



A Review of Scholarly Literature on Values-Based Supply Chains

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Introduction

In many parts of the United States, it appears that a revolution is occurring in the way food is produced, sold and eaten. Consumer desire to know who produces their food and how they do it is growing in tandem with an increasingly popular discourse about the importance of reconnecting with the land and supporting smaller scale family farmers and ranchers. This revolution is both influenced and evidenced by the popularity of media, books and films offering scathing critiques of the corporate-controlled, mainstream food system and pointing towards small to mid-scale agricultural producers as the solution. The emergence of farmers' markets, community supported agriculture programs, and grocery stores and restaurants promoting their support for local farmers and ranchers are additional proof of these trends.

Given these shifts, one might believe that the number of smaller farmers and ranchers is also on the rise. In fact, this statement is only true for the very smallest farms. Farms grossing less than \$10,000 annually increased in number by 38% between 1982 and 2007 to 1.32 million, or 60% of all farms (Hoppe, MacDonald, & Korb, 2010). In that same period, farms grossing between \$10,000 and \$249,999 declined by nearly 41%, from more than 1.1 million to 675,973 (Hoppe et al., 2010). In contrast, the number of farms grossing more than \$500,000 increased by 129%, from 50,841 to 116,286 (Hoppe et al., 2010). In addition, in 2007, farms grossing more than \$1 million, which make up only 2.5% of all farms (55,509) accounted for 59% (by dollar amount) of the food and fiber produced in this country, up from 24% in 1982. By contrast, in that same year, farms grossing between \$10,000 and \$249,999 produced 14% of U.S. agricultural products, a decrease from 41% in 1982 (Hoppe et al., 2010). In short, while the majority of farms in the U.S. are very small, non-commercial operations, most of our food comes from very large farms. The overall breakdown of farm size is becoming increasingly more polarized and midsized farmers and ranchers are disappearing at an alarming rate.

One of the reasons for the disappearance of midsized farmers and ranchers is the shrinking marketing opportunities providing sales opportunities at a scale and price that enables producers of

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this size to remain viable. Direct-to-consumer channels (e.g. farmers markets and community supported agriculture programs) are not sufficient for marketing enough volume of product from mid-sized farms, and they cannot achieve the economies of scale necessary to profitably compete in undifferentiated commodity markets with large and very large operations (G. W. Stevenson & Pirog, 2008).

One solution proposed by food systems stakeholders is wholesale marketing channels or supply chains that preserve the identity of the farmers and ranchers who raised or grew the product being sold, as well as any environmental, social or community values incorporated into its production. These supply chains are characterized by trust, transparency and equitable relationships between all participants. By preserving values associated with production as well as values in how partners interact with each other, these supply chains are theorized to help ensure a fair price for farmers and ranchers. Called values-based supply chains (VBSCs), this concept is being put into practice in various markets at the local, regional, and national level. Concomitantly, researchers are beginning to examine whether and how these models can work, identifying challenges, barriers, and best practices, and exploring new issues and questions that they raise.

This literature review surveys and synthesizes much of the existing research and scholarship on values-based supply chains in the United States, in order to gain a better understanding of what we know and in what direction new research should head. In the first section, I describe the scope of the literature reviewed, including research methods used, geographical regions studied, and theoretical frameworks applied. In the next section I categorize the literature thematically and discuss each theme. The themes that emerged from the literature I reviewed are the following:

- Describing VBSCs and how they work
- Values-based supply chains and the mainstream food system
- Benefits of VBSCs
- Barriers to and concerns with VBSCs
- Consumer preferences
- Defining “local”
- Best practices for success
- Roles for outside actors on VBSCs

I conclude the paper by discussing gaps in the literature and further areas for research.

Scope of Literature

This literature review is comprised of 24 sources, including 16 articles published in peer-reviewed academic journals, 4 university publications (3 from sustainable agriculture research centers), 2 U.S. Department of Agriculture publications, 1 book section (from *Food and the Mid-Level Farm: Renewing an Agriculture of the Middle*), and 1 unaffiliated report. Articles were published in 7 journals, including *Journal of Agriculture, Food Systems and Community Development* (6 articles), *Agriculture and Human Values* (3 articles), *Renewable Agriculture and Food Systems* (2 articles), *Area* (1 article), *Food Policy* (1 article), *International Food and Agribusiness Management Review* (1 article), and *International Journal of Operations and Production Management* (1 article). The time span of these publications includes 1 article from 2000, with the remainder from 2005 – 2011. Geographically, the research includes data from the national level, 3 regions (the Northeast, the Upper Midwest, and the Pacific Northwest) and 15 states (New York, Pennsylvania, Michigan, Iowa, Oregon, Illinois, Colorado, California, Oklahoma, Minnesota, New Mexico, Massachusetts, Vermont, Virginia, Florida, and Washington). Studies focused on either a particular city or region within a state, an entire state, or a multi-state region.

Researchers in this literature review relied very heavily on qualitative research methods, including in-depth interviews, focus groups, surveys, and participant observation. One study used quantitative methods, a spatially disaggregated transshipment model (Nicholson, Gomez, & Gao, 2011), and one used historical research (Selfa & Qazi, 2005). Participatory action research methods were used by researchers in one study incorporating surveys and in-depth interviews (Feenstra, Allen, Hardesty, Ohmart, & Perez, 2011).

Several authors used particular theoretical concepts and orientations as a framework for their papers. Supply chain management theory was used in four studies (Abatekassa & Peterson, 2011; Feenstra et al., 2011; Jarosz, 2000; King & Venturini, 2005; G. W. Stevenson & Pirog, 2008) as a framework to analyze particular VBSC practices, such as sourcing local food or managing information flow throughout the supply chain. This theory describes the dynamics, linkages, flows, and contexts that explain the way in which supply chains operate. Theories of agency were used in two studies to describe management strategies and power relations within specific VBSCs. Pullman and Dillard (2010) use structuration theory, a theory of agency which describes an iterative relationship between individual actors and the organizational structures in which they operate. Organizing structures enable and constrain the action of actors who, in turn, construct and reconstruct the organizational structures, and agency is understood to lie somewhere in between the two. Trauger (2009) relies on actor network theory, which rejects structuration theory and posits that

agency is a property of networks of actors, not poised between individuals and social structures. Social structures are understood to be networks of actors and agency is viewed as a relational achievement. Actor network theory is not necessarily geographically bounded but instead is bounded by the extent of relationships between actors, and can thus span distances. Jarosz (2000) suggests that actor network theory can be used to understand cooperation and innovation in agri-food networks such as VBSCs.

Concepts and theories related more specifically to sustainable agriculture and food systems were also used in this body of literature. Cohen and Derryck (2011) view VBSCs as consistent with the concept of civic agriculture, proposed by Thomas Lyson (2004), which describes a network of small-scale farmers in locally bounded communities, working collaborative in response to ecological and socioeconomic contexts, and rejecting the mainstream, consolidated, conventional, mechanized, production-oriented food and agriculture system (p. 86). Bloom and Hinrichs (2011) use theories of local and social embeddedness to understand relationships between supply chain partners. Embeddedness theory “highlights aspects of the local context, such as social relationships, that can modify and sometimes mitigate the workings of a strict, profit-oriented, economic logic” (p. 144).

Themes in the Literature

This section presents several themes drawn from a synthesis of the research reviewed for this paper. The themes are presented as categories that would probably be most useful for practitioners interested in creating a VBSC business, offering support towards developing or facilitating a VBSC, or other similar applications. The first five themes provide a description of VBSCs, how they function, and some benefits of, barriers to, and concerns with them. The next two themes offer some limited research on consumer preferences, in particular how local is defined and valued. The last two themes offer suggestions on key ingredients for success and best roles for outside actors (those not involved in economic transactions in a VBSC, such as universities, non-profit organizations, and the media) .

Describing VBSCs and How They Work

The concept of a values-based supply chain for food and agriculture was most consistently described in the literature 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 or 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. These differentiated values are communicated to the end consumer, often in the form of a story or narrative, particularly if the differentiated attribute is the farm or ranch identity. Products differentiated by these values frequently command some price premium. The notion of values are conceptualized in two different ways: as values associated with the product and the value created through collaborative, win-win strategies to move product throughout the chain (Block et al., 2008; Hoshide, 2007; G. W. Stevenson & Pirog, 2008). Block et al. (2008) calls the former “values of the web” (using the term “web” instead of “chain”) and the latter “values in the web” (p. 380). VBSCs can operate at a range of scales, and often combine economies of size (achieved through collaborations of producers and regional and local product aggregation) with product differentiation in the marketplace. However, the characteristics of the relationships found in VBSCs are a key defining feature. VBSCs are collaborative in nature, marked by transparency, trust and open communication, have equitable power relations, and work to guarantee participating farmers and ranchers a fair price (King et al., 2010; G. W. Stevenson & Pirog, 2008; S. Stevenson, 2009). They demonstrate high levels of performance and cooperation and are committed to the welfare of all participants in the chain (G. W. Stevenson & Pirog, 2008).

Many of the authors in this literature review used the above-described definition of a values-based supply chain, most often crediting G. W. Stevenson and Pirog. These authors, in turn, borrowed the VBSC concept from the business literature, which offers successful examples of this model in industries moving large volumes of complex, differentiated products, such as the automobile and consumer electronics industry, and extended it to agri-foods systems (G. W. Stevenson & Pirog, 2008). A number of other similar terms are used synonymously with VBSC, including “values-based value chains” (Conner, Campbell-Arvai, & Hamm, 2008; Conner et al., 2011; Hoshide, 2007), “food value chains” (Bloom & Hinrichs, 2011; Diamond & Barham, 2011; Jablonski, Perez-Burgos, & Gomez, 2011), and “values webs” (Block et al., 2008). King et al. (2010) use “local food supply chains” to describe similar supply chains that are specifically locally or regionally bounded and have fewer points between producers and consumers, but do not necessarily differentiate product based on values-related attributes.

Mechanisms that allow for organizational coordination between supply chain partners to ensure product differentiation and enable the transmission of trust, transparency, and meaning to the end consumer are a necessary and crucial characteristic of VBSCs (Conner et al., 2008; King &

Venturini, 2005). Several authors describe a driver organization or firm in a particular supply chain that facilitates chain management and brings other supply chain participants together (Cohen & Derryck, 2011; Conner et al., 2011; Diamond & Barham, 2011; Jablonski et al., 2011; King & Venturini, 2005; Pullman & Dillard, 2010; S. Stevenson, 2009; Trauger, 2009). According to Clancy and Ruhf (2010), these organizations are “the entity that ‘makes it happen,’” the “initial organizer,” and can be producer groups, processors, distributors, retailers, or non-profit organizations (p.2). Diamond and Barham (2011) note these organizations manage supply chains in different ways, with non-profit organizations tending to overinvest in infrastructures and for-profit and cooperative entities operating more conservatively in that regard. King and Venturini (2005) view the driver of the values-chain as the organization that creates the value and argue values-creation can happen at the input supplier, producer, processor, or retail level.

The concept of hybrid VBSCs was posited in three articles (Bloom & Hinrichs, 2011; Clancy & Ruhf, 2010; Cohen & Derryck, 2011). Bloom and Hinrichs (2011) and Clancy and Ruhf (2010) describe these as supply chains using both conventional and alternative resources, infrastructure, and markets, and incorporating both economic and non-economic values and goals. Alternatively, Cohen and Derryck (2011) define hybrid food value chains as supply chains including strategic partnerships (particularly with non-profit organizations) that provide social capital, transparency, shared governance, and co-creation of value. The two definitions of hybrid food value chains are fairly different; however Cohen and Derryck’s definition is essentially the same definition of VBSCs described by G. W. Stevenson and Pirog (2008). These divergent meanings for similar terms and similar meanings for divergent terms suggest a lack of commonly understood vocabulary in this field.

VBSCs and the Mainstream Food System

VBSCs are often seen as a component of the so-called alternative food system, perceived as separate from the mainstream, conventional food system and predicated on notions of health, environmental sustainability, economic justice, thriving communities, and equity for all consumers, producers and food system workers. Many researchers and writers on this topic seek to unpack this notion, questioning the existence of two distinct and different food systems or observing how intertwined they are. Some of these questions are raised in relation to VBSCs in the literature reviewed for this paper.

The concept of hybrid food chains described above was presented in a few studies (Bloom & Hinrichs, 2011; Clancy & Ruhf, 2010), indicating that VBSCs and conventional supply chains are

not separate and distinct models. Rather, companies that work in food supply chains participate in both kinds of models, infrastructure is shared among values-based and conventional firms, and individual firms may market to both consumers desiring values-based goods and those that do not. Similarly, Feenstra et al. (2011) argue VBSCs still operate within the constraints and values of the conventional market, where price, efficiency, convenience and food safety cannot be ignored and may be more important than social, community and environmental values. This could suggest that achieving the more conventional goals may sometimes require compromising on these values. Nicholson et al. (2011) point out that not all products in a multi-product supply chain can be localized, noting that a supply chain with a values based product may also move products undifferentiated by values and for which there is no local market.

There is disagreement among authors about whether hybrid food chains are advantageous or harmful to alternative food system goals described above. While King et al. (2010) believe this kind of model is valuable and complementary to VBSCs, arguing mainstream supply chain infrastructure can benefit local supply chain development, Bloom and Hinrichs (2011) raise questions about whether these food chains are reproducing injustices that exist in the conventional food system while co-opting the market for food differentiated by values. Trauger (2009) argues new food system organizations, including those that participate in VBSCs, are likely to be hybrids of existing ones and can often reproduce the marginalizing structures and modes of domination they sought to avoid, particularly the social and economic structures that privilege some groups and exploit others.

Benefits of VBSCs

Many of the researchers investigating VBSCs describe a variety of benefits gained, for the supply chain as a whole and for various participants along the chain. Several identify the potential VBSCs hold for providing viable marketing channels for a wide variety of farmers and ranchers whose options may otherwise be limited. VBSCs allow them greater market access, providing a price premium through product differentiation by values associated with production, location, and farm identity, and allowing them flexibility so they can compete in markets other than just large, commodity markets where massive economies of scale are necessary for survival (Conner et al., 2008; Diamond & Barham, 2011; Hoshida, 2007; Jablonski et al., 2011; King et al., 2010; Painter, 2007; G. W. Stevenson & Pirog, 2008; Trauger, 2009). By aggregating product from smaller-scale operations, VBSC enterprises also decrease farms' marketing costs through sharing resources, such

as storage space, distribution channels, revolving capital, and packing materials (Schmidt, Kolodinsky, DeSisto, & Conte, 2011).

Diamond and Barham (2011), Hoshide (2007), and G. W. Stevenson and Pirog (2008) specifically note that VBSCs hold promise for mid-scale producers. They see VBSCs as providing market access for these producers that better meets their size of production, as direct market options tend to move small amounts of product and commodity markets often provide prices at or below the cost of production for these farmers. Also, Jablonski et al. (2011) presented a case study of Central New York (CNY) Bounty, a VBSC driver organization that creates additional market access for underserved farmers in Central New York, including beginning, small-scale, and Amish farmers. Conner et al. (2008) argues VBSCs may hold promise for pasture-raised livestock producers because they provide access to a wider consumer base who will be informed of and ostensibly willing to pay a price premium for values associated with this form of production. Finally, Trauger (2009) notes in her case study of a producer cooperative which was also a VBSC driver organization that this model creates greater agency for cooperative members and helps them gain market access they did not have prior to joining the cooperative.

VBSCs also hold potential for providing greater fresh food access to low-income communities, schoolchildren, and other institutions (such as universities, prisons, and hospitals.) Conner et al. (2011) offer VBSCs as a viable strategy for aggregating local produce and meat for large school districts. Jablonski et al. (2011) note that recipients of the Supplemental Nutrition Assistance Program benefit from increased fresh food access in their case study of CNY Bounty. In their case study of New York values-based aggregator and distributor Corbin Hill Road Farm Share, Cohen and Derryck (2011) report that low-income residents in a Bronx, NY community benefit from greater fresh produce consumption and indicate this outcome is due to these residents' active role in governance of the enterprise. More generally Block et al. (2008) suggest values webs as a viable strategy for sustainable, equitable, and just food systems development due to the trustful and collaborative nature of the partnerships within the web.

Barriers to and Concerns with VBSCs

The VBSC literature reviewed for this project identify a number of challenges for the success of VBSCs and for specific VBSC participants. Pricing was chief among these concerns, with many articles indicating assurance of a fair price for producers that was also affordable for consumers is a significant obstacle, particularly for institutional buyers and low-income consumers (Abatekassa &

Peterson, 2011; Cohen & Derryck, 2011; Feenstra et al., 2011; G. W. Stevenson & Pirog, 2008; Zajfen, 2008). The entry of very large companies into the values-based market, merging and consolidation of values-based companies and the resulting downward price pressure, and competition with these larger companies on pricing also presents barriers for smaller farms and food enterprises in VBSCs (King & Venturini, 2005; Painter, 2007). This problem is compounded by the fact that products with values-based labeling do not necessarily guarantee supply chain transactions characterized by trust, transparency, and equity, but consumers do not necessarily have any way of knowing that. Additionally, Painter (2007) observed consumers will only be willing to pay a price premium of about 10-20% for values attributes in most cases, which may not be enough revenue for producers employing more costly production systems at smaller scales.

Inefficiencies in VBSCs, with regard to transaction costs and infrastructure, is another considerable challenge. Jablonski et al. (2011) note costly, labor-intensive transactions due to working with underserved communities of farmers and consumers in their case study of CNY Bounty. In their survey of 35 Northeastern VBSC driver organizations, Clancy and Ruhf (2010) identified the need for better efficiencies in the supply chain as a frequently cited challenge (p.10). Cohen and Derryck (2011) contend transportation costs must be controlled in order for Corbin Hill Road Farm Share to remain viable (p. 96). Nicholson et al. (2011) and King et al. (2010) argue that localizing supply chains may be less fuel efficient and create more greenhouse gas emissions in the short run, due to a lack of regionalized distribution infrastructure, including absence of aggregated transportation and backhauling. Zafjen (2008) notes the sprawling geography of Southern California and the associated costs in distribution as a challenge to VBSCs in that region. In a broader context, localizing one product in multi-product supply chains can create substantial inefficiencies for the products not being localized. Nicholson et al. (2011) identified this challenge in their study on the dairy supply chain, which moves products without many local marketing options, such as milk protein concentrate.

Growth was cited by a few authors as a struggle. Survey respondents in Clancy and Ruhf's (2010) paper reported increasing the numbers of suppliers and buyers can be tough (p. 10). Cohen and Derryck (2011) also identified managing costs associated with growth as a challenge for Corbin Hill Road Farm Share.

Many VBSC operations have difficulty maintaining cash flow, which hinders ability both to grow and to manage daily operations. Jablonski et al. (2011) reported CNY Bounty struggled with cash flow due to their reliance on grant funding, often slow to arrive, and also to inadequate web

systems. They lacked the means for processing credit card transactions on their website. G. W. Stevenson and Pirog (2008) note a lack of appropriate pricing based on costs has potential to create cash flow barriers for producers participating in VBSCs. In addition, many VBSC enterprises face considerable barriers accessing financing and capitalization (Cohen & Derryck, 2011; G. W. Stevenson & Pirog, 2008).

In dealing with smaller-scale producers, getting enough consistent and quality supply is often a hindrance for buyers (Abatekassa & Peterson, 2011; Clancy & Ruhf, 2010; G. W. Stevenson & Pirog, 2008). Particularly with institutional buyers, Zajfen (2008) and Conner et al. (2011) note the need for products that meet specific nutritional criteria and processing requirements presents barriers for smaller-scale producers, particularly because of a lack of processing infrastructure.

Lack of consumer demand is also a barrier. Bloom and Hinrichs (2010) observed that consumers in their two case studies preferred to purchase local products directly from farmers and not through an intermediary; thus, distributors in these cases were not very successful at marketing locally produced goods.

Coordination along the supply chain was a concern raised by researchers, and this challenge came out in a number of ways. One is related to marketing and values-communication along the supply chain, identified in several studies. Clancy and Ruhf (2010) observed that retailers tended to oversimplify the communication of “local” and the meanings behind it to consumers. King et al. (2010) also noted obstacles in getting information about products through the supply chain. G. W. Stevenson and Pirog (2008) argue that meaningful standards and certification procedures will need to be developed in order to ensure authentic transmission of values through VBSCs (p. 138). Competent supply chain management is another challenge linked to VBSC coordination. G. W. Stevenson and Pirog (2008) imply that organizations that don’t understand values-based production systems or key components of VBSCs, such as trust and transparency, will not adequately serve producers in these supply chains. Building relationships between different supply chain partners is a third challenge related to VBSC coordination. Trauger (2009) argues that the marginalizing structures VBSC enterprises initially sought to escape are often reproduced in these entities, which has implications for coordination and preservation of trust, transparency, and equity along the supply chain. Clancy and Ruhf (2010) report that VBSC driver organizations had difficulties working with conventional partners. Similarly, Zajfen (2008) observes dissonance in business cultures between alternative and conventional supply chain partners can create obstacles in VBSC coordination. Finally, Schmidt et al. (2011) observe, in their case study of Intervale Food Hub in

Vermont, that coordinating equity among farmers regarding price, volume, and diversity of product is a challenge. These authors further note small producers and large producers have different needs with regards to this issue, where the former want to sell low volumes at high prices and the latter want the opposite.

Because these are new business models for many small to midsized farmers and ranchers, their lack of knowledge and ability to market through VBSC channels is often a limitation (Clancy & Ruhf, 2010; Zajfen, 2008). Producers marketing to VBSCs often lack the skills and knowledge to determine profitable pricing structures (G. W. Stevenson & Pirog, 2008). Some studies suggest the need for more research to support VBSCs and enterprises working with them, especially producers, including technical, research and development support from universities (G. W. Stevenson & Pirog, 2008) and assessments of VBSC models and enterprises (Clancy & Ruhf, 2010).

Consumer Preferences

Understanding customer preference is critical for survival of any business operating in a competitive market. Several studies discuss this topic, although a deeper exploration of consumer preference and behavior is more likely to be found in other kinds of literature. While many VBSCs are predicated on the assumption that consumers demand local, sustainably-produced food, several researchers in this literature review note price, convenience, food safety, freshness, and healthfulness still remain the most important characteristics for consumers (Feenstra et al., 2011; Painter, 2007). Specifically, Painter (2007) observed consumers willingness to pay a price premium of no more than around 10-20% for values attributes. Additionally, Nicholson et al. (2011) noted consumers' stated values preferences for local and sustainable may not always line up with their purchasing habits.

Defining "Local"

"Local" as a value does not have a commonly understood meaning. Abatekassa and Peterson (2011) found no agreed-upon definition of "local" and further discovered points of contention around the distance criteria for "local" in their study of supply chain actors and producers in Southeast Michigan. Selfa and Qazi (2005) surveyed producers and consumers in three counties in Washington state and found they attributed several meanings to "local," including specific numeric distances, the county of residence and neighboring ones, Washington state, the Pacific Northwest, or those with whom they had social relationships. Additionally some producers in their survey defined "local" as the business relations with their immediate downstream buyers, some defined it as

anywhere on the planet (indicating perhaps they felt local was a meaningless concept), and some did not know how to define it.

Consumers also attribute additional values to “local” beyond geographical distance, including “freshness,” “taste,” “quality,” (Selfa & Qazi, 2005), and “community values” (Abatekassa & Peterson, 2011). In addition, consumers often associate “local” with reduced fuel consumption and decreased greenhouse gas consumption, but because of a lack of efficient local distribution infrastructure, that assumption may be incorrect (King et al., 2010; Nicholson et al., 2011).

Finally, some studies indicate that “local” is not necessarily valued consistently or as highly as other attributes. Painter (2007) found that “local” was valued less than “support for farmers and local economies.” Selfa and Qazi (2005) learned that urban customers they surveyed prioritize “healthy” and “organic” over “local,” whereas rural residents give greater priority to “local.” Interestingly, they also found that producers perceived more support for local among urban consumers than rural consumers. King et al. (2010) argues “local” attributes may not be enough to differentiate a product for a price premium.

Best Practices for Success

Discussion suggesting best practices for successful VBSCs was the most common theme that emerged from the literature.

In this category, relationship-building along the supply chain came up most often. A number of authors emphasize the importance of cultivating stable, durable relationships characterized by trust, transparency, cooperation, and openness among all supply chain partners (Conner et al., 2008; Conner et al., 2011; Feenstra et al., 2011; Hoshide, 2007; Jarosz, 2000; King et al., 2010; King & Venturini, 2005; G. W. Stevenson & Pirog, 2008). Open communication and negotiation between supply chain partners and equitable power along the chain are other important feature for VBSC relationships, including shared decision-making and governance (King, 2010; G. W. Stevenson & Pirog, 2008; (Bloom & Hinrichs, 2011; Conner et al., 2011; Jarosz, 2000) and equitable distribution of costs and returns (King & Venturini, 2005). However, G. W. Stevenson and Pirog (2008) also argue completely equal power distribution may not be possible, and institutionalized procedures and mechanisms to ensure trust and fairness must be in place. Bloom and Hinrichs (2010) underscore the need for procedural trust and fairness, observing that informal relationships with high degrees of trust do not always translate into higher prices paid to and consistent volume purchased from producers. Additionally, a shared understanding of the VBSC business model among supply chain

partners (G. W. Stevenson & Pirog, 2008) and co-creation of values with whom the partners and communities are working is critical (Cohen & Derryck, 2011; G. W. Stevenson & Pirog, 2008). Bloom and Hinrichs (2011) argue more specifically that conventions of the mainstream commercial produce industry, including shopping around for suppliers offering the lowest price, are best avoided. Instead, buyers should cultivate long-term relationships with suppliers and negotiate prices that meet both parties' needs. Another important aspect of relationship-building is ensuring partnership with entities that have similar passions and distinctive competencies and resources (Conner et al., 2011; G. W. Stevenson & Pirog, 2008). In that vein, Diamond and Barham (2011) add that supply chain partners must have a clear recognition of each of their competencies and limitations.

Related to cultivating strong relationships, many authors underscore the importance of allowing impacted communities targeted by VBSCs for improved access to fresh food to define their own issues. Cohen and Derryck (2011) argue values in the supply chain should be co-created by community organizations and the communities they work with and upstream partners. Also, Block et al. (2008) argue for collaborative, non-hierarchical models of research where community partners identify their needs. Similarly, Conner et al. (2011) noted community partners working with school districts should allow school districts to take the lead in determining their priorities and needs.

Congruent with strong and collaborative relationships is a system-wide understanding of the entire supply chain and effective and efficient coordination among VBSC partners (Abatekassa & Peterson, 2011; Feenstra et al., 2011; King & Venturini, 2005; Nicholson et al., 2011; Pullman & Dillard, 2010; G. W. Stevenson & Pirog, 2008). King and Venturini (2005) particularly emphasize the importance of focus on linkages between supply chain partners, efficient resource use across the supply chain, and continuous flow of product. Related to system-wide understanding of the supply chain, Nicholson et al. (2011) underscore the need to examine the impacts of localizing one particular product on all other products in a multi-product supply chain. Information flow is another critical aspect of effective supply coordination, in terms of logistics and timing, values communication to consumers, and consumer preference communication back up the supply chain (Feenstra et al., 2011; King & Venturini, 2005; G. W. Stevenson & Pirog, 2008). G. W. Stevenson and Pirog (2008) provide specific suggestions related to information flow to improve coordination, including sharing information about forecasts, inventories, work, production, and delivery schedules, and pricing needed to cover costs and sustain profit margins. They believe these practices will lead to decreased design time, well-guided capacity plans, coordinated production schedules, efficient inventory investment, effective transportation, strong customer service, and improved revenues (p.

127). Abatekassa and Peterson (2011) and Schmidt et al. (2011) add that coordinating crop planning is also important. Schmidt et al. (2011) further add that surveying consumer wants and farmer needs prior to developing a VBSC enterprise is a critical step, and was one of the elements of success for the Intervale Food Hub in Vermont.

Infrastructure development as a key ingredient for success was identified by several authors. Product aggregation infrastructure is a critical need. Abatekassa and Peterson (2011) and King et al. (2010) suggest more intermediary aggregators at the regional level, which many food systems advocates now commonly refer to as food hubs. In addition, G. W. Stevenson and Pirog (2008) advocate for horizontal collaboration among VBSC partners, Hoshide (2007) advises working with producer cooperatives and Diamond and Barham (2011) argue for partnering with informal networks of farmers and ranchers, with the goal of aggregating product for downstream supply chain partners. Developing new processing infrastructure was also highlighted as important, generally (G. W. Stevenson & Pirog, 2008) and specifically for meat (Conner et al., 2008; King et al., 2010). Diamond and Barham (2011) recommend VBSC organizations invest in appropriate levels of infrastructure consistent with profit forecasts and supply chain output. Undergirding all infrastructure development, as well as any kind of growth for VBSCs as a whole and individual participants is the need for increased access to capital and financing (G. W. Stevenson & Pirog, 2008).

Communication about values and clear differentiation of product based on values is also critical to VBSC success. Many authors strongly emphasize preservation of farm or ranch identity and story, as well as community, environmental, and social values associated with production throughout the supply chain to the end user (Block et al., 2008; Conner et al., 2008; Diamond & Barham, 2011; Feenstra et al., 2011; Hoshide, 2007; Painter, 2007; Pullman & Dillard, 2010; G. W. Stevenson & Pirog, 2008). In their case study of Country Natural Beef, Pullman and Dillard (2010) found that clear articulation of values by VBSC driver organizations to their suppliers contributed to their success. However, Diamond and Barham (2011) also found that if consumers have a pre-existing high level of trust with a VBSC enterprise, then labeling products with particular credence attributes (such as “local” or farm or ranch of origin) is not always necessary. In either case, consumer education is a critical part of values communication, whether the values are associated with a particular product or the entity marketing or selling it. Painter (2007) indicates that producers must educate consumers about the costs associated with production of values-based products and Hoshide (2007) and Schmidt et al. (2011) suggest VBSC organizations host events to connect

producers and consumers. King and Venturini (2005) highlight the need for the organization creating value to implement mechanisms ensuring values are maintained throughout the supply chain. Also part of values communication is development and coordination of standards for credence attributes (Abatekassa & Peterson, 2011; Pullman & Dillard, 2010; G. W. Stevenson & Pirog, 2008). G.W. Stevenson and Pirog (2008) suggest developing consistent and meaningful standards using neutral, third-party agents to verify adherence to standards (p. 138).

Other best practices recommended by authors include working with a diversity of different scale producers (Feenstra et al., 2011) and a focus on food safety and extremely high quality product (King & Venturini, 2005). Bloom and Hinrichs (2011) urge distributors to focus more on producers' needs and not only on those of buyers, whereas King and Venturini (2005) underscore the importance of focusing on customers' needs and requests.

Roles for Outside Actors

Unlike most mainstream, conventional supply chains, VBSCs often involve collaborations with outside actors such as universities, non-profit organizations, and other kinds of community partners. Many of the studies reviewed provided suggestions as to how these outside actors can best work with VBSCs.

Non-profit organization partners can play a valuable role in VBSCs, but it is important for them to realize their strengths and limitations, and focus on the former (Diamond & Barham, 2011). In their study of Corbin Hill Road Farm Share, Cohen and Derryck (2011) found that community partners brought social capital to that VBSC and helped the supply chain meet the needs of the targeted group of consumers: low-income residents of color in the Bronx, NY in their case. Additionally, these authors observed that community partners helped to ensure trust and transparency along the supply chain and may serve a role in developing new, inclusionary models for the enterprise. Conner et al. (2011) add that community partners should serve as a liaison between different VBSC participants and facilitate the development of strategies to institutionalize processes and procedures. G. W. Stevenson and Pirog (2008) also suggest knowledge sharing, study groups, and workshops as appropriate tasks for national non-profit networks to carry out. In their eight case studies of VBSCs around the country, some driven by non-profits, Diamond and Barham (2011) determined that the most effective roles non-profits can play are to help facilitate, connect and catalyze relationships along the supply chain, conduct outreach and education, identify potential resources, including funding resources, and test out new business models. Zajfen (2008) provides a

number of different specific examples of VBSC roles for non-profits to initiate that align with Diamond and Barham's (2011) suggestions, focusing on facilitation, outreach, and education. These include local food product lines marketed by non-profit organizations for schools and Women, Infant & Children Program recipients, facilitation of aggregation hubs at farmers markets and farmers' collectives, and classroom subscriptions to community supported agriculture programs for educational purposes. Although these programs may show potential for supporting VBSCs, Zafjen does not provide much guidance on how to develop them, specifically how to access capital and infrastructure. Finally Schmidt et al. (2011) argue non-profit partners can help secure grant funds which give VBSC businesses the flexibility to learn and adapt without the pressure of having to meet a bottom line.

A few authors argue that the best role for universities is research, education, and outreach to the public (Block et al., 2008; Feenstra et al., 2011; G. W. Stevenson & Pirog, 2008). Block et al. (2008) further argue that university research should be collaborative, non-hierarchical, and involve two-way avenues of dialogue. Feenstra et al. (2011) add that the media can also serve as vehicles for providing information to the public.

Finally, G. W. Stevenson and Pirog (2008) suggest third party certifiers can help ensure validity of values claims.

Further Research Needed

The existing scholarship on VBSCs in the United States is relatively new, and several authors indicate gaps in the literature and areas for further research. Jarosz (2000) suggested using actor-network theory to examine relationships in food networks and commodity supply management theory to illuminate obstacles and opportunities. In later research, several authors did, in fact, employ these theories, including Abatekassa and Peterson (2011), Feenstra et al. (2011), King and Venturini (2005), and Trauger (2009). Clancy and Ruhf (2010) propose examining the role of hybrid food chains and exploring ways for achieving trust and transparency along the supply chain. Conner et al. (2008) recommend developing best practices for supply chain governance, communicating values and strategies for addressing and overcoming processing barriers, particularly for pasture-based livestock. Jablonski et al. (2011) advise studying the economic multiplier benefits of VBSC models on participants and on the region in which they operate. In addition to those highlighted above, I note several gaps in research reviewed for this paper and recommend them for further

inquiry on this topic. This list is not exhaustive, and because my review only considered U.S. based research, it is possible that research I recommend below has been conducted in other countries. However, given the economic, geographic, social, and cultural impacts that particular national contexts have, repeating this research in the U.S. would prove valuable.

Greater diversity of research methods. The majority of research I reviewed on VBSCs uses qualitative research methods. In order to develop more generalizable theories on VBSCs, research on a broader scale, including comparative studies, large-scale surveys, and inquiries spanning several years should be conducted. Comparative studies would provide more information on how different local contexts and resources may impact the development of a VBSC. Large-scale surveys would provide more data on how different groups of people (including consumers, producers, processors, distributors, food systems workers, and other types of VBSC participants) function in VBSCs, for example, if and how these groups benefit by them. Studies that span several years would provide data that compares new VBSCs with mature ones. In addition, more quantitative data is needed on VBSCs. This could include research exploring economic and resource efficiency throughout the supply chain and identifying best practices for improving efficiencies in these areas as well as research quantifying the economic, social, environmental, and other benefits of VBSCs, in particular how these costs are internalized in these models.

VBSC development. Two significant barriers related to VBSC development identified in the research are access to capital and lack of aggregation, processing, and distribution infrastructure. However, not much literature points to strategies for addressing these limitations. Further research related to accessing capital could examine and uncover structural and institutional barriers, including policies and regulations at various levels of government as well as lenders' practices and policies that prevent capitalization of VBSCs and participating enterprises. Research focused on infrastructure challenges could take a similar direction, looking at institutional, structural, and regulatory barriers to infrastructure development. Additionally, for both of these topics, future inquiries could explore strategies with potential to overcome these obstacles, including best ways to use existing resources and infrastructure and grassroots capitalization and lending models.

VBSC coordination and role of outside actors. Coordination of VBSC partners and processes is another significant barrier emerging from the literature. However, much of it does not provide specifics for how this should happen. Research seeking to identify best practices helping to facilitate and improve VBSC coordination may significantly improve how well they function overall. Part of this research could continue the examination initiated by a few authors in this literature review of the

best roles for outside actors, such as non-profit organizations, economic development associations, government agencies, and universities.

Conclusion

In this literature review, I attempted to provide a comprehensive sketch of the existing research on values-based supply chains in the United States. Because this topic is relatively new, my review was limited to 24 sources. The existing research provides a strong starting point for food systems stakeholders to understand this nascent field and continue to develop models and enterprises that further the goals of environmental, social, and community sustainability and equity in all parts of the food system. In addition, numerous future inquiries into the nature of these models and best practices to cultivate their improvement remain to be explored. As consumer awareness for and demand of agriculture production systems that prioritize these goals grows, the need for research exploring ways to achieve them will become more imperative.

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