail location is important. Extension should consider the potential impact of community size, demographics, and proximity of grocery stores, farmers' markets, or farm stands near retail sites.
- Extension should help partners experiment with the box size, price, and contents in order to fit into the retail context of the store and surrounding community. It may help to begin with smaller boxes that are more affordable and offer staple produce items.
- Extension should assist with or encourage consumer education about how to prepare box contents.
- Marketing efforts should begin early, should be timed with box availability, and should communicate the unique values of the food with a focus on differentiating it from conventional alternatives.

Conclusion

Despite widespread growth in farmers' markets and CSAs, local foods sold through direct and intermediated channels still make up only 8% of food sales (Low, et al., 2015). Innovations in the alternative food space are rapidly evolving at the hands of entrepreneurial farmers and business owners. F3B is one such innovation that attempts to bridge traditional DTC models with small-scale value chain partnerships to further broaden and strengthen the local food market. Learnings from this pilot project can

inform future iterations and similar value-chain models. As a model spanning both the DTC and value-chain structures, it affirms the importance of producer-retailer value chain relationships, clear communication of the unique and embedded values of food as it moves down the value chain, and careful consideration of contextual factors that affect how food is perceived in new venues.

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References

(2018). *LimeSurvey Overview.* Retrieved from https://www.uvm.edu/it/survey/?Page=overview.php.

Andreatta, S., Rhyne, M., & Dery, N. (2008). Lessons Learned from Advocating CSAs for Low-Income\rand Food Insuecure Households. *Southern Rural Sociology*.

Andreatta, S., & Wickliffe, W. (2002). Managing farmer and consumer expectations: A study of a North Carolina farmers market. *Human Organization*. doi:10.17730/humo.61.2.a4g01d6q8djj5lkb

Bailey, J. 2010. Rural grocery stores: Importance and challenges Center for Rural Affairs Rural Research and Analysis Program. Lyons, NE: Center for Rural Affairs.

Blanchard, T., & Lyson, T. 2006. Food availability and food deserts in the nonmetropolitan south. Special Food Assistance Policy Series Number 12, April 2006, Southern Rural Development Center.

Bloom, J. D., and Hinrichs, C. C. (2011). Moving local food through conventional food system infrastructure: Value chain framework comparisons and insights. Renewable Agriculture and Food Systems, 26(1), 13-23.

Colasanti, K. J. A., Conner, D. S., & Smalley, S. B. (2010). Understanding barriers to farmers' market patronage in Michigan: Perspectives from marginalized populations. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2010.504097

Conner, D. S., Izumi, B. T., Liquori, T., & Hamm, M. W. (2012). Sustainable school food procurement in large K-12 districts: Prospects for value chain partnerships. *Agricultural and Resource Economics Review*.

Conner, D. S., & Garnett, B. R. (2016). Economic and Environmental Drivers of Fruit and Vegetable Intake Among Socioeconomically Diverse Adults in Vermont. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2015.1128862

Connor, David S., and Ralph Levine. 2016. Circles of association: The connections of community-based food systems. In *Handbook of Applied System Science*

DeLind, L. B. (1993). Market Niches, 'Cul de Sacs', and Social Context: Alternative Systems of Food Production. *Culture & Agriculture*. doi:10.1525/cuag.1993.13.47.7

DuPuis, E. M., & Goodman, D. (2005). Should we go "home" to eat?: Toward a reflexive politics of localism. *Journal of Rural Studies*. doi:10.1016/j.jrurstud.2005.05.011

Eikenberry, N., & Smith, C. (2005). Attitudes, beliefs, and prevalence of dumpster diving as a means to obtain food by Midwestern, low-income, urban dwellers. *Agriculture and Human Values*. doi:10.1007/s10460-004-8278-9

Hardesty, S. 2007. Producer returns in alternative marketing channels. Small Farms Program, Department of Agriculture and Resource Economics. University of California–Davis. Available at Web site http://www. sfc. ucdavis. edu/events/07hardesty. pdf (verified 23 March 2009).

Hendrickson, D., Smith, C., & Eikenberry, N. (2006). Fruit and vegetable access in four low-income food deserts communities in Minnesota. *Agriculture and Human Values*. doi:10.1007/s10460-006-9002-8

Jilcott, S. B., Liu, H., Moore, J. B., Bethel, J. W., Wilson, J., & Ammerman, A. S. (2010). Commute times, food retail gaps, and body mass index in North Carolina Counties. *Preventing Chronic Disease*.

Kaufman, P. (1999). Rural poor have less access to supermarkets, large grocery stores. *Rural Development Perspectives*.

Lerman, T. (2012). A Review of Scholarly Literature on Values-Based Supply Chains. *Sustainable Agriculture Research and Education Program, Agricultural Sustainability Institute, University of California, Davis*. doi:10.1007/s11746-015-2611-x

Liese, A. D., Weis, K. E., Pluto, D., Smith, E., & Lawson, A. (2007). Food Store Types, Availability, and Cost of Foods in a Rural Environment. *Journal of the American Dietetic Association*. doi:10.1016/j.jada.2007.08.012

Low, S.A., Adalja, A., Beaulieu, E., Key, N., Martinez, S., Melton, A., Perez, A., Ralston, K., Stewart, H., Suttles, S. and Jablonski, B.B. (2015). Trends in US local and regional food systems: A report to Congress.

Lyson, T. A., & Guptill, A. (2004). Commodity agriculture, civic agriculture and the future of U.S. farming. *Rural Sociology*. doi:10.1526/0036011041730464

Lyson, T. A. (2000). Moving toward civic agriculture. *Choices*.

McEntee, J. (2010). Contemporary and traditional localism: A conceptualisation of rural local food. *Local Environment*. doi:10.1080/13549839.2010.509390

Morland, K., Wing, S., Diez Roux, A., & Poole, C. (2002). Neighborhood characteristics associated with the location of food stores and food service places. *American Journal of Preventive Medicine*. doi:10.1016/S0749-3797(01)00403-2

Morse, C. (2018). The Multifunctionality of Country Stores: Insights on Resilience from Rural Vermont. Geographical Review, 108(3), 457-475.

Morton, L. W., Bitto, E. A., Oakland, M. J., & Sand, M. (2005). Solving the problems of Iowa food deserts: Food insecurity and civic structure. *Rural Sociology*. doi:10.1526/0036011053294628

Murdoch, J., Marsden, T., & Banks, J. (2000). Quality, nature, and embeddedness: Some theoretical considerations in the context of the food sector. *Economic Geography*. doi:10.1111/j.1944-8287.2000.tb00136.x

Richards, R., & Smith, C. (2006). Shelter environment and placement in community affects lifestyle factors among homeless families in Minnesota. *American Journal of Health Promotion*. doi:10.4278/0890-1171-21.1.36

Schmidt, M., Kolodinsky, J., DeSisto, T., & Conte, F. (2011). Increasing Farm Income and Local Food Access: A Case Study of a Collaborative Aggregation, Marketing, and Distribution Strategy That Links Farmers to Markets. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.017

Sharp, J., Imerman, E., and Peters, G. (2002). Community supported agriculture (CSA): Building community among farmers and non-farmers. *Journal of extension, 40(3)*. Available at:https://joe.org/joe/2002june/a3.php

Sage, Colin. 2003. Quality in Alternative Food Networks : Conventions, Regulations and Governance. In *International Seminar Policies Governance and Innovation for Rural Areas*.

Selfa, T., & Qazi, J. (2005). Place, taste, or face-to-face? Understanding producer-consumer networks in "local" food systems in Washington State. *Agriculture and Human Values*. doi:10.1007/s10460-005-3401-0

Sitaker, M., Kolodinsky, J., Pitts, S. J., & Seguin, R. (2014). Do entrepreneurial food systems innovations impact rural economies and health? Evidence and gaps. American journal of entrepreneurship, 7(2), 3.

Smith, C., & Morton, L. W. (2009). Rural Food Deserts: Low-income Perspectives on Food Access in Minnesota and Iowa. *Journal of Nutrition Education and Behavior*. doi:10.1016/j.jneb.2008.06.008

Smith, D., Greco, L., Van Soelen Kim, J., Sitaker, M., and Kolodinsky, J. (2018). Farm Fresh Food Box: An Innovative Business Model for Rural Communities. Rural Connections, Spring/Summer 2018

Stevenson, G. W., and Pirog R.(2013). Values-Based Supply Chains: Strategies for Agrifood Enterprises of the Middle. In *Food and the Mid-Level Farm*.

Stoffle, R. W. (1972). Whither the Country Store? *Ethnohistory*. doi:10.2307/481345

Valchuis, L., Conner, D. S., Berlin, L., & Wang, Q. (2015). Stacking Beliefs and Participation in Alternative Food Systems. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2015.1004211

Wengraf, T. (2001). Qualitative research interviewing: Biographic narrative and semi-structured methods. Sage.

What is nVivo. Retrieved from http://www.qsrinternational.com/nvivo/what-is-nvivo.

COMPREHENSIVE BIBLIOGRAPHY

Abatekassa, G., & Peterson, H. C. (2011). Market access for local food through the conventional food supply chain. *International Food and Agribusiness Management Review*.

Andreatta, S., Rhyne, M., & Dery, N. (2008). Lessons Learned from Advocating CSAs for Low-Income\rand Food Insuecure Households. *Southern Rural Sociology*.

Andreatta, S., & Wickliffe, W. (2002). Managing farmer and consumer expectations: A study of a North Carolina farmers market. *Human Organization*. doi:10.17730/humo.61.2.a4g01d6q8djj5lkb

Andreyeva, T., Middleton, A. E., Long, M. W., Luedicke, J., & Schwartz, M. B. (2010). Food retailer practices, attitudes and beliefs about the supply of healthy foods. *Public Health Nutrition*. doi:10.1017/S1368980011000061

Bailey, J. 2010. Rural grocery stores: Importance and challenges Center for Rural Affairs Rural Research and Analysis Program. Lyons, NE: Center for Rural Affairs.

Baronberg, S., Dunn, L., Nonas, C., Dannefer, R., & Sacks, R. (2013). The impact of New York city's health bucks program on electronic benefit transfer spending at farmers markets, 2006-2009. *Preventing Chronic Disease*. doi:10.5888/pcd10.130113

Bauman, A., Shideler, D., Thilmany, D., Taylor, M., & Angelo, B. (2014). An Evolving Classification Scheme of Local Food Bu. *eXtension CLRFS 2014 Food Security Conference*.

Bean, M., & Sharp, J. S. (2011). Profiling alternative food system supporters: The personal and social basis of local and organic food support. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170511000032

Beydoun, M. A., Powell, L. M., & Wang, Y. (2008). The association of fast food, fruit and vegetable prices with dietary intakes among US adults: Is there modification by family income? *Social Science and Medicine*. doi:10.1016/j.socscimed.2008.01.018

Blanchard, T., & Lyson, T. 2006. Food availability and food deserts in the nonmetropolitan south. Special Food Assistance Policy Series Number 12, April 2006, Southern Rural Development Center.

Block, D. R., Thompson, M., Euken, J., Liquori, T., Fear, F., & Baldwin, S. (2008). Engagement for transformation: Value webs for local food system development. *Agriculture and Human Values*. doi:10.1007/s10460-008-9113-5

Bloom, J. D., & Hinrichs, C. C. (2011). Moving local food through conventional food system infrastructure: Value chain framework comparisons and insights. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170510000384

Bodor, J. N., Rice, J. C., Farley, T. A., Swalm, C. M., & Rose, D. (2010). The association between obesity and urban food environments. *Journal of Urban Health*. doi:10.1007/s11524-010-9460-6

Booth, S. L., Sallis, J. F., Ritenbaugh, C., Hill, J. O., Birch, L. L., Frank, L. D., . . . Hays, N. P. (2009). Environmental and Societal Factors Affect Food Choice and

Physical Activity: Rationale, Influences, and Leverage Points. *Nutrition Reviews*. doi:10.1111/j.1753-4887.2001.tb06983.x

Brehm, J. M., & Eisenhauer, B. W. (2008). Motivations for participating in Community-Supported Agriculture and their relationship with Community Attachment and Social Capital. *Southern Rural Sociology*.

Breitbach, C. (2009). Food and the Mid-Level Farm: Renewing an Agriculture of the Middle - Edited by Thomas A. Lyson, G. W. Stevenson, and Rick Welsh. *Economic Geography*. doi:10.1111/j.1944-8287.2009.01037.x

Brown, Cheryl, and Stacy M. (2008). The impacts of local markets: A review of research on farmers markets and community supported agriculture (CSA). In *American Journal of Agricultural Economics*.

Brown, E., Dury, S., & Holdsworth, M. (2009). Motivations of consumers that use local, organic fruit and vegetable box schemes in Central England and Southern France. *Appetite*. doi:10.1016/j.appet.2009.06.006

Buttel, F. (2005). Ever since Hightower: The politics of agricultural research activism in the molecular age. In *Agriculture and Human Values*.

Clancy, K., and K. Ruhf. 2010. Report on Some Regional Values Chains in the Northeast: 1-20.

Cohen, N., & Derryk, D. (2011). Corbin Hill Road Farm Share: A Hybrid Food Value Chain in Practice. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.011

Colasanti, K. J. A., Conner, D. S., & Smalley, S. B. (2010). Understanding barriers to farmers' market patronage in Michigan: Perspectives from marginalized populations. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2010.504097

Conner, D., Nowak, A., Berkenkamp, J., Feenstra, G., Van Soelen Kim, J., Liquori, T., & Hamm, M. (2011). Value Chains for Sustainable Procurement in Large School Districts: Fostering Partnerships. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.005

Conner, D. S., Campbell-arvai, V., & Hamm, M. W. (2008). Value in the values: Pasture-raised livestock products offer opportunities for reconnecting producers and consumers. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170507002086

Conner, D. S., & Garnett, B. R. (2016). Economic and Environmental Drivers of Fruit and Vegetable Intake Among Socioeconomically Diverse Adults in Vermont. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2015.1128862

Conner, D. S., Izumi, B. T., Liquori, T., & Hamm, M. W. (2012). Sustainable school food procurement in large K-12 districts: Prospects for value chain partnerships. *Agricultural and Resource Economics Review*.

Connolly, C., & Klaiber, H. A. (2014). Does organic command a premium when the food

is already local? *American Journal of Agricultural Economics*. doi:10.1093/ajae/aau030

Circles of association: The connections of community-based food systems (2016).

Cooley, J. P., & Lass, D. A. (1998). Consumer Benefits from Community Supported Agriculture Membership. *Review of Agricultural Economics*. doi:10.2307/1349547

Curtis, K. R., & Ward, R. A. (2015). Food Consumption , Attitude , and Behavioral Change Among CSA Members : A Northern Utah Case Study 1. *Journal of Food Distribution Research*.

DeLind, L. B. (1993). Market Niches, 'Cul de Sacs', and Social Context: Alternative Systems of Food Production. *Culture & Agriculture*. doi:10.1525/cuag.1993.13.47.7

DeMuth, S. 1993. Community supported agriculture (CSA): an annotated bibliography and resource

Diamond, A., & Barham, J. (2011). Money and Mission: Moving Food with Value and Values. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.013

Diez Roux, A. V. (2003). Residential Environments and Cardiovascular Risk. *Journal of Urban Health*.

Diez Roux, A. V., Merkin, S. S., Arnett, D., Chambless, L., Massing, M., Nieto, F. J., . . . Watson, R. L. (2001). Neighborhood of residence and incidence of coronary heart disease. *New England Journal of Medicine*. doi:10.1056/NEJM200107123450205

DuPuis, E. M., & Goodman, D. (2005). Should we go "home" to eat?: Toward a reflexive politics of localism. *Journal of Rural Studies*. doi:10.1016/j.jrurstud.2005.05.011

Dollar Store Impacts. (n.d.). Retrieved November 18, 2019, from www.ilsr.org/dollar-stores.

Eikenberry, N., & Smith, C. (2005). Attitudes, beliefs, and prevalence of dumpster diving as a means to obtain food by Midwestern, low-income, urban dwellers. *Agriculture and Human Values*. doi:10.1007/s10460-004-8278-9

Feenstra, G., Allen, P., Hardesty, S., Ohmart, J., & Perez, J. (2011). Using a Supply Chain Analysis To Assess the Sustainability of Farm-to-Institution Programs. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.009

Consumers' perceptions and preferences for local food: A review, (2015).

Freedman, M. R., & King, J. K. (2016). Examining a New "Pay-as-You-Go" Community-Supported Agriculture (CSA) Model: A Case Study. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2015.1045671

Giskes, K., van Lenthe, F., Avendano-Pabon, M., & Brug, J. (2011). A systematic review of environmental factors and obesogenic dietary intakes among adults: Are we getting closer to understanding obesogenic environments? *Obesity Reviews*. doi:10.1111/j.1467-789X.2010.00769.x

Goodall, J., G. McAvoy, and G. Hudson. 2005. Harvest for hope: A guide to mindful eating. Grand Central Publishing.

Greer, L. 1999. Community supported agriculture. Business Management Series.

Fayetteville, AR: Appropriate Technology Transfer for Rural Areas (ATTRA).
Hanson, K. L., Kolodinsky, J., Wang, W., Morgan, E. H., Jilcott Pitts, S. B., Ammerman, A. S., . . . Seguin, R. A. (2017). Adults and children in low-income households that participate in cost-offset community supported agriculture have high fruit and vegetable consumption. *Nutrients*. doi:10.3390/nu9070726
Hanson, K. L., Garner, J., Connor, L. M., Pitts, S. B. J., McGuirt, J., Harris, R., ... & Seguin, R. A. (2019). Fruit and Vegetable Preferences and Practices May Hinder Participation in Community-Supported Agriculture Among Low-Income Rural Families. Journal of nutrition education and behavior, 51(1), 57-67.han
Hardesty, S. 2007. Producer returns in alternative marketing channels. Small Farms Program, Department of Agriculture and Resource Economics. University of California–Davis. Available at Web site http://www. sfc. ucdavis. edu/events/07hardesty. pdf (verified 23 March 2009).
Harmon, H.A. 2014. Community supported agriculture: A conceptual model of health implications. Austin J. Nutr. Food Sci. 2014, 2, 1024. [Google Scholar]
Heffernan, W. D., & Constance, D. H. (1994). Transnational Corporations and the Globalization of the Food System. *From Columbus to ConAgra: The Globalization of Agriculture and Food*.
Hendrickson, D., Smith, C., & Eikenberry, N. (2006). Fruit and vegetable access in four low-income food deserts communities in Minnesota. *Agriculture and Human Values*. doi:10.1007/s10460-006-9002-8
Hoppe, R.A, MacDonald, J., and Korb, P. 2010. Small Farms in the United States: Persistence Under Pressure (Economic Research Service, Trans.). Washington, DC: USDA ERS.
Hoshide, A. K. (2007). Values-Based & Value-Added Value Chains in the Northeast, Upper Midwest, and Pacific Northwest (pp. 1-13). Orono, ME: University of Maine.
Jablonski, B., Perez-Burgos, J., & Gómez, M. (2011). Food Value Chain Development in Central New York: CNY Bounty. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.015
Jilcott, S. B., Liu, H., Moore, J. B., Bethel, J. W., Wilson, J., & Ammerman, A. S. (2010). Commute times, food retail gaps, and body mass index in North Carolina Counties. *Preventing Chronic Disease*.
Kane, D.; Lohr, L. Maximizing Shareholder Retention in Southeastern CSAs: A Step Toward Long Term Stability; Organic Farming Research Foundation: Santa Cruz, CA, USA, 1997.
Kaufman, P. (1999). Rural poor have less access to supermarkets, large grocery stores. *Rural Development Perspectives*.
Fatal Harvest: The tragedy of industrial agriculture, (2003).
King, R., & Venturini, L. (2005). Demand for Quality Drives Changes in Food Supply Chains. *New Directions in Global Food Markets*.
Kolodinsky, J. M., & Pelch, L. L. (1997). Factors influencing the decision to join a community supported agriculture (csa) farm. *Journal of Sustainable Agriculture*. doi:10.1300/J064v10n02_11

Associations of the local food environment with diet quality - A comparison of assessments based on surveys and geographic information systems, (2008).
Landis, B., Smith, T. E., Lairson, M., Mckay, K., Nelson, H., & O'Briant, J. (2010). Community-supported agriculture in the research triangle region of North Carolina: Demographics and effects of membership on household food supply and diet. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320240903574403
Neighborhood Environments. Disparities in Access to Healthy Foods in the U.S., (2009).
Lasley, P., & Labao, L. (1991). Locality and Inequality: Farm and Industry Structure and Socioeconomic Conditions. *Social Forces*. doi:10.2307/2580092
Lea, E., Phillips, J., Ward, M., & Worsley, A. (2006). Farmers' and consumers' beliefs about community-supported agriculture in Australia: A qualitative study. *Ecology of Food and Nutrition*. doi:10.1080/03670240500530592
Lerman, T. (2012). A Review of Scholarly Literature on Values-Based Supply Chains. *Sustainable Agriculture Research and Education Program, Agricultural Sustainability Institute, University of California, Davis*. doi:10.1007/s11746-015-2611-x
Leroux, M. N., Schmit, T. M., Roth, M., & Streeter, D. H. (2010). Evaluating marketing channel options for small-scale fruit and vegetable producers. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170509990275
Liese, A. D., Weis, K. E., Pluto, D., Smith, E., & Lawson, A. (2007). Food Store Types, Availability, and Cost of Foods in a Rural Environment. *Journal of the American Dietetic Association*. doi:10.1016/j.jada.2007.08.012
Lindsay, S., Lambert, J., Penn, T., Hedges, S., Ortwine, K., Mei, A., . . . Wooten, W. J. (2013). Monetary matched incentives to encourage the purchase of fresh fruits and vegetables at farmers markets in underserved communities. *Preventing Chronic Disease*. doi:10.5888/pcd10.130124
(2018). LimeSurvey Overview. Retrieved from https://www.uvm.edu/it/survey/?Page=overview.php.
Lopez, R. P. (2007). Neighborhood risk factors for obesity. *Obesity*. doi:10.1038/oby.2007.251
Lovasi, G. S., Hutson, M. A., Guerra, M., & Neckerman, K. M. (2009). Built environments and obesity in disadvantaged populations. *Epidemiologic Reviews*. doi:10.1093/epirev/mxp005
Trends in U.S. local and regional food systems (2015).
Lyson, T. A. (2000). Moving toward civic agriculture. *Choices*.
Lyson, T. A., & Guptill, A. (2004). Commodity agriculture, civic agriculture and the future of U.S. farming. *Rural Sociology*. doi:10.1526/0036011041730464
Lyson, T. A., & Welsh, R. (2005). Agricultural industrialization, anticorporate farming laws, and rural community welfare. *Environment and Planning A*. doi:10.1068/a37142
MacMillan Uribe, A. L., Winham, D. M., & Wharton, C. M. (2012). Community supported agriculture membership in Arizona. An exploratory study of food and sustainability behaviours. *Appetite*. doi:10.1016/j.appet.2012.06.002

McCormack, L. A., Laska, M. N., Larson, N. I., & Story, M. (2010). Review of the Nutritional Implications of Farmers' Markets and Community Gardens: A Call for Evaluation and Research Efforts. *Journal of the American Dietetic Association*. doi:10.1016/j.jada.2009.11.023

McEntee, J. (2010). Contemporary and traditional localism: A conceptualisation of rural local food. *Local Environment*. doi:10.1080/13549839.2010.509390

McEntee, J., & Agyeman, J. (2010). Towards the development of a GIS method for identifying rural food deserts: Geographic access in Vermont, USA. *Applied Geography*. doi:10.1016/j.apgeog.2009.05.004

Minaker, L. M., Raine, K. D., Fisher, P., Thompson, M. E., Van Loon, J., & Frank, L. D. (2014). Food Purchasing From Farmers' Markets and Community-Supported Agriculture Is Associated With Reduced Weight and Better Diets in a Population-Based Sample. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2014.898175

Morgan, E. H., Severs, M. M., Hanson, K. L., McGuirt, J., Becot, F., Wang, W., . . . Seguin, R. A. (2018). Gaining and maintaining a competitive edge: Evidence from CSA members and farmers on local food marketing strategies. *Sustainability (Switzerland)*. doi:10.3390/su10072177

Morland, K., Diez Roux, A. V., & Wing, S. (2006). Supermarkets, other food stores, and obesity: The Atherosclerosis Risk in Communities Study. *American Journal of Preventive Medicine*. doi:10.1016/j.amepre.2005.11.003

Morland, K., Wing, S., Diez Roux, A., & Poole, C. (2002). Neighborhood characteristics associated with the location of food stores and food service places. *American Journal of Preventive Medicine*. doi:10.1016/S0749-3797(01)00403-2

Morland, K., Wing, S., & Roux, A. D. (2002). The contextual effect of the local food environment on residents' diets: The atherosclerosis risk in communities study. *American Journal of Public Health*.

Morton, L. W., Bitto, E. A., Oakland, M. J., & Sand, M. (2005). Solving the problems of Iowa food deserts: Food insecurity and civic structure. *Rural Sociology*. doi:10.1526/0036011053294628

Morton, L., and Blanchard, T. (2007). "Starved for Access: Life in Rural America's Food Deserts." Rural Realities, Volume 1, Issue 4.

Murdoch, J., Marsden, T., & Banks, J. (2000). Quality, nature, and embeddedness: Some theoretical considerations in the context of the food sector. *Economic Geography*. doi:10.1111/j.1944-8287.2000.tb00136.x

Fruit and vegetables, and cardiovascular disease: A review, (1997).

Ness, C. 2007. Farmers burn out on markets. San Francisco Chronicle, September 19, 2007. http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/09/19/FDAHS186D.DTL.

Nestle, M. (2013). Food politics: How the food industry influences nutrition and health. *Food Politics: How the Food Industry Influences Nutrition and Health*.

O'Brien, M. (2008). Small Town Grocers in Iowa: What Does the Future Hold? (No. 12970). Iowa State University, Department of Economics.

O'Malley, K., Gustat, J., Rice, J., & Johnson, C. C. (2013). Feasibility of increasing

access to healthy foods in neighborhood corner stores. *Journal of Community Health*. doi:10.1007/s10900-013-9673-1

Parsons, R. (2007). A victim of its own success? Los Angeles Times, April 11. Available at Web site http://articles.latimes.com/2007/apr/11/food/fo-farmers11 (accessed November 3, 2009).

Perez, J.; Allen, P.; Brown, M. Community supported agriculture on the central coast: the CSA member experience. Cent. Agroecol. Sustain. Food Syst. 2003. Research Brief 1.

Painter, K. (2007). An Analysis of Food-Chain Demand for Differentiated Farm Commodities: Implications for the Farm Sector (Center for Sustaining Ag & Natural Resources, Trans.) (pp. 1-48).

Pole, A., & Gray, M. (2013). Farming alone? What's up with the "C" in community supported agriculture. *Agriculture and Human Values*. doi:10.1007/s10460-012-9391-9

Pole, A., & Kumar, A. (2015). Segmenting CSA members by motivation: Anything but two peas in a pod. *British Food Journal*. doi:10.1108/BFJ-12-2014-0405

Pollan, M. (2016, October 05). Why Did the Obamas Fail to Take On Corporate Agriculture? Retrieved March 08, 2018, from https://www.nytimes.com/interactive/2016/10/09/magazine/obama-administration-big-food-policy.html

Competitive strategy: Creating and sustaining superior performance, 4875 (1985).

Powell, L. M., Auld, M. C., Chaloupka, F. J., O'Malley, P. M., & Johnston, L. D. (2007). Associations Between Access to Food Stores and Adolescent Body Mass Index. *American Journal of Preventive Medicine*. doi:10.1016/j.amepre.2007.07.007

Powell, L. M., Slater, S., Mirtcheva, D., Bao, Y., & Chaloupka, F. J. (2007). Food store availability and neighborhood characteristics in the United States. *Preventive Medicine*. doi:10.1016/j.ypmed.2006.08.008

Pullman, M. E., & Dillard, J. (2010). Values based supply chain management and emergent organizational structures. *International Journal of Operations and Production Management*. doi:10.1108/01443571011057326

Reddy, K. S., & Katan, M. B. (2004). Diet, nutrition and the prevention of hypertension and cardiovascular diseases. *Public Health Nutrition*. doi:10.1079/phn2003587

Reed, M. (2004). Bringing the food economy home: Local alternatives to global agribusiness. *Environmental Politics*.

Renting, H., Marsden, T. K., & Banks, J. (2003). Understanding alternative food networks: Exploring the role of short food supply chains in rural development. *Environment and Planning A*. doi:10.1068/a3510

Richards, R., & Smith, C. (2006). Shelter environment and placement in community affects lifestyle factors among homeless families in Minnesota. *American Journal of Health Promotion*. doi:10.4278/0890-1171-21.1.36

Robert, S. A., & Reither, E. N. (2004). A multilevel analysis of race, community disadvantage, and body mass index among adults in the US. *Social Science and Medicine*. doi:10.1016/j.socscimed.2004.03.034

Rose, D., & Richards, R. (2004). Food store access and household fruit and vegetable use

among participants in the US Food Stamp Program. *Public Health Nutrition*. doi:10.1079/phn2004648

Rothstein, Matthew. (2019) E-commerce Hasn't Slammed Grocery Stores Yet, But It May Bleed Them Dry Over Time. https://www.bisnow.com/national/news/retail/grocery-retail-ecommerce-amazon-whole-foods-97072

Russell, W. S., & Zepeda, L. (2008). The adaptive consumer: Shifting attitudes, behavior change and CSA membership renewal. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170507001962

Quality in Alternative Food Networks : Conventions, Regulations and Governance, (2003).

Schmidt, M., Kolodinsky, J., DeSisto, T., & Conte, F. (2011). Increasing Farm Income and Local Food Access: A Case Study of a Collaborative Aggregation, Marketing, and Distribution Strategy That Links Farmers to Markets. *Journal of Agriculture, Food Systems, and Community Development*. doi:10.5304/jafscd.2011.014.017

Smith, D., Greco, L., Van Soelen Kim, J., Sitaker, M., and Kolodinsky, J. (2018). Farm Fresh Food Box: An Innovative Business Model for Rural Communities. Rural Connections, Spring/Summer 2018, PP25-28.

Selfa, T., & Qazi, J. (2005). Place, taste, or face-to-face? Understanding producer-consumer networks in "local" food systems in Washington State. *Agriculture and Human Values*. doi:10.1007/s10460-005-3401-0

Psychosocial Predictors of Fruit and Vegetable Consumption in Adults. A Review of the Literature, (2008).

Sharp, J., Imerman, E., & Peters, G. (2002). Community Supported Agriculture (CSA): Building community among farmers and non-farmers. *Journal of Extension*.

Seeds of Suicide: The Ecological and Human Costs of the Globalization of Agriculture (2014).

Shiva, V., & Jafri, A. (2004). Failure of GMOs in India. *Research Foundation for Science, Technology and Ecology*.

Silva, E., Dong, F., Mitchell, P., & Hendrickson, J. (2015). Impact of marketing channels on perceptions of quality of life and profitability for Wisconsin's organic vegetable farmers. *Renewable Agriculture and Food Systems*. doi:10.1017/S1742170514000155

Sitaker, M., Kolodinsky, J., Pitts, S. J., & Seguin, R. (2014). Do entrepreneurial food systems innovations impact rural economies and health? Evidence and gaps. American journal of entrepreneurship, 7(2), 3.

Sitaker, M., McGuirt, J. T., Wang, W., Kolodinsky, J., & Seguin, R. A. (2019). Spatial Considerations for Implementing Two Direct-to-Consumer Food Models in Two States. Sustainability, 11(7), 2081.

Small, M. L., & McDermott, M. (2006). The Presence of Organizational Resources in Poor Urban Neighborhoods: An Analysis of Average and Contextual Effects. *Social Forces*. doi:10.1353/sof.2006.0067

Smith, C., & Morton, L. W. (2009). Rural Food Deserts: Low-income Perspectives on Food Access in Minnesota and Iowa. *Journal of Nutrition Education and*

Behavior. doi:10.1016/j.jneb.2008.06.008
Steinmetz, K. A., & Potter, J. D. (1996). Vegetables, fruit, and cancer prevention: a review. Journal of the American Dietetic Association, 96(10), 1027-1039.
A General Equilibrium Theory of Contracts in Community Supported Agriculture, (2015).
Values-Based Supply Chains: Strategies for Agrifood Enterprises of the Middle (2013).
Stevenson, S. (2009). Values-based food supply chains: Executive Summary, Country Natural Beef, CROPP/Organic Valley, Shepherd's Grain and Red Tomato.
Stoffle, R. W. (1972). Whither the Country Store? *Ethnohistory*. doi:10.2307/481345
Timperio, A., Ball, K., Roberts, R., Campbell, K., Andrianopoulos, N., & Crawford, D. (2008). Children's fruit and vegetable intake: Associations with the neighbourhood food environment. *Preventive Medicine*. doi:10.1016/j.ypmed.2007.11.011
Tropp, D. (2013). Why Local Food Matters: The Rising Importance of Locally-Grown Food in the US Food System; No. 160752; United States Department of Agriculture: Washington, DC, USA, 2013.
United States Department of Agriculture, National Agricultural Statistics Service (USDA/NASS). 2012 Census of Agriculture—Summary and Stated Data; USDA/NASS: Washington, DC, USA, 2014.
US Department of Agriculture; National Agricultural Statistics Service. 2015 Local Food Marketing Practices Survey; U.S. Department of Agriculture: Washington, DC, USA, 2015.
Valchuis, L., Conner, D. S., Berlin, L., & Wang, Q. (2015). Stacking Beliefs and Participation in Alternative Food Systems. *Journal of Hunger and Environmental Nutrition*. doi:10.1080/19320248.2015.1004211
Vassalos, M., Gao, Z., & Zhang, L. (2017). Factors affecting current and future CSA participation. *Sustainability (Switzerland)*. doi:10.3390/su9030478
What is nVivo. Retrieved from http://www.qsrinternational.com/nvivo/what-is-nvivo
Wengraf, T. (2001). Qualitative research interviewing: Biographic Narrative and Semi-Structured Methods. *SAGE Publication*. doi:10.4135/9781849209717
Wilkins, J. L., Farrell, T. J., & Rangarajan, A. (2015). Linking vegetable preferences, health and local food systems through community-supported agriculture. *Public Health Nutrition*. doi:10.1017/S1368980015000713
Yeh, M. C., Ickes, S. B., Lowenstein, L. M., Shuval, K., Ammerman, A. S., Farris, R., & Katz, D. L. (2008). Understanding barriers and facilitators of fruit and vegetable consumption among a diverse multi-ethnic population in the USA. *Health Promotion International*. doi:10.1093/heapro/dam044
Zajfen, V. (2008). Fresh Food Distribution Models for the Greater Los Angeles Region. Barriers and Opportunities to Facilitate and Scale up the Distribution of Fresh Fruits and Vegetables. *Center for Food & Justice. Urban & Environmental Policy Institute. Occidental College.*
Zenk, S. N., Schulz, A. J., & Odoms-Young, A. M. (2009). How neighborhood environments contribute to obesity. *American Journal of Nursing*. doi:10.1097/01.NAJ.0000357175.86507.c8

Zepeda, L., & Li, J. (2006). Who buys local food? *Journal of Food Distribution Research*.