NORTHWEST LOWER MICHIGAN'S EVOLVING LOCAL GRASS-FED BEEF MIDDLE VALUE-CHAIN: A CASE STUDY ASSESSMENT

By

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Grass-fed beef is a growing part of the local food movement in Lower Michigan as consumer demand and production increases. Despite this, the movement is growing slowly and there is little knowledge about the processor, distributor, restaurant, or retailer role in the grass-fed beef market. As these sectors are all essential in the chain of transforming cattle on farm to the products consumers purchase, it is important to explore their role in the evolving local grass-fed beef market.

This study assess the current status of the grass-fed beef market in northwest Lower Michigan, focusing on the middle value-chain – processors, distributors, restaurants, and retailers. Twenty-four participants from the processing, distribution, restaurant, and retail industries were surveyed and interviewed in order to understand their personal and motivating values, their business relationships with others in the grass-fed beef value-chain, and perceived barriers to the market.

This research finds that although the value-chain generally adheres to a value-chain framework, the value-chain needs to work together to strengthen their value-chain structure and solve relationship struggles identified with this research. Additionally, the value-chain faces three major barriers that threaten the growth of the market: a lack of processing infrastructure and disconnect between the processors and the rest of the value-chain; inconsistencies between grass-fed beef supply and restaurant and retail demand; and a general lack of knowledge within the value-chain about grass-fed beef.

ABSTRACT

NORTHWEST LOWER MICHIGAN'S EVOLVING LOCAL GRASS-FED BEEF MIDDLE VALUE-CHAIN: A CASE STUDY ASSESSMENT

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The role of grass-fed beef in the local food movement of northwest Lower Michigan is growing both in scope and size. It is clear that demand for locally raised beef is increasing and there are a growing number of producers raising grass-fed beef and selling directly to consumers. However, there is little knowledge and literature about the middle part of the value chain. As processors, distributors, restaurants, and retail establishments are all essential in the chain of transforming cattle on farm to the products consumers purchase, it is important to explore their role in the local grass-fed beef market.

This study assessed the middle of the local grass-fed beef value-chain of in northwest Lower Michigan. Twenty-four individuals from the processing, distribution, restaurant, and retail industries were surveyed and interviewed in order to understand their personal and motivating values, their business relationships with others in the grass-fed beef supply chain, and what they believe to be barriers to the market.

This research finds that although the value-chain generally adheres to a value-chain framework, the value-chain needs to work together to strengthen their value-chain structure and solve relationship struggles identified with this research. Additionally, the value-chain faces three major barriers that threaten the growth of the market: a lack of processing infrastructure and disconnect between the processors and the rest of the value-chain; inconsistencies between grass-fed beef supply and restaurant and retail demand; and a general lack of knowledge within the value-chain about grass-fed beef.

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Background

There is a growing national focus on food, which is impacting corresponding food systems due to increasing consumer demand for products that are grown close to home and also embody personal values. Consequently, grass-fed beef, a product that appeals to the demand for local meats while also possessing favorable distinguishing characteristics that consumers value (Mathews & Johnson, 2013), is on the rise nationally, particularly in states such as Michigan. The grass-fed beef market controls only a small portion of the beef-market overall, therefore little is known about its current state. Consequently, there is a need to examine value-chain wide barriers and characteristics of business relationships to better understand how local grass-fed beef is developing and what aspects of the market need to be improved. Doing so will increase the vibrancy of the local-grass-fed beef market. Of particular interest for this study is the grass-fed beef market situated in the state of Michigan. In the last decade there has been a surge in locally oriented food production in Michigan including an increase in grass-fed beef. Focusing on this particular location allows for in-depth understanding of the values and the intimate relationships that emerge through such a local system, which may aid in broader understanding of the grass-fed beef market overall.

Though not a novel concept, the phenomenon of local food has reemerged in full force following decades of increasingly national and globalized trends in food systems. This upsurge in demand for locally produced foods is often attributed to consumers' environmental concerns; the desire for community food security; and an interest in the origins of their food (Martinez et al., 2010; Pirog, Miller, Way, Hazekamp, & Kim, 2014). Interestingly, there is no universal definition of local food. However, locals, businesses, and organizations have developed and

operationalized their own definitions of local that are typically associated with the proximity of where food is grown to where it is consumed (i.e. defined by a mileage radius, region, or state). Though, this is not always the case. At times local food is also associated with non-spatial characteristics such as methods of production, sense of place, and farmer-community involvement (Martinez et al., 2010).

While definitions of local food can vary it is often identified with direct-to-consumer markets in the form of farmers markets and Community Supported Agriculture (CSA), both of which have increased dramatically in the last decades. The USDA reports that direct-to-consumer sales increased by 77% between 1992 and 2007 (Low & Vogel, 2011), and have since increased by another 8% as of 2012 (USDA National Agricultural Statists Service, 2014). The number of farmers markets in the United States have increased 364% in 20 years, from 1,755 markets in 1994 to 8,268 markets in 2014 (USDA Agricultural Marketing Service, 2014), and as of the 2012 Census of Agriculture, 12,617 farms were marketing food through CSAs while 50,000 farms sold direct-to-institution (e.g. restaurants and retailers) (USDA NASS, 2014). Additionally, the growing number of nationally recognized farm-to-school programs, which numbered 40,328 during the 2011-2012 school year (USDA Food and Nutrition Service, n.d.), is further evidence of the expanding local food movement.

Concurrently, grass-fed beef and other alternative meat products are becoming popular as consumers seek out a substitute for conventional meat products that better align with their personal values (Mathews & Johnson, 2013). Grass-fed beef is defined as animals that are only fed grass or forage after weaning (USDA AMS, 2007). Grass-fed beef products offer many environmental and social benefits over conventionally produced meat. For example, proper grazing management such as adaptively managed rotational grazing, can improve the health of

grassland ecosystems and soil health (Beukes & Cowling, 2003; Ferguson et al., 2013; Teague, Dowhower, Baker, Haile, DeLaune, Conover, 2011), can increase water holding capacity (Beuke & Cowling, 2003; Jacobo, Rodríguez, Bartoloni, Deregibus, 2006; Weber & Gokhale, 2011), and can support a more favorably diverse and dense forage population (Ferguson et al. 2013; Jacobo et al., 2006; Teague et al. 2011; Weber & Gokhale, 2011) compared with continuously grazed and non-grazed systems. Additionally, the health benefits of grass-fed over grain-fed beef are well documented. Grass-fed beef has lower overall fat content, higher levels of conjugated linoleic acid, and a more favorable omega-6 to omega-3 fatty acid ratio than its grain-fed counterpart (Daley, Abbott, Doyle, Nader, Larson, 2010; Duckett, Neel, Lewis, Fontenot, Clapham, 2013; Tansawat, Maughan, Ward, Martini, Cornforth, 2013). Finally, raising animals on pasture can result in improved animal welfare, a subject of importance to the public (Centner, 2010; Saja, 2013). By raising animals solely on grass, cattle are afforded constant access to pasture during the growing season, and live out their lives consuming their natural diet of grass rather than corn. While literature indicates there are many benefits to raising grass-fed animals the practice is still underutilized.

Also of interest is the national increase in consumer demand for and awareness of local meats and grass-fed beef. The popularity of locally raised meats is evidenced in the American Culinary Federation top trend in restaurants for 2015, “locally sourced meats and seafood” (National Restaurant Association, n.d.). Consumers are aware of the benefits of pasture-raised livestock products, which Conner and Oppenheim (2008a, 2008b) define as animals that spend their lives on pasture and consume forage for most or all of their lives, which closely resembles the USDA grass-fed marketing claim (USDA, 2007). Conner and Oppenheim (2008a) found that mid-Michigan consumers frequenting retail outlets that sell alternative meat products were aware

of the beneficial attributes of pastured meat products. Additionally, respondents in a Leopold Center for Sustainable Agriculture survey were at least somewhat aware of the positive animal-welfare and health characteristics of pasture-raised beef and dairy (Pirog, 2004). Moreover, willingness-to-pay studies show that consumers will pay a premium for grass-fed beef products (Cox et al., 2006; Gwin, Durham, Miller & Colonna, 2012), particularly when having prior knowledge of or presented with information about the nutritional benefits of grass-fed beef (Evans, D'Souza, Collins, Brown, and Sperow, 2011; Gwin et al., 2012; McCluskey, Wahl, Li, Wandschneider, 2005; Umberger, Boxall & Lacy, 2009; Xue, Mainille, You, & Nayga, 2010) and production practices (Gwin et al. 2012; Umberger et al. 2009). Overall, a review of the literature concerning awareness and the willingness to sacrifice more for access to grass-fed beef demonstrates an endorsement of these practices. In other words, there is market demand. This combined with the aforementioned environmental and social benefits reflects the significant position within the local food movement that grass-fed beef has. Therefore, this research will use grass-fed beef as an inlet to studying one aspect of the local food market that is important not only in regards to understanding the increasing desire to match positive-values with how food is grown and produced, but also as a means of understanding how to operationalize environmentally and socially sustainable practices.

Michigan. Along with the rest of the nation, local food systems and grass-fed beef markets are growing throughout Michigan. The number of Michigan farmers markets has increased over three fold in less than 15 years, from 90 markets in 2001 to over 300 in 2014 (Michigan Farmers Market Association, 2015). As of 2012, 410 farms in Michigan sold products through CSAs (USDA, 2012) and during the 2011-2012 school year 1,159 schools participated in farm-to-school programs (USDA Food and Nutrition Service, n.d.a.).

This growth in local food systems can have a tremendous effect on the state economy. According to a Michigan Land Use Institute and Michigan State University study,

> … if Michigan farms tripled the relatively low volumes of fruits and vegetables going to higher-value fresh markets in Michigan, the state's net farm income could increase by 16 percent, or $164 million annually. As farms spent that new income at local restaurants, stores, doctor's offices, and the like, they would stimulate nearly 1,900 new jobs. (Cantrell, 2009, p. 6)

The state of Michigan recognizes the economic potential of local food systems. The Good Food Charter, organized by the Michigan State University Center for Regional Food Systems, has identified 6 goals to be achieved by 2020 that are focused on increasing the resiliency and sustainability of the state's food system, including that 20% of food consumed within Michigan will be produced by Michigan farmers, and that 20% of food at Michigan institutions will be sourced from Michigan farmers and processors (Michigan Good Food Charter, 2014). Likewise, the Grand Vision's Food and Farming Network has set the goal that by 2020, 20% of food consumed within northwest Michigan will be produced within that same region (Food and Farming Network, n.d.). The Grand Vision is a public-private partnership outlining a united vision on the future of transportation, land use, environmental stewardship, and economic development in Antrim, Benzie, Grand Traverse, Kalkaska, Leelanau, and Wexford counties (The Grand Vision, 2015).

As with local foods, grass-fed beef is a growing industry in Michigan owing to growing consumer awareness and farmers adopting grass-fed beef production practices. Research shows that features of pasture-based meat production practices are valued by Michigan consumers, such as improved animal welfare, eliminating the use of unnecessary hormones and antibiotics, and

environmental stewardship (Conner, Campbell-Arvai, & Hamm, 2008a). Additionally, Michigan consumers patronizing stores selling pastured meat products are willing to pay a premium for pasture-based meat and dairy (Conner & Oppenheim, 2008a, 2008b). The term "pastured" in this study refers to animals primarily consists of pasture, similar to "grass-fed". In addition to consumers' appreciation of pasture-based meat products, there are a number of grass-fed beef producers in the state of Michigan. Eatwild.com, a site dedicated to providing information on pastured animal products, lists 30 Michigan farms raising pasture-finished beef (Robinson, 2015). With growing consumer demand and increasing numbers of producers raising grass-fed beef, Michigan is well situated for a thriving local grass-fed beef market.

Statement of the Problem

The grass-fed beef market is still a small, but increasingly prominent segment in alternative food markets. The Wallace Center Pasture Project (as cited in Williams, 2015), has determined that grass-fed beef sales accounts for only 3-6% of total national beef sales. However, Williams (2014) also claims that the grass-fed beef market is currently growing at 25-30% each year. Due to the rapid increase of the grass-fed beef market in conjunction with the potential to positively impact local economies, the environment, and social sustainability, it is important to understand how local grass-fed beef markets are developing to identify current and potential barriers and inform positive future growth. Additionally, while the grass-fed beef market is growing, there is little knowledge and literature about the grass-fed beef middle-supply chain, and virtually no literature about the emerging grass-fed beef market in Michigan. As processors, distributors, restaurants, and retail establishments are all essential in the chain of transforming cattle on farm to the products consumers purchase, it is important to explore their role in the local grass-fed beef market, which is the purpose of this research.

One increasingly popular method of exploring emerging alternative food markets is through the lens of values-based food supply chains (value-chains). Value-chains differ from traditional supply chains due to the equitable, strategic, and mutually beneficial partnerships between producers and their associated supply-chain partners (Stevenson & Pirog, 2013). United by shared goals and common personal and business values, value-chains typically produce and sell differentiated food products (Stevenson & Pirog, 2013) that attract consumers seeking out unconventional food. Therefore this research sets out to understand how the local grass-fed beef market is developing in Michigan by using a value-chain framework, and will contribute to the literature on grass-fed beef markets and identify barriers preventing faster market growth.

Significance of the Problem

Increasing the market share of locally raised grass-fed beef has the potential to increase community and regional economic, environmental, and social sustainability by helping to strengthen local economies, improve environmental stewardship of grasslands, and fulfill the social desire for healthy food products raised with high animal welfare standards.

Medium sized farmers can benefit by participating in local grass-fed beef markets where they can provide consumers with an increasingly demanded product and potentially receive price premiums. Additionally by adopting a value-chain framework, these medium-sized farms that have been declining throughout the United States can access new market opportunities. Too large to participate in direct-to-consumer markets and too small and not suited for conventional markets, mid-sized farms that operate within the value-chain framework can find market success in intermediated food markets (Stevenson, Clancy, King, Lev, Ostrom & Smith, 2011), where farmers sell their differentiated food products to regional food distributors or directly to retailers such as restaurants and grocery stores (Low & Vogel, 2011). Intermediated markets, which

account for three times the local food sales as direct-to-consumer markets (Low & Vogel, 2011), result in large quantities of alternative food products entering the market, increasing the available quantity and accessibility of local, alternative food products, and providing the potential for alternative markets to grow.

The northwest region of Michigan's Lower Peninsula serves as an ideal area to explore the local grass-fed beef value-chain as the Grand Vision is currently working to expand the local food system in that region. Concurrently, a USDA SARE (Sustainable Agriculture Research and Education) grant is working to expand local grass-fed beef production and develop a pilot value-chain in the same area. As producers and consumers have been the subject of much research on the development of local food systems and grass-fed beef value-chains (e.g. Gwin, 2009; Lozier, Rayburn, & Shaw, 2004, 2006; Conner & Oppenhein, 2008a, 20008,b; Evans et al., 2011; Gwin et al., 2012), a better understanding of the middle value-chain (i.e. processors, distributors, and restaurant and retail outlets) in northwest Lower Michigan will strengthen the local grass-fed beef value-chain, while providing useful information to other developing local meat value-chains throughout the country.

Research Questions

Therefore, the purpose of this study is to assess present state of the local grass-fed beef middle value-chain in northwest Lower Michigan. The grass-fed beef middle value-chain includes processors, distributors, restaurants, and retail businesses. To fulfill the purpose of the study a mixed-methods approach was implemented to answer the following research questions:

1. What values permeate the local grass-fed beef middle value-chain?
2. What is the nature of the local grass-fed beef middle value-chain relationships?

3. What are the middle value-chains' perceived barriers to a viable local grass-fed beef market?

Study Limitations

Although this research tried to be as comprehensive as possible, there are a few limitations of this study. First of all, the breadth of this study was too wide considering the amount of time allocated to complete the study. More detailed results could have been achieved by focusing more narrowly on one or two of the identified research questions or focusing on just one of the middle value-chain sectors. Additionally, for a number of reasons, this study was not able to include all local grass-fed beef middle value-chain members in the study region. Future long-term studies may benefit by identifying and including all of the local grass-fed beef middle value-chain actors in order to get a more accurate picture of the regional grass-fed beef market evolution. The Grass-fed Beef Belief Survey was not as relevant to all middle value-chain participants as the researcher originally thought, and perhaps another survey may have been more applicable. The New Ecological Paradigm Survey did not generate any notable results in regards to trends between middle value-chain sectors' environmental worldviews. A better application of the survey would be to conduct a state or multi-state survey of the grass-fed beef middle value-chain in order to better discern if one's environmental worldview is a relevant value uniting or separating the grass-fed beef value-chain sectors.

Terms

Aggregator – "an entrepreneur or business that amasses product for distribution and marketing" (Day-Farnsworth et al., 2009 p.i)

Alternative meat production methods – production methods distinguishable from conventional methods that result in a product with differentiated attributes that may encourage price premiums. Unique attributes may include "nutritional, environmental, quality, human health, and/or animal welfare" advantages (Mathews & Johnson, 2013, p. 2). Alternative production methods include natural, organic, and grass or forage fed production (Mathews & Johnson, 2013).

Conventional beef production – "traditional feedlot production of grain-fed beef in which steers and heifers receive feed rations consisting largely of grain-based energy and protein to achieve maximum weight gains at the lowest possible cost while in the feedlot" (Mathews & Johnson, 2013 p.4)

Direct-to-consumer marketing – farmers marketing their products directly to the consumer (e.g. "use of roadside stands, farmers' markets, on farm stores, and community-supported agriculture arrangements" (Low & Vogel, 2011, p. i))

Grass (forage) fed – "Grass and forage shall be the feed source consumed for the lifetime of the ruminant animal, with the exception of milk consumed prior to weaning. The diet shall be derived solely from forage consisting of grass (annual and perennial), forbs (e.g., legumes, Brassica), browse, or cereal grain crops in the vegetative (pre-grain) state. Animals cannot be fed grain or grain byproducts and must have continuous access to pasture during the growing season. Hay, haylage, baleage, silage, crop residue without grain, and other roughage sources may also be included as acceptable feed sources. Routine mineral and vitamin supplementation may also be included in the feeding regimen. If incidental supplementation occurs due to inadvertent exposure to non-forage feedstuffs or to ensure the animal's wellbeing at all times during adverse environmental or physical conditions, the producer must fully document (e.g., receipts,

ingredients, and tear tags) the supplementation that occurs including the amount, the frequency, and the supplements provided" (USDA AMS, 2007, p. 58637).

Grass-finished – "Grass-finished cattle have grazed only on grass, pasture land, or other forages and, most importantly, have been fattened only on grass or forages to achieve adequate levels of finish to carcasses within an economically feasible time prior to slaughter" (Mathews & Johnson, 2013, p. 8)

Intermediated marketing – farmers marketing their products through a middle party (e.g. "farmers' sales to local retail, restaurant, and regional distribution outlets") (Low & Vogel, 2011, p. i)

Local grass-fed beef middle value-chain– for the purpose of this research, the local grass-fed beef middle value-chain is the group of processors, distributors, restaurants, and retailers that process, distribute, and sell grass-fed beef produced within Michigan

Mid-sized farms – Typically considered farms grossing between $1-0,000 and $250,000 a year (Kirschenmann, Stevenson, Buttel, Lyson, & Duffy, 2005).

Natural (meat or poultry) –"A product containing no artificial ingredient or added color and is only minimally processed. Minimal processing means that the product was processed in a manner that does not fundamentally alter the product. The label must include a statement explaining the meaning of the term natural (such as "no artificial ingredients; minimally processed")" (USDA Food and Safety Inspection Service, 2014). The USDA natural standards do not apply to how an animal is raised (Mathews & Johnson, 2013).

No antibiotics – "The terms "no antibiotics added" may be used on labels for meat or poultry products if sufficient documentation is provided by the producer to the Agency demonstrating

that the animals were raised without antibiotics" (USDA Food and Safety Inspection Service, 2014).

No hormones – "The term "no hormones administered" **may** be approved for use on the label of beef products if sufficient documentation is provided to the Agency by the producer showing no hormones have been used in raising the animals" (USDA Food and Safety Inspection Service, 2014).

Organic Livestock – "The USDA organic seal verifies that producers met animal health and welfare standards, did not use antibiotics or growth hormones, used 100% organic feed, and provided animals with access to the outdoors." (USDA Agricultural Marketing Service, 2013)

Pasture-raised – The USDA has not defined 'pasture-raised' (USDA, Agricultural Marketing Service, 2012), however Conner & Oppenheim (2008b) distinguish pasture-raised from conventional livestock by animals that spend most of their lives outdoors and primarily consume grass or pasture.

Product differentiation – distinguishing a product from other products by highlighting unique characteristics

Values-based food supply chains – strategic business partnerships between producers of differentiated food products and their supply-chain partners based on mutual benefit, high levels of trust between parties, profit equity, and shared values (related to their food product and business operations) (Stevenson & Pirog, 2013)

Traditional supply chain – operate under win-lose conditions where business partners try to maximize their individual profit by purchasing for less and selling for more. Typically welfare and profits are not distributed equally throughout the supply-chain (Stevenson & Pirog, 2013)

Values – For the purpose of this research, particularly regarding research question 1, values are understood in two ways. One definition is that from ethics.com of – "Core beliefs that guide and motivate attitudes and actions". A modified definition of the ethics.com definition would be – things of importance (but not necessarily core beliefs) "that guide and motivate attitudes and actions" (Ethics and Compliance Initiative, 2015).

Chapter 2: Literature Review

For the purpose of this study, this literature review is broken down into the following areas: First, a review of value-chain literature, followed by an overview of alternative meat and local food use in the middle value-chain, beginning with small scale meat processing, followed by distribution, restaurants, and retailers.

Framing business relationships around a value-chain model can help alternative food markets, such as the local grass-fed beef market in Lower northwest Michigan, find success. Focusing on more than just profit, value-chains possess characteristics that lead to collaborative, long-term, mutually beneficial business relationships. A number of case studies have explored a wide variety of value-chain scenarios and have identified successful features of value-chains as well as barriers to market success. Additionally, this literature review examines the different components of the middle-value chain in order to better understand the current status of, barriers to, and best practices of processors', distributors', restaurants' and retailers' use of local grass-fed beef, alternative meats, and local foods. Although each sector experiences its own unique challenges to successfully participating in these alternative food markets, many have found success by collaborating, supporting other value-chain partners, developing relationships based on trust and open communication, developing efficient logistical strategies, and adopting creative methods for addressing supply and demand inconsistencies.

Values-based Food Supply Chains

The term *values-based food supply chain* originated with Agriculture of the Middle, a movement working to support and strengthen the mid-sized farms and ranches that have been slowly disappearing from the nation's agricultural landscape. Value-chain relationships typically

develop around differentiated alternative food products, and are characterized by long-term business commitments based on equity, reciprocity, and common values. Value-chains attempt to find a balance between commodity and direct-to-consumer markets, striving scale for and efficiency, while maintaining a connection to the farmers and the values associated with the food products (Stevenson et al., 2011; Stevenson & Pirog, 2013). By focusing on value-chains rather than typical supply chains, parties that are characterized as agriculture of the middle can work together to build successful, synergistic, long lasting business partnerships that lead to success for all players in the value-chain (Agriculture of the Middle, 2012; Stevenson and Pirog, 2013).

The value of value-chains. Operating as part of a value-chain offers market opportunities for medium-sized farms and producer networks. As demand for high quality, alternative food products increases, mid-sized farmers, who have the ability to produce larger volumes of specialized food products while maintaining quality, can gain market access through product differentiation (Stevenson et al., 2011). Furthermore, value-chains offer opportunities for small farmers to form producer networks, allowing them to reach larger markets through product aggregation while also creating opportunities for producers to learn from each other (Flaccavento, 2009), and to potentially share expenses such as marketing costs (Lerman, 2012).

Additionally, because of their collaborative nature, value-chains can positively impact supply-chain relationships. Nyaga, Whipple, and Lynch (2010) examined the effects of collaborative relationships on supply chains, as shown in Table 1, and concluded that collaboration in the form of joint relationship effort, dedicated investments, and information sharing can improve trust and relationship commitments between buyers and suppliers. High levels of trust and commitment within supply-chains can in turn improve satisfaction with supply-chain relationships, performance, and end results (Nyaga, Whipple & Lynch, 2010). This

study demonstrates that collaborative relationships, which are common in value-chains, can lead to satisfying business relationships and successful results.

Table 1
Results of collaborative activities between buyers and suppliers (Nyaga et al., 2010)

Collaborative Activity	Result
Joint relationship effort	Improves trust with buyers and suppliers
Dedicated investments	Improves relationship commitments
Information sharing	Improves relationship commitments and trust for buyers and suppliers
Commitment	Improves satisfaction with relationships
Commitment	Improves performance for buyers
Trust	Improves satisfaction with relationships, results, and performance

Finally, value-chains can positively impact surrounding communities. Medium-sized farms and cooperating small scale farms are environmental stewards of their farmland, and can help drive community and economic development in areas with strong agricultural ties (Stevenson et al., 2011). Additionally, with the capacity to produce larger quantities of food compared to small farms selling direct-to-consumer, mid-sized farms and their value-chain partners are able to sell to larger institutions, improving food access (Lerman, 2012).

Value-chain characteristics. Value-chains are defined by key characteristics that distinguish them from conventional supply-chains. First, as their name suggests, value-chain partners are united by shared values (Conner, Sevoian, Heiss, & Berlin, 2014; Flaccavento, 2009; Stevenson & Pirog, 2013) associated with both the food product and business practices (Stevenson & Pirog, 2013). Additionally, value-chains often sell alternative food products that

can be distinguished from commodity foods. Food products can be differentiated a number of ways, for instance by unique characteristics reflecting personal values such as production practices that promote environmental stewardship and animal welfare standards, or food attributes such as high quality or specialty food products (Flaccavento, 2009; Stevenson & Pirog, 2013).

Value-chain business relationships differ considerably from those of typical supply chains. Value-chain partnerships are characterized by long lasting relationships built on trust, open communication, transparency, shared decision making (Lerman, 2012; Stevenson & Pirog, 2013), and success and profit equity for all value-chain participants (Flaccavento, 2009; Lerman, 2012, Stevenson & Pirog, 2013). Although value-chains can have a larger distance between the farmer and consumer compared with direct-to-consumer markets, value-chains aim to maintain a connection to the farmer during every step of the supply chain (Stevenson et al., 2011). Additionally many successful value-chains tend to be coordinated by one value-chain partner that facilitates the value-chain relationships and coordinates the movement of product from the farmer to the end user (Diamond & Barham, 2011; Jablonski, Perez-burgos, Gómez, 2011; Lerman, 2012; Stevenson, 2013; Stevenson & Lev, 2013).

Value-chain best practices. Value-chain literature often highlights strategies important to value-chain market success. Although each value-chain operates under a unique set of circumstances, many of the best practices identified in the literature are applicable to most value-chain scenarios.

To begin, an essential aspect of all value-chains, and especially meat value-chains, is proper infrastructure development. According to Flaccavento (2009) “The lynchpin in any value-chain is the infrastructure (and the system) that moves products from farms to markets, in the

form required by the buyers. This usually involves some combination of processing, aggregation, and distribution" (p. 29). Access to materials that facilitate moving the product through the supply-chain, such as processing equipment, refrigerators, freezers, and trucks are essential to a successful value-chain.

Adequate business experience and skills are necessary for value-chains to thrive. Relevant skills include strategic planning, employee training, and coordination between many parties (Diamond & Barham, 2011; Falat, 2011). Individuals working with value-chains, such as small business and economic development agencies, cite business savvy, managerial experience, and displaying attributes that are likely to result in funding (credit, character, ability to repay) as necessary for value-chain success (Hardesty et al., 2014).

Finally, many of the value-chain characteristics mentioned in the previous section have been successfully put into practice with various value-chain models. Many value-chains promote their distinguishing attributes, setting them apart from traditional supply-chains. Some value-chains differentiate based on geography (Falat, 2011; Gunter, Thilmany, & Sullins, 2012; Hardesty et al., 2014; Jablonski et al, 2011), such as the La Montanita Co-op, a distributor coordinated value-chain selling only food produced within their regional foodshed in New Mexico (Diamond & Barham, 2011). Others promote the quality, freshness, (Falat, 2011; Hardesty et al., 2014), or healthfulness of their products, as well as particular production practices, such as organic (Hardesty et al., 2014). Additional best practices include commitment to fair pricing (Jablonski et al, 2011; Hardesty et al., 2014), transparency between value-chain partners, (Jablonski et al, 2011), and maintaining product identity throughout the value-chain (Diamon & Barham, 2011).

Value-chain barriers. There are many common barriers to establishing and maintaining a productive value-chain. A number of barriers occur within the value-chain as partners struggle to establish and maintain the key value-chain characteristics. First, it can be difficult for individuals to fulfill the most fundamental step of value-chain creation, finding and maintaining relationships with the right value-chain partners (Stevenson et al., 2011; Stevenson & Pirog, 2013). In a study examining farm-to-institution value-chains in Vermont, Conner et al., (2014) found that although values are important motivators for participating in the value-chain, farmers, buyers, and non-profit distributors tend to have the most similar values whereas the values of for-profit distributors differ, and are primarily focused on profit, negatively affecting their relationships with farmers (Conner et al., 2014). Additionally value-chain partners can find it difficult to form relationships based on trust, transparency, and shared decision making (Stevenson & Pirog, 2013) and to establish a fair value-chain pricing structure that is also affordable to consumers (Conner et al., 2014; Stevenson et al., 2011; Stevenson & Pirog, 2013). Value-chains also struggle to effectively differentiate their product and to maintain their brand throughout value-chain (Stevenson et al., 2011; Stevenson & Pirog, 2013).

Value-chains also struggle with establishing efficient and consistent internal operations. To begin, value-chains struggle establishing effective management structures (Stevenson & Pirog, 2013). Producers also encounter infrastructure difficulties, such as acquiring production equipment and identifying processing, packaging, and distribution partners that are of appropriate scale (Hardesty et al., 2014). Producers sometimes struggle complying with food safety requirements (Falat, 2011; Hardesty et al., 2014), and value-chains as a whole find it difficult to establish quality control systems and to uphold standards and certifications throughout the supply chain (Stevenson et al., 2011; Stevenson & Pirog, 2013).

Finally, value-chains face external barriers to development and success. Value-chains may struggle to access capital to support existing operations and growth (Hardesty et al., 2014; Stevenson et al. 2011). They may also struggle to find a market for their differentiated product due to lack of demand (Falat, 2011; Hardesty et al. 2014).

Meat centric value-chains. A number of studies have focused solely on meat centered value-chains, two of which focused solely on beef, one on organic grass and pasture-based meat, and another on pasture-raised livestock. These case studies highlight successful business practices as well as the unique challenges faced by these value-chains.

To begin, all of the value-chains have established and promote distinguishing characteristics which separate them from commodity meat producers, and often serve as the basis of shared values throughout the value-chain. U.S. Premium Beef Ltd., (USPB) a beef producer cooperative, distinguishes themselves by describing their cooperative as "producer-owned" (McCann & Montabon, 2012, p. 40), and provides opportunities for small producers to enter larger markets. The two other producer cooperatives, Country Natural Beef and Good Earth Farms, as well as the Michigan pasture-based livestock value-chain, tend to distinguish themselves based on the quality of the product and their production practices (Conner et al. 2008b; McCann & Montabon, 2012; Stevenson, 2013; Stevenson & Lev, 2013). Additionally, Country Natural Beef promotes their environmental stewardship practices (Stevenson & Lev, 2013) and both Country Natural Beef and Good Earth Farms are characterized by their focus on animal welfare (Stevenson, 2013; Stevenson & Lev, 2013). These values are shared and upheld throughout the value-chain by their supply-chain partners (Stevenson, 2013; Stevenson & Lev, 2013). Producers and consumers participating in the Michigan pasture-based livestock value-

chain tend to share similar values, such as animal welfare, environmental stewardship, and hormone and antibiotic free production practices (Conner et al. 2008b).

Secondly, meat centered value-chains set out to achieve economic fairness between business partners, although how this is achieved varies between models. USPB has focused on equitable sharing of benefits and risks by including all facets of the cattle production process in their membership. For membership, producers must buy one share per head of cattle, and shared decision making is achieved by allocating one vote per member regardless of their number of shares (McCann & Montabon, 2012). Country Natural Beef has achieved price equity by reducing the amount of intermediaries involved in the value-chain and ensuring that profits flow directly to ranchers. Members of the cooperative consult to fulfill production, marketing, and financing operations rather than outsourcing to a third-party, and these consultants hire outside professionals when necessary (McCann & Montabon, 2012; Stevenson & Lev, 2013). Finally, Good Earth Farms ensures that producers receive fair profits through cost-based pricing, determined by adding the cost of production, marketing, transportation, and shipping costs, plus what they consider a fair profit to the farmers (Stevenson, 2013).

Finally, maintaining good relationships with the consumers of values based products will also result in a higher likelihood of success (McCann & Montabon, 2012; Stevenson, 2013; Stevenson & Lev, 2013). For example, Country Natural Beef requires it's ranchers to participate in 3 outreach activities a year (Stevenson & Lev, 2013). Whereas Good Earth Farms focuses on high quality customer service, making a point to respond quickly to emails, sharing food preparation instructions with customers, and ensuring that products arrive solidly frozen at consumer's doors (Stevenson, 2013).

Meat value-chains also encounter a number of barriers. Country Natural Beef has struggled maintaining a mutually supportive relationship with their large retail customer, Whole Foods due to the retailer's recent growth (Stevenson & Lev, 2013). Good Earth Farms mostly struggles to carry out business operations while maintaining their farm, and have hopes of growing enough to be able to hire help (Stevenson, 2013). Conner et al., (2008b) interviewed and surveyed individuals participating in Michigan's pasture-based value-chain and found that each sector – farmers, processors, buyers, and consumers – encounters unique barriers to their operations, which are listed in Table 2.

Table 2
Challenges experienced by Michigan's pasture-based meat value-chain (Conner et al. 2008b).

Value-chain partner	Challenges
Producer	Access to processing
	Production cost
	Maintaining consistent supply
	Communication with consumers
	Land security
	Pasture management
Processor	Retaining labor
	Longer aging time
Buyers and Distributors	Identifying whole animal markets
	Seasonality
	Negative consumer perceptions
	Farmer to consumer connections
Consumers	Availability
	Price
	Awareness of products
	Interest in products

Social embeddedness in value-chains. Numerous articles have connected the strong values and social motivations associated with value-chains with the concept of social embeddedness (Conner et al., 2014; Falat, 2011; Hinrichs, 2000; Sage, 2003). Social

embeddedness refers to the social connections present in economic transactions (Conner et al., 2014). According to Sage (2003),

> Social embeddedness conveys principles of social connectivity, reciprocity and trust, characteristics which are essential to all economic life in general, but which fundamentally underpin grassroots and "alternative" initiatives such as local exchange trading systems (LETS), community development banks, and direct agricultural markets. (p. 47)

Hinrichs (2000) compares this concept with two additional economic concepts, marketness and instrumentalism. High marketness refers to the motivation to make decisions based purely on price, and high instrumentalism is the propensity towards individualistic decision making (Hinrich, 2000). The lower marketness and instrumentalism, the more non-economic and non-individualistic factors play into decision making (Hinrich, 2000).

The value-chain case-studies highlighted in this literature demonstrate adherence to social embeddedness principles. The business values upheld by the value-chains (e.g. trust and reciprocal relationships) and the ethical values held by value-chain members (e.g. animal welfare, and environmental stewardship) that drive value-chain operations indicate that non-economic factors can play a large role in value-chain decision making, indicating lower levels of marketness and instrumentalism compared with conventional supply chains.

For example, in Conner et al.'s (2014) study of Vermont farm-to-institution (FTI) value-chains, price was noted as an important barrier that could impact participant in FTI value-chains. Yet the study determined that principles of social embeddedness could overpower economic based decisions to some extent, concluding that "While FTI efforts are constrained by price,

buyers were more likely to engage in FTI when price necessities were offset in part by community goals" (p. 16).

The Middle Value-chain: Processors, Distributors, Restaurants and Retailers

Despite the fact that demand for locally sourced and alternative meat is rising (Conner and Oppenheim, 2008a, 2008b; Cox et al. 2006; Martinez et al, 2010; Mathews & Johnson, 2013; McCluskey et al., 2005; National Restaurant Federation, n.d.), market growth has been slow. For instance the percentage of livestock operations that participate in direct-to-consumer or direct-to-retailer markets is much smaller than producers of other agricultural products, 6.9% compared to 44.1 percent (Martinez et al., 2010). In order to better understand the local grass-fed beef market, the following review explores characteristics of alternative meat and local food processing, distribution, and restaurant and retail use.

Processors. Although there are many factors that contribute to the slowly growing local grass-fed beef market, niche meat processing is recognized as a major culprit. There are three facets to this problem. First, conventional meat processing dominates in the United States, and for numerous reasons impedes processing for smaller meat markets. Secondly, producers have encountered many problems with existing small meat processors. And finally, existing or prospective meat processors constantly combat challenges to their operations.

Small-scale niche meat processing is complicated, with problems rooted in conventional meat supply chain infrastructure. Although there are a number of small, 549, and medium, 69, sized federally inspected slaughter facilities throughout the United States, 55% of livestock are processed at 14 large facilities which process over 1 million head of livestock per year (Johnson, Marti, & Gwin, 2012). Conversely, less than 1% of all U.S. cattle are slaughtered and processed at small facilities, which have a capacity of less than 10,000 cattle processed per year (Johnson et

al., 2012). According to a USDA Economic Research Service article on small-scale meat processing (Johnson et al., 2012), “Plants that process the majority of livestock in the United States are often high-volume, technology-intensive operations and are almost exclusively federally inspected” (p. 10). Even if small-scale meat producers were located near large processors, farmers cannot make use of their facilities which are not equipped to handle small scale inputs (Johnson et al., 2012). Thus, the conventional United States meat-processing infrastructure is not currently situated to serve the growing small-scale niche meat market.

Producer experienced challenges to processing. Processing is often deemed a major bottleneck to the expansion of niche meat markets. Many small-scale livestock producers cite availability of slaughter and processing facilities as a major impediment to expanding their businesses (Gwin, 2009; Gwin, Thiboumery, & Stillman, 2013; Johnson et al., 2012; Saul et al., 2014). Producers must often travel long distances to the nearest processing facility that meets their processing needs which costs them in time and money (Conner, 2005; Joannides, 2013; Local Food Research Center, 2012). Compounding this problem, existing small-scale processors may not offer needed or desired services, such as the ability to smoke meats or possessing Organic Certification (Joannides, 2013; Local Food Research Center, 2012; Sleeping Lion Associates, 2005).

The perceived need for additional processing capacity has spurred a multitude of feasibility studies assessing the practicality of opening new processing facilities (Dickenson, Joseph, & Ward, 2013; eXtension, 2015; Local Food Research Center, 2012; Saul et al., 2014; Sleeping Lion Associates, 2005). The results of these studies are generally mixed, with some indication that there is enough demand and capacity to support new processing facilities (Local

Food Research Center, 2012; Saul et al., 2014), while others determined that new processing facilities would not be feasible (Sleeping Lion Associates, 2005; eXtension, 2015).

Small-scale alternative meat producers encounter additional problems with their existing processors. Some producers have indicated that their processors produce a poor quality end product due to inadequate trimming and inconsistent cutting, as well as poor packaging presentation and labeling, which is unacceptable for a market that is paying a premium for such products (Sleeping Lion Associates, 2005). Also, due to the seasonality of some types of alternative meats, producers have difficulty scheduling with their processors during peak season (Conner, 2005; Gwin et al., 2013; Joannides, 2013; Sleeping Lion Associates, 2005). Finally some producers argue that their processors are too expensive, forcing them to charge more for their products (Gwin & Thiboumery, 2013).

Processor experienced challenges to processing. Although the many problems producers encounter with small-scale meat processing have received much attention, recent research has explored these problems from the processor perspective, illuminating a disconnect between the experiences of small-scale producers and processers, and indicating the need for increased communication, commitment, and collaboration between these essential value-chain participants.

In response to the producer complaint that there are not enough processing facilities, processors claim that there is not enough consistent supply year round to operate as it is, let alone to open more facilities or to expand (eXtension, 2015; Gwin, Thiboumery, Garrison, & McCann, 2011; Gwin et al., 2013; Johnson et al., 2012). Small processors need to process at least 400-450 head of cattle each year to maintain economic sustainability (Gwin et al., 2011; Gwin et al., 2013). Gwin and Thiboumery (2013) explained:

> In some parts of the country, access to processing may be very challenging for farmers who market their own meat and need it processed under inspection. Yet even in those places, there may not be enough livestock, enough of the year, at a high enough price, to cover the costs of providing those services – to support a new small plant. There are significant barriers to entry because meat processing is a high-risk, thin-margin business, and it is very difficult for a new plant to get started and survive. (p. 991)

Additionally, small-scale meat processors do not have consistent input. Some farmers cannot make their scheduled commitments due to the uncertainty of farming. Because niche meat production is often seasonal, processing demand slows considerably during the winter months, while they have trouble keeping up during busier seasons (Johnson et al., 2012). These issues with supply contribute to the difficulty in retaining a well-trained staff. There is typically a high degree of employee turnover at small-scale meat processing facilities, compounded by the shortage of skilled meat processors (Dickenson et al., 2013; Johnson et al., 2012; Local Food Research Center, 2012; Prevatte, 2009).

Existing and aspiring processors often do not possess the necessary skills to operate a successful plant, and are further challenged in accessing capital and maintaining their regulatory knowledge. Many processing plant owners or prospective owners do not have the business and management skills or technical knowledge to efficiently operate a processing facility (Holcomb, Flynn, & Kenkel, 2012; Local Food Research Center, 2012; Prevatte, 2009). Furthermore, existing or proposed processing plants often have difficulty acquiring capital to create or expand the size or offerings of their business (Local Food Research Center, 2012; Prevatte, 2009). Finally, processors must comply with many regulations and have cited sustaining knowledge of and following current regulations as a barrier to business (Prevatte, 2009).

Solutions to the processing problem. Clearly the processing problem is experienced differently by producers and processors and indicates a gap in understanding between value-chain partners. Gwin and Thiboumery (2013) summarize this predicament. “While farmers see limited processing as the problem, small processors see it differently: they can barely survive, much less expand capacity or services, because they often lack the steady, consistent business required for profitability” (p. 993). Case studies as well as industry experts illuminate various best practices that can alleviate processing problems for niche meat markets.

To begin, it is suggested that producers work together to tackle processing problems they may experience (Gwin et al., 2011; Johnson et al., 2012; Saul et al., 2014). Groups of producers can coordinate transportation to distant processors in order to save time and money (Gwin et al., 2011). Additionally, producers interested in taking processing into their own hands can collaborate on rehabbing existing plants to meet their collective needs, or work together to establish a mobile slaughtering unit (Gwin et al., 2011; Saul et al., 2014). Finally, as many processers do not have a consistent supply of animals, farmers can aggregate their products, increasing the volume and consistency of supply to processors (Gwin et al., 2011; Johnson et al., 2012).

Processors can also take action to improve their business. Steps processers can take to increase their success in the marketplace include opening a retail store on site, focusing on marketing and developing a brand, developing a plan to sell more non-primal cuts, and offering various types of product certifications (organic, natural, etc.) (Local Food Research Center, 2012). Additionally, processors can focus on producing a consistently high quality product and can improve their customer service (Joannides, 2013; Gwin et al., 2013). Developing a scheduling plan unique to their operations as well as implementing a seasonal sliding pricing

scale could help to rectify issues with supply and other scheduling mishaps (Gwin & Thiboumery, 2013; Gwin et al., 2013). For instance one processor, Lorentz Meats, over schedules to accommodate cancelations and then works overtime if all appointments show (Gwin et al., 2013). Finally, many successful processing operations have key producers, or "anchor customers" (Gwin et al., 2013, p. 11) that they depend on for the majority of their supply. This can either be an outside supplier, or in some cases, the processor themselves may raise and supply a majority of animals for processing (Gwin et al., 2013).

In addition to individual action, producers and processors can work together to develop committed, collaborative relationships (Gwin & Thiboumery, 2013; Gwin et al., 2013). Producers can commit to supplying a certain number of animals, ensuring that processors have adequate business (Dickenson et al., 2013; Gwin & Thiboumery, 2013). With the knowledge that they will have a consistent volume of supply, processors can being to add additional services to their offerings, better meeting the needs of their customers (Dickenson et al., 2013; Gwin & Thiboumery, 2013; Gwin et al., 2013). Many successful processors have recognized the mutual benefit of providing producers with marketing and distribution assistance, resulting in more successful producers, and thus more business for the processor (Gwin & Thiboumery, 2013; Gwin et al., 2013). In some instances, producers have also made the effort to support their processor, investing financially to help fund improvements that the farmers will then benefit from (Gwin & Thiboumery, 2013; Gwin et al., 2013). Overall, with cooperative efforts producers and processors can commit to reciprocal relationships characterized by trust and loyalty in which both parties invest in the other, benefiting the value-chain as a whole.

Finally, an additional suggestion to improving small-scale and niche meat processing given by Johnson et al. (2012) is the use of mobile slaughtering units (MSU), which are

slaughtering facilities that are can travel to different locations to slaughter animals. MSUs can either travel to individual farms or to a centralized location and can slaughter up to 10 cattle or up to 25 hogs per day. After two days on the road, MSUs must take the carcass to a cut and wrap facility. As of 2012, there were 10 federally inspected MSUs in the country that can slaughter red meat (Johnson et al., 2012).

Additional efforts to improve small-scale meat processing. A number of efforts have been made by outside actors to improve small-scale and niche meat processing, including the creation of processing guides, and for-profit and non-profit groups that focus on processing assistance.

Gwin et al., (2011) and Holcomb et al. (2012) have created a business planning guide and feasibility template to assist aspiring processors. These tools were created in response to the demand for improved processing in the small-scale/niche processing sector and the acknowledgement by niche meat processing experts that processors need help with these particular skills. According to Holcomb et al. (2012),

> Most do not understand the factors that impact plant operations and ownership, nor do they have the skills or experience to make sound financial decisions for a plant. Plant owners must consider the impacts of balancing a variety of potential business activities under one roof: custom packing for multiple species (cattle, hogs, sheep, goats, bison, etc.), handling wild game (e.g., deer, elk and wild hogs), and possibly operating a retail shop. (p. 2)

Additionally, groups outside of the value-chain, such as non-profit and for-profit groups, are successfully implementing programs to improve small-scale meat processing (Gwin &

Thiboumery, 2014). The Vermont Meat Processing Working Group, NC Choices, the Northwest Livestock Processing Service Company, and the National Meat Processor Assistance Network demonstrate how outside actors can have widespread positive impacts on the industry. Some services these groups provide include general processing information, technical assistance to processors, connecting value-chain actors, and bringing together processors as well as other value-chain parties to learn from each other at conferences and similar events (Gwin & Thiboumery, 2014). Gwin and Thiboumery (2014) applaud these innovative groups that are greatly influencing meat processing.

> These efforts, we suggest, are vibrant examples of institutional entrepreneurship: they harness resources, catalyze collaboration, and spur action that would not have happened. They are also transformative, helping shift not only how producers and processors work together, but also how their own agencies and organizations engage with local meats as a subset of local food. (p. 11)

Distributors. Distribution services play an important role in strengthening and growing local and alternative food systems by improving the accessibility of these products and by bridging the gap between producers and end users. Distributors aggregate products from small and medium sized producers, making larger volumes available to larger buyers, such as restaurants, retail stores, and other food serving institutions. Additionally, they typically facilitate relationships between value-chain parties (Day-Farnsworth, McCown, Miller, & Pfeiffer, 2009), helping farmers to find buyers for their products, and assisting restaurants, retailers, and institutions in finding farmers producing the products they desire in the quantities they need. Additionally, food distributors have the unique ability to adopt important characteristics of the industrial food system while maintaining the connection to the food product by developing scale

and efficiencies while carrying forth the values associated with the production practices and the food products themselves (Day-Farnsworth et al., 2009). Despite the potential for local and regional food distributors to grow regional food markets Day-Farnsworth et al., (2009), note that this group is often a missing link in the value-chain.

> Scaling up local and regional food systems requires the development of organizational and production capacity across the local food supply chain. In particular, this supply chain lacks mid-scale, regional aggregation and distribution systems that move local food into mainstream markets in an effective and cost efficient manner. (p. i)

A number of studies have explored the role of distributors in expanding alternative and local food markets, with a few studies looking primarily at meat distribution, while the rest focus more generally on local foods. Similar to the other sectors operating in local and alternative food value-chains, distributors face a number of challenges to gaining market foothold, but have also established a number of best practices that aid in developing more efficient and successful distribution systems.

Barriers. Two case-studies discussed in the previous section involve grass-fed beef and pastured livestock distribution (Conner et al., 2008b; Stevenson, 2013), illuminating specific barriers associated with meat distribution. Good Earth Farms, a grass-fed beef producer, aggregator, and distributor focusing on internet sales has struggled to identify the best insulated material in which to ship their products that will ensure that customers receive a frozen product (Stevenson, 2013). Additionally, Conner et al. (2008b) identified a number of barriers experienced by Michigan pasture-based livestock distributors and buyers. Their study revealed distributor's difficulty connecting small producers with small restaurant and retail establishments, finding a market for the entire carcass, selling a seasonal product to businesses

that have year-round demand, and finally dealing with negative consumer views of the of quality pasture-raised meat (Conner et al., 2008b).

More generally, local and regional food distributors have found certain logistics associated with food distribution to be challenging. To begin, some must rely on grant funding (Jablonski et al., 2011) indicating a lack of financial sustainability. Local and regional food distributors also struggle attaining capital, which is essential for developing necessary distribution infrastructure such as storage facilities and vehicles (Day-Farnsworth et al., 2009). Additionally, distribution organizations that use online platforms to market and sell their products can encounter barriers to growth and distribution related to website maintenance and inadequate web services. For instance a New York based local food distributor, CNY Bounty, operates an online store which was developed for them by a local university. Yet this website is not set up to take credit card payments, complicating the ordering process and cash flow (Jablonski et al., 2011).

Additional distribution challenges involve connecting and interacting with value-chain partners, as well as maintaining consistent supply. Distributors may have trouble identifying producers which meet their buyers' requirements (Falat, 2011). Additionally some distributors struggle to maintain clear and open communication as well as transparency about their business practices with their value-chain partners (Day-Farnsworth et al., 2009). In regions where production is seasonal and many products are not available year round, distributors are unable to meet consumer demands (Day-Farnsworth et al, 2009). Maintaining adequate supply is further complicated by aggregation which may result in quality variations due to farm to farm inconsistency and the potential for lost source traceability (Day-Farnsworth et al., 2009).

Best practices. Grass-fed beef and local food distributors have found success fulfilling the important niche of aggregator and facilitator, and provide examples of distribution best practices. Local Foods from Local Farms, a non-profit that focuses on providing marketing and distribution services primarily to grass-fed beef producers and processors, has opened up new markets that individual producers otherwise would not have been able to access, such as private schools and universities, and carry out the cumbersome tasks of finding buyers, aggregating local meat products from multiple producers, handling slaughter and processing arrangements and deliveries (Gwin & Thiboumery, 2014).

A number of studies have identified operational strategies to improve local food distribution. In order to deal with the problem of inconsistent quality and accountability, Day-Farnsworth et al. (2009) suggest developing food safety plans and using a centralized facility to do all grading and packing. Additionally, distributors should develop strategies to maintain product differentiation (Diamond & Barham, 2011), develop a strategic plan, and educate employees on the food products they sell (Hardesty et al., 2014). Finally, to address the issue of seasonality, value-chains can focus on food preservation and season extension practices (Day-Farnsworth et al., 2009).

Additional best practices involve maximizing distributors' coordination with their producers and buyers. Some distributors offer business skills assistance for producers (Hardesty et al., 2014; Jablonski et al., 2011), indicating their recognition of the mutual benefits associated with producer success. Finally distributors can facilitate producer and buyer relationships by communicating buyer mandated requirements to the producers, as well as overseeing the implementation of said requirements and food safety regulations (Hardesty et al., 2014).

Restaurants. With projected restaurant industry sales of 709.2 billion dollars in 2015 and with the industry making up 47% of the food dollar (National Restaurant Association, n.d.), restaurants have the ability to play a large role in local food systems. A number of studies have explored restaurant use of local foods, examining demand and frequency of local food use, motivations behind local food sourcing, and barriers to and best practices of local food sourcing. Most studies focus on direct marketing of local foods from producers to chefs, with little focus on intermediated markets or locally raised meats specifically.

There is evidence that local foods are growing in popularity and use at restaurants. Strohben and Gregorie (2003) determined that there is a market for local foods in restaurants and larger food serving institutions in Iowa (Strohben & Gregorie, 2003). A Packaged Facts study (as cited by Martinez et al., 2011) found that 87% of fine dining and 75% of family dining restaurants use locally sourced foods. Restaurant patrons have a growing interest in local foods. According to the National Restaurant Association (n.d.) over 80% of family, casual, and fine dining restaurant operators believe that customer interest in local foods has increased in the last two years. Restaurant use of local meats is also growing. Maynard, Burdine, and Meyer (2003) found that restaurants in Kentucky are open to local meat sourcing. "Survey results suggest receptiveness to local meats by a considerable portion of restaurateurs, particularly in the fine dining segment, where quality is more important than price and chefs often have greater sourcing flexibility" (Maynard et al., 2003 p. 36).

Values and Motivations. Considering the essential role that restaurants and chefs play in growing local food and alternative meat value-chains, it is important to understand their underlying motivations to source locally. Many chef's motivations are rooted in personal values and worldviews, such as the desire to support local businesses (Starr et al., 2003), sourcing

products from farms practicing environmental stewardship (Curtis & Cowee, 2009; Murphy & Smith, 2011; Starr et al., 2003), and valuing the ability to connect with farmers (Curtis & Cowee, 2009; Inwood, Sharp, Moore, & Stinner, 2009). Other are motivated by characteristics they associate with local food products. Many chefs believe local foods to be superior due to their high quality, freshness, and flavor (Curtis & Cowee, 2009; Curtis, Cowee, Havercamp, Morris, & Gatzke, 2008; Duram & Cawley, 2012; Inwood et al., 2009; Maynard et al., 2011; Murphy & Smith, 2011; Starr et al., 2003). Although there is evidence that chefs find value in local food products, they experience barriers to consistently sourcing the products.

Barriers. Much of the literature on restaurant local food use has explored the perceived barriers to local food sourcing, illuminating bottlenecks in the value-chain. One study found that the major barriers to restaurant use of local meats include inconsistent supply and general unreliability of suppliers (Maynard et al. 2003). Studies focused more generally on local foods found similar concerns surrounding supply, including the assumption that desired products are not available locally (Curtis & Cowee, 2009; Curtis et al., 2008; Inwood et al., 2009; Starr et al., 2003; Strohben & Gregorie, 2003) and that for products that are available, farmers could not consistently produce desired volumes (Curtis & Cowee, 2009; Curtis et al., 2008; Inwood et al., 2009; Reynolds & Fields, 2011; Schmit & Hadcock, 2003). Chefs also worry that the quality of local products cannot be consistently maintained (Curtis & Cowee, 2009; Curtis et al., 2008; Schmit & Hadcock, 2003; Strohben & Gregorie, 2003).

Chefs also face logistical issues related to buying local. For instance, many chefs and restaurants cite inconvenience as a reason for not sourcing locally (Reynolds & Fields, 2011; Schmit & Hadcock, 2003; Starr et al., 2003). Similarly, some chefs only want to deal with one supplier or are worried that local suppliers will not provide refunds for subpar products (Starr et

al., 2003). Many corporate owned restaurants cannot make their own sourcing decisions which prevents them from buying local (Curtis & Cowee, 2009, Starr et al, 2003) and others only source from suppliers (Reynolds & Fields, 2011), rather than buying directly from a farmer. Additionally, some restaurants think local products are too expensive (Inwood et al, 2009; Starr et al. 2003). Finally, the literature indicates a lack of communication between producers and restaurants. Specific complaints include chefs not having access to information about what products are available, not knowing where to purchase local products (Curtis & Cowee, 2009; Reynolds & Fields, 2011), and not having access to information on local food prices (Strobhen & Gregorie, 2003).

Best Practices. These barriers are not insurmountable, and research suggests solutions to these barriers as well as restaurant best practices to sourcing local food products. One commonly mentioned best practice and suggested solution is to better connect chefs and producers (Curtis & Cowee, 2009; Duram & Cawley, 2012; Starr et al, 2003). Producers could provide chefs with literature on the type and quantity of products available, and give chefs an opportunity to sample their products (Curtis & Cowee, 2009). Additionally, restaurants that source a large amount of local foods promote their use of local food through their menus and by informing servers about their sourcing practices (Murphy & Smith, 2011), which could be used as a method to explain higher prices, connect consumers to the origin of the foods they serve, and attract consumers looking for food products that align with their particular values.

Finally chefs and restaurants want a supplier that is convenient (Strobehn & Gregorie, 2003), that delivers products on time (Murphy & Smith, 2011; Strobehn & Gregorie, 2003), and that will cater to the needs of the chefs/restaurants (Duram & Cawley, 2012; Murphy & Smith, 2011). Chefs and restaurants also prefer to deal with the least amount of suppliers as possible

(Strobehn & Gregorie, 2003). Many restaurants and chefs currently using local food products prefer to purchase from distributors or some other intermediary that may be able to provide more consistent services than farmers (Inwood et al., 2009; Schmit & Hadcock, 2011) and limit the number of suppliers restaurants must source from

Retailers. Similar to restaurants, retail outlets have the power to bring large quantities of local foods to consumers. According to Martinez et al., (2011), large retailers have begun to tap into the local food market. Wal-Mart, Safeway, Publix, Meijer, Weis Markets, and Spartan Stores, all large national or regional retail chains, have recently launched a local or regional food campaign (Martinez et al., 2011). In addition to these large retailers, Martinez et al., (2011) also suggests that independent grocery stores and food cooperatives are well suited outlets for the local food market.

There is evidence that retailers are specifically interested in grass-fed beef and local meat products. A Local Food Research Center study looking at niche meat processing in North Carolina (2012), found that participating retailers already source niche meat products and plan to increase their sourcing of grass-fed beef. Additionally, Minnesota consumers rated grocery stores as the 3rd most likely place they buy locally raised meat (Joannides, 2013).

Values and motivations. Retailers share some of the same motivations to source locally with restaurants, but are also motivated by particular factors specifically related to retail. Some retailers are motivated by environmental concerns (Dunne, Chambers, Giombolini, & Schlegel, 2011) as well as their desire to support local farmers (Local Food Research Center, 2012) and the local economy (Dunne et al. 2011; Local Food Research Center, 2012). Retailers are also strongly motivated by their consumers' demands and values (Dunne et al. 2011; Local Food Research Center, 2012). For instance North Carolina consumers desire meat without hormones

or antibiotics as well as meat from animals raised humanely (Local Food Research Center, 2012). Additionally, some retailers value the ability to get specialty meat products (Local Food Research Center, 2012), whereas others choose to buy local for purposes of food safety and food quality (Dunne et al. 2011).

Barriers. As with the other middle value-chain stakeholders, there are many barriers to retail use of the local foods. Many perceived barriers, similar to restaurants, deal with available supply. Retailers in North Carolina worry that local meat suppliers will not be able to provide consistent volumes or consistently high quality products (Local Food Research Center, 2012). Additionally, retailers worry that local food supplies won't be able to meet their specific needs. McCallum, Campbell, and MacRae (2014) explain, "Particularly challenging are the needs to lengthen product life, coordinate transport, and aggregate supply" (p. 163). Finally due to the conventional nature of the national food system, consumers are used to having all types of food available at all times. Because local food production is seasonal, local suppliers are unable to provide the same products year round, and are thus unable to meet consumer demands (Dunne et al. 2011; McCallum et al., 2014).

Retail outlets also struggle marketing their local food products. Studies reveal that retailers that sell local foods don't define "local" in the same way (Dunne et al., 2011; McCallum et al., 2014). Additionally, many retailers do not inform consumers of their definition of local and have trouble differentiating local and niche products in their stores (Dunne et al. 2011; McCallum et al. 2014). This lack of consistency and communication about what "local" means could potentially confuse and frustrate consumers.

Finally, developing beneficial and reciprocal relationships, one of the key components of successful value-chains, is difficult for retailers. In reference to their research on a major

Canadian retailer, McCallum et al., (2014) note that "lack of strategic alliances and conditions of trust also create impediments to increasing the volume of local produce available for large retailers" (p. 174).

Best Practices. Many of the proposed retailer best practices involve mutually beneficial relationships with potential value-chain partners. McCallum et al. (2014) suggest that retailers invest in infrastructure that could improve suppliers' ability to get product to the retailer. Additionally, one Canadian retailer has found it beneficial to provide food safety support to local meat producers (McCallum et al. 2014). And finally, by focusing on building trust within value-chain partnerships, retailers could improve relationships with their partners, thus improving the likelihood that retailers' needs are met.

Conclusion

To conclude, a value-chain framework is useful for understanding the complex business relationships of individuals selling alternative food products, such as locally raised grass-fed beef, and for evaluating how such markets can best evolve to serve growing demand. For the purpose of this research, this literature review has examined the middle components of the value-chain, including processors, distributors, restaurants, and retailers. The literature offers very little information specifically on the grass-fed beef middle-value chain, but focuses more broadly on alternative and local meats, as well as local foods. Although many of the insights gained through research on these alternative food markets may be useful for understanding grass-fed beef markets, in order to fully understand the local grass-fed beef market in northwest Michigan, additional research is needed. Additionally, although there have been studies specifically looking at grass-fed beef and alternative meat value chains (McCann & Montabon, 2012, Stevenson, 2013; Stevenson & Lev, 2013), these studies only focus on producer perspectives, and do not

include the valuable experiences of the rest of the value-chain which are needed in order to develop a more holistic perspective of these value-chains, barriers they face, and successful practices. Therefore, this research explores the values, relationships, and barriers of the grass-fed beef middle value-chain in Lower northwest Michigan.

Chapter 3: Methods

Methodology

This research is grounded in the naturalistic inquiry paradigm (Lincoln & Guba, 1985). Naturalistic inquiry takes a post positivist perspective and is grounded in a number of axioms that differentiate this paradigm from the positivist tradition. Thus in order to make sense of methods and approach used in this research it is necessary to explain the underlying assumptions of the naturalistic inquiry methodology.

First, naturalistic inquiry takes the ontological perspective that there are multiple constructed realities rather than the positivist view that there is one single reality out there to be discovered. Everyone experiences reality differently and therefore constructs their own reality. No one person's reality can be the same as another person's reality, hence the term multiple constructed realities. In research, ideally by understanding many individuals' different realities, we can piece together these multiple realities in order to gain a fuller understanding of the research subject (Lincoln & Guba, 1985).

Second, naturalistic inquiry takes the epistemological view that the researcher cannot be separated from the researched. Pure objectivity is never possible, rather the subject of the research and the person conducting the research will inevitably influence each other (Lincoln & Guba, 1985).

Third, those practicing naturalistic inquiry believe that research cannot be generalizable. Lincoln and Guba (1985, pp. 112-119) pose a number of arguments against the practicality of generalizability. They explain that the generalizability requires the belief that everything is governed by natural laws, and typically these natural laws are built by aggregating specific cases. However it is impossible for these laws to be tested exhaustively to verify their applicability. Generalizations are also human constructed, so who is to say that what has been induced from

those specific instances is actually the only generalization fitting the case. As we know, reality is comprised of unlimited constructions, which negates the feasibility of true generalizations. Additionally, generalizations are meant to be applicable regardless of when the generalization is being applied (time) and the context of the situation. Yet things change over time and the context of any situation does effect whether or not the generalization applies. Rather the naturalistic approach is to get as much deep and detailed information as possible which will then allow us to understand whether the knowledge gained through naturalistic inquiry (a working hypothesis) can be transferred to and fit the context of other situations (Lincoln & Guba, 1985).

Fourth, the naturalistic paradigm understands that interactions are intertwined and there is no one path that interactions take, what Lincoln and Guba call mutual simultaneous shaping (1985, p. 150). Due to the complex nature of the world and interactions, it is impossible to definitively determine causality – we cannot say what is truly a cause or an effect as everything impacts everything else.

Finally, the naturalistic inquirer acknowledges that no matter the type of research, inquiry is influenced by values: the researcher's values, the choice of methodology underlying the research, and the values that influence how the researcher executes the research. This is an unavoidable fact. Lincoln and Guba (1985) explain that the best results will be yielded if one acknowledges that these values are present and if these three sets of values match up.

These axioms have had major implications on how this study was designed and carried out. For the particulars of this study, these axioms have influenced the use of the human instrument, qualitative methods, purposive sampling, inductive data analysis, grounded theory (rather than a priori theory), emergent design, negotiated outcomes, and case study reporting, all of which are described in detail by Lincoln and Guba (1985, pp. 39-42).

Methods

In order to address the purpose of this research and to answer the research questions, a mixed-methods approach has been taken. As little is known about the local grass-fed beef middle value-chain – processors, distributors, restaurants, and retail businesses – this research has prioritized qualitative methods, using semi-structured in depth interviews, and was enhanced with quantitative surveys and a questionnaire.

Study site. This research took place in the northwest portion of Michigan's Lower Peninsula. Participants were located in Benzie, Grand Traverse, Leelanau, Wexford, Emmett, Missaukee, and Isabella counties, generally surrounding or serving businesses surrounding the Grand Traverse Bay, a popular tourist area in Michigan. This region was chosen in order to complement two on-going projects in the same region: the Grand Vision, which has the objective of increasing the amount of food grown and consumed locally within six northwest Lower Michigan counties (The Grand Vision, 2015), and a USDA SARE project working to increase the amount of locally sourced grass-fed beef available in northwest Lower Michigan. The research originally set out to focus on the Grand Vision counties – Antrim, Benzie, Leelanau, Grand Traverse, Wexford, Kalkaska – but the grass-fed market does not adhere to county boarders, and in order to include important contributors to the grass-fed beef market in northwest Lower Michigan, the study area was expanded to also include Missaukee, Isabella, and Emmett counties. Additionally, the researcher was unable to identify participants in Kalkaska and Antrim counties.

Sample. This research examined the grass-fed beef middle value-chain (see Figure 1), and therefore included *processors*, *distributors*, *restaurants*, and *retail outlets* processing,

selling, and serving locally sourced grass-fed beef in the study area described above. Participants were identified using purposeful and snowball sampling.

Figure 1. Middle Value-chain

The Middle Value-chain. The middle value-chain is depicted in the black boxes and are bookended by producers and consumers, which are part of the whole value-chain but are not included in this study.

With purposeful sampling, the researcher deliberately includes certain individuals as participants because of their particular knowledge of the subject being studied (Patton, 1990). In this case, the researcher sought out processors, distributors, restaurants, and retailers that were active in the local grass-fed beef value-chain, as they had intimate knowledge of market barriers and the functioning of their value-chain. Potential participants chosen through purposeful sampling were identified by using the Michigan Land Use Institute's Taste the Local Difference local food and farm search (Michigan Land Use Institute, n.d.), a database of businesses growing and selling local food products in northwest Michigan. In order to determine which restaurants and retailers sold local grass-fed beef, the researcher emailed all restaurants and retailers located in the study area. Those that responded and confirmed that they were using local grass-fed beef were invited to participate in the study. Within these identified establishments, purposeful sampling was used further to identify individuals that had a high level of interaction with their value-chain partners. For instance, once a restaurant was identified as a participating establishment, the individual in charge of sourcing the grass-fed beef product was chosen as the participant because that individual presumably had the most experience in dealing with other value-chain partners (the distributor and the processor).

Snowball sampling was used to identify participants based on recommendations made by individuals participating in the research study (Lindlof & Taylor, 2002). For this research, a majority of participants were identified by a regional food distributor that was also a research participant. As the regional distributor worked with all other value-chain participants – processors, restaurants, and retailers – they were an ideal choice for snowball sampling. They identified all of the restaurants and retailers that they sold local grass-fed beef to in the study area, as well as the processors that they used to process their grass-fed beef product. Some restaurant participants identified by purposeful sampling above also assisted in snowball sampling, suggesting their distributors or other restaurants or retailers to include in the study. The researcher contacted all of the suggested participants by phone or email, and all participants that responded and were interested in the study were chosen as research participants.

In qualitative research, as results are not meant to be generalized, there is no mathematical method that indicates whether a sample is large enough. Typically, the rule of thumb is that a sample is the right size when the researcher reaches a point where new data is not surprising and does not bring up any drastically new themes (Lindlof & Taylor, 2001). Lindlof and Taylor (2002) explain this as a "critical threshold of interpretive competence" (p. 129). The researcher originally set out to include 3 processors, 3 retailers, 12 restaurants, and 6 retailers in the study, and was able to meet this goal. At the conclusion of the data collection, the data had reached a point of redundancy (Lincoln & Guba, 1985), where interviews were no longer generating new, surprising information, therefore for the purpose of this study the sample size was adequate for answering the identified research questions.

Table 3 describes how participants were identified (purposeful or snowball sampling) and the distribution of participants in the study area. Multiple participants played more than one role

in the value-chain. One processor was also a retailer, and another processor was also a producer. Two of the distributors were producers that distributed their own product. One restaurant was also a producer.

Table 3
Participant distribution by sampling method and county

Participants	Sampling method	County representation
Processors	Snowball, 3	Isabella, 1
		Missaukee, 1
		Wexford, 1
Distributors	Purposeful, 1	Grand Traverse, 2
	Snowball, 2	Benzie, 1
Restaurants	Purposeful, 5	Grand Traverse, 3
	Snowball, 7	Leelanau, 5
		Wexford, 1
		Emmett, 3
Retailers	Snowball, 6	Grand Traverse, 4
		Missaukee, 1
		Emmett, 1

Data collection. A mixed methods approach, carried out with a survey and in-depth interviews, was used to answer the previously outlined research questions (see Table 4). Understanding value-chains, particularly the nuances surrounding the values of and interactions between value-chain participants, is quite complicated and the researcher determined that combining qualitative and quantitative methods would result in the most comprehensive understanding of the research problem. This study had a qualitative focus and was enhanced with quantitative techniques. Other studies examining the complexities of local food systems have

used mixed methods approaches, combining qualitative interview techniques with supplemental and confirmatory quantitative surveys to achieve the most comprehensive understanding of the food system (Inwood et al., 2009; Murphy & Smith, 2009; Strobhen & Gregorie, 2003).

The purpose for combining methods in this study was to maximize the strengths and minimize the weaknesses of both qualitative and quantitative methods (Creswell & Clark, 2011). In examining the many reasons behind mixed methods use, Creswell and Clark (2011) bring attention to two rationales that further explain the purpose for using mixed methods in this study. First, they cite Greene, Caraelli, and Grahm's rationale of *expansion,* in which using mixed methods "seeks to extend the breadth and range of inquiry by using different methods for different inquiry," (Creswell & Clark, 2011 p. 62). Additionally, Bryman's rationale of *completeness*, which Creswell and Clark (2011) explain "refers to the notion that the researcher can bring together a more comprehensive account of the area of inquiry in which he or she is interested if both quantitative and qualitative research are employed," (p. 62), speaks to the decision to use mixed methods for this research study.

***Quantitative methods*.** The first portion of data collection was carried out using quantitative methods in the form of an online pre-interview survey. The survey comprised 3 parts: two Likert surveys, a Grass-fed Beef Belief Survey and the New Ecological Paradigm Survey (Dunlap, 2000), used to gain greater insight into the participants' motivating values and perceptions of market barriers; and a Value-chain Questionnaire used to provide background information on participants and to inform personalized interview questions based on each participant's unique value-chain experiences. The survey was only given to individuals participating as interviewees and was not meant to produce generalizable data.

The first portion of the survey was a 13 item Likert survey which was pretested on a group of chefs and distributors before being used for this study. The Grass-fed Beef Belief Survey (see Appendix A), was used to identify participant's beliefs about grass-fed beef and the grass-fed beef market in their region, helping to answer research question 1, *What values permeate the local grass-fed beef middle value-chain?*, and research question 3, *What are the middle value-chain's perceived barriers to a viable local grass-fed beef value-chain?*.

As one benefit of grass-fed beef is enhanced environmental well-being and land stewardship, the second portion of the survey was the New Ecological Paradigm (NEP) survey (Dunlap, 2000). The New Ecological Paradigm Scale (see Appendix A) is a widely accepted tool that is frequently used to measure and contrast individuals' level of environmental concern (Hawcroft & Milton, 2010; Dunlap, 2008). The NEP is a 15 item Likert scale which produces a total score indicating the level to which an individual relates to an environmental or dominant social paradigm. Additionally, the survey produces 5 sub-scores indicating the level to which an individual endorses the five hypothesized facets of an ecological worldview: 1) the reality of limits to growth, 2) antianthropocentrism, 3)the fragility of nature's balance, 4) rejection of exemptionalism, 5) and the possibility of an ecocrisis (Dunlap, 2010, 432).

The final component of the survey was a short answer Value-chain Questionnaire (see Appendix A) exploring participants' perceptions of their value-chain relationships and their role in the value-chain. The purpose of this questionnaire was to provide the researcher with background information on the participant and to provide content used to develop additional interview guide questions relating specifically to the participants experiences interacting with their value-chain partners.

***Qualitative Methods*.** For this research, qualitative methods were prioritized. As qualitative research is used for understanding the subtleties of a particular issue, gaining a deep and detailed understanding of a topic, understanding processes, and exploring relatively unknown topics (Rubin and Rubin, 2012), qualitative techniques in the form of semi-structured in-depth interviews best addressed the purpose of this research. Each food value-chain differs based on location, business characteristics, personalities of participants, values, goals, and many other variables. Since there is no previous research exploring the unique local grass-fed beef value-chain in northwest Lower Michigan, qualitative research was necessary to gain a deep, detailed, and comprehensive understanding of the value-chain relationships and barriers to market success. Additionally, this research was based in the naturalistic inquiry paradigm, which tends to best align with qualitative methods (Lincoln & Guba, 1985).

Because this study was based in the naturalistic paradigm, an emergent design was used, allowing for adaptation and flexibility (Lincoln & Guba, 1985). Emergent design is necessary because it is impossible to anticipate the various realities of the participants, what will result due to the researcher/participant interactions, how the many pieces of the research process will influence each other (mutual simultaneous shaping), and how values will come into play during the research (Lincoln & Guba, 1985). Because of so many unknowns, what the researcher may initially propose as the research design may not fit the actuality of how the research unfolds, necessitating the flexibility of emergent design.

Semi-structured in-depth interviews were used to conduct the qualitative portion of this study. Using the human as the instrument both in terms of the researcher using herself as the means for gathering data, and using humans as main source from which data comes from is a major component of naturalistic inquiry (Lincoln & Guba, 1885). Using humans as the data

gathering instrument allows for flexibility and adaptability, as one could not predict the content of or direction interviews may go due to the multiple realities of the participants. Additionally, humans are the only instrument capable of recognizing, taking account of, and evaluating the effects of the interaction between researcher and the researched, the impact that the research process may have on elements being researched, and the impact of the values impacting the research process (Lincoln & Guba, 1985).

In-depth interviews encourage opened-ended responses from participants in the form of narratives describing personal experiences (Rubin & Rubin, 2012). According to Hesse-Biber and Leavy (2006), "In-depth interview uses individuals as the point of departure for the research world that is ascertainable through verbal communication" (p. 119). Semi-structured interviews were chosen over structured or unstructured interviews because they permit flexibility with interview questions. Semi-structured interviews allow the researcher to stray from the interview guide if the conversation goes in an unexpected and interesting direction relative to the research questions (Hesse-Biber & Leavy, 2006; Rubin and Rubin, 2012).

Interview guides (Hesse-Biber & Leavy, 2006; Rubin & Rubin, 2012) were developed before each interview. An overarching interview guide (see Appendix B) was created at the beginning of this research and included general questions related to the research questions. This interview guide was updated after the first few interviews based on effectiveness of the interview questions. Individualized interview questions were added to all of the interview guides based on the respondents' responses to part three of the survey, the Value-chain Questionnaire. Additionally, during each interview, the researcher added follow-up questions in order to better understand a participant's responses, and modified or deleted questions based on information learned throughout the interview. The process of restating the researcher's interpretations and

understanding of the participants responses during the interview was used as a form of member checks (Lincoln & Guba, 1985) in order to most accurately represent that participant's reality, increasing the credibility of the data. The interviews lasted between 45 minutes and 1.5 hours. During the interview, the interview guide was used to guide the conversation, and the researcher took notes while audio-recording.

Table 4
Research questions and associated data collection methods and process

Main Research Question	Sub Research Questions	Data Collection Methods	Process
What is the present state of the local grass-fed beef middle value-chain in the northwest portion of Michigan's Lower Peninsula?	What values permeate the local grass-fed beef middle value-chain?	Grass-fed Beef Belief Survey New Ecological Paradigm Survey Semi-structured interviews	Survey creation and distribution Audio-recorded, notes, transcription
	What is the nature of the local grass-fed beef middle value-chain relationships?	Semi-structured interviews	Survey creation and distribution Audio-recorded, notes, transcription
	What are the middle value-chain's perceived barriers to a viable local grass-fed beef market?	Grass-fed Beef Belief Survey Semi-structured interviews	Survey creation and distribution Audio-recorded, notes, transcription

***Mixed-methods process*.** The survey portion of this research was carried out before the qualitative interviews because part 3 of the survey, the Value-chain Questionnaire, was used to personalize and finalize the interview guides. The survey was emailed each participant after they agreed to participate in the study. Parts 1 and 2 of the survey were used to provide supplemental

information about participants' values and their perceived barriers to grass-fed beef market success, and did not influence the interviews.

Data analysis.

***Quantitative analysis*.** The Grass-fed Beef Attitude Survey and NEP responses were aggregated in SPSS. The Grass-fed Beef Attitude Survey questions were analyzed individually. Scores ranged from 1, indicating that respondents strongly disagreed with the statement, to 5 indicating that respondents strongly agreed with the statement. Descriptive statistics were used to summarize distributors', processors', restaurants', and retailers' attitudes, beliefs (questions 1-4, 10-12) and perceived barriers of the grass-fed beef market (questions 5-9, 13). Questions 1 and 12 were reworded and scores were reversed in the results for ease of comparison with other questions. Total NEP scores and sub scores were calculated for each participant. Scores were calculated by summating the odd question scores and the reverse scores of the even questions. The higher the score, the more the individual subscribed to an environmental worldview or a particular subscore. Descriptive statistics were used to summarize each sector's level of environmental concern. The Value-chain Questionnaire was not analyzed as its sole purpose was to provide the researcher with background information about each participant and to inform individualized interview guide questions.

Qualitative analysis. Data analysis for the in-depth interviews began as soon as the first interview concluded, reflecting the process of analytical induction where data-collection, data-analysis, and theory creation are entangled, with each step informing the others (Hesse-Biber & Leavy, 2006).

After each interview, the researcher expanded field notes and created a contact summary sheet (Miles & Huberman, 1994) summarizing information about the interviewee, the interview process, and major themes that emerged throughout the interview. Audio recordings were transcribed verbatim by the transcription service, Scribie.com. The researcher captured impressions and early analysis in the form of memos throughout the entire analysis process and memos were dated in order to track the evolution of thinking. The computer software NVIVO was used to aid in the management of data and analysis. All field notes, contact summary sheets, memos, and transcriptions were stored in NVIVO.

Next, the researcher began the inductive process of coding the data. Coding is the first step in the process of data condensation which takes pages of transcripts, extracts important themes, and converts them into manageable chunks. According to Miles, Huberman, and Saldana (2014), "codes are labels that assign symbolic meaning to the descriptive or inferential information compiled during a study" (p. 71). As the subject matter of this study was exploratory, codes were not predetermined before coding. Rather the researcher read through expanded field notes, contact summary sheets, and transcripts, tagging in NVIVO segments of data that could be described as a theme or concept that could help answer the research questions. Although many interesting concepts and themes emerged in the data, only concepts and themes that could help answer the research question were coded. The researcher read through each transcript multiple times, making sure all concepts and themes relevant to the research questions were accounted for, while consolidating similar concepts. As codes solidified, the researcher created an analytic memo in the form of a codebook (see Appendix C) which includes the name of the theme or concept, the short hand code used to identify the theme during coding, a

definition of the code, a rule of when to apply the code, and examples of when to use the code (Miles, et al., 2014).

After coding all of the data collections, all text data associated with a particular code were nested under that particular code name in NVIVO. Summaries were then written for each code that occurred in each transcript, further condensing data (See Appendix D). Creating summaries for each code within each data collection is a form of high level data analysis, allowing the researcher to summarize each participant's experiences with a certain code.

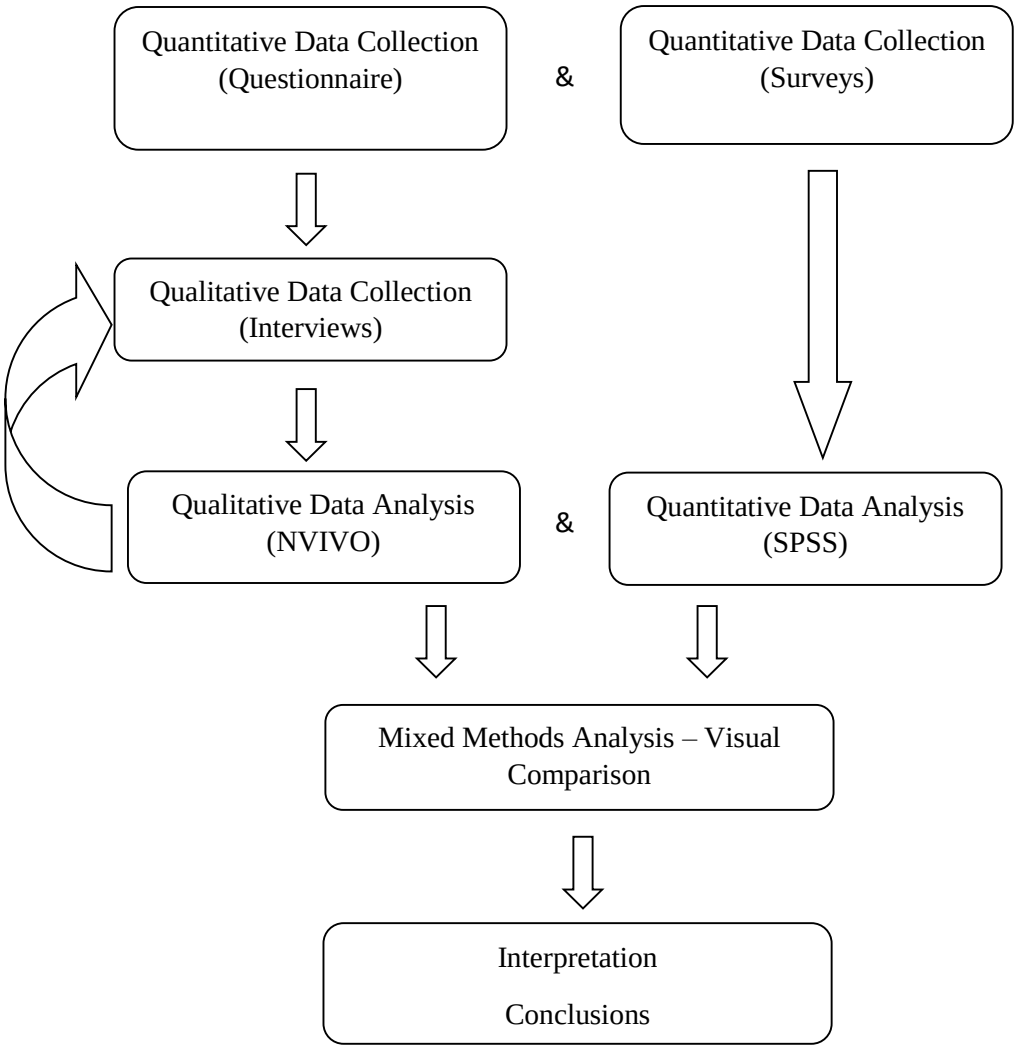
Next, the researcher used a visual display to summarize codes by sector (processors, distributors, restaurants, and retailers) and to compare the sectors experiences by code (See Appendix E). Displays are used to take data from the summaries and combine them into an easily readable visual that is then used for drawing conclusions about the data (Miles & Huberman, 1994).

Integration (see Figure 2). The qualitative data in the form of the visual display and quantitative data in the form of table summaries were compared. By viewing qualitative and quantitative data alongside each other, the researcher drew conclusions to answer each research question. Qualitative and quantitative data were integrated during writing of the discussions and conclusions. Tables displaying the quantitative results were used alongside descriptions of codes related to each related research question in order to explain the results of this study.

Validity. The naturalistic approach to what is conventionally termed validity is to determine the trustworthiness of the data and the results by judging the credibility and transferability of the research (Lincoln & Guba, 1985). In this research credibility wash achieved through prolonged engagement, triangulation, peer debriefing, and member checks during

interviews (Lincoln & Guba, 1985). According to Lincoln and Guba (1985), prolonged engagement is "the investment of sufficient time to achieve certain purposes: learning the 'culture,' testing for misinformation introduced by distortions either of the self or of the

Figure 2: Mixed Methods Process (Adapted from Designing and Conduction Mixed Methods Research (Creswell & Clark, 2011).



respondents, and building trust" (p. 301). Over the course of this research, the researcher spent approximately 30 hours talking with participants in interviews and many more hours conversing with participants over email prior to the interviews. Over this amount of time, the researcher developed a strong sense of culture for each participant/business and of the grass-fed beef market as a whole. Second, the researcher used triangulation in the form of "multiple and different sources", one form of triangulation originally proposed by Denzin (as cited by Lincoln & Guba, 1985, p. 305). The researcher sought out multiple individuals representing the four sectors explored by this research, including as many people from each sector as possible. The researcher also used peer debriefing (Lincoln & Guba, 1985) in order to build credibility. Peer debriefing is the "process of exposing oneself to a disinterested peer in a manner paralleling an analytic session and for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit within the inquirer's mind" (Lincoln & Guba, 1985, p. 308). In this case, the researcher met with a peer multiple times to discuss the development and application of codes in order to get a fresh perspective of the data, and also providing the opportunity for the peer to question and probe about interpretations, working hypotheses, and potential biases (Lincoln & Guba, 1985). Finally a form of member checks (Lincoln & Guba, 1985) was used to verify interpretations of the data. In this case, the researcher used member checks during the interviews to clarify the meaning of statements, summarize ideas in order to determine whether the researcher understood participants' statements, and to test preliminary interpretations.

Transferability is the naturalist's form of external validity. As the naturalistic approach is unable to confirm whether or not results from a particular study could be applied to other contexts, the alternative is to ensure a "thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a

possibility," (Lincoln & Guba, 1985, p. 316). In the case of this research, the researcher attempted to provide a detailed and deep description of the context of this research. Through in-depth interviews, the researcher was able to garner rich descriptions of the participant's involvement in the grass-fed beef market, and the context from which their perspectives were rooted.

Chapter 4: Results

As there have been very few studies focusing on local grass-fed beef markets nationally or in Michigan, this research has set out to understand the current status of the local grass-fed beef middle value-chain in northwest Lower Michigan. Through semi-structured in-depth interviews and supplemental surveys, this study has examined the values of the middle-value chain participants, the nature of their value-chain relationships, and the barriers to growth facing the local grass-fed beef market. The results of this study bring to light aspects of value-chain relationships and the grass-fed beef market in northwest Lower Michigan that need to be addressed, while at the same time highlighting successes within the value-chain, thus reinforcing what is working and identifying strategies for market success that could inform the development of similar markets elsewhere.

In summary, results show that the grass-fed beef middle value-chain does share a number of personal and business related values such as the importance of local grass-fed beef product characteristics, the importance of relationships, the desire to induce systemic food system and economic change, and the importance of education. Three sectors – distributors, restaurants, and retailers – described how their personal integrity impacted many business decisions related to their grass-fed beef use, and some distributors and restaurants explained instances where they operated based on social embeddedness principals. In terms of the nature of the value-chain relationships, in general the relationships were characterized by many positive attributes such as long-term commitment, flexibility, equitable profit sharing, value-chain facilitation, mutual benefit, transparency, strong communication, and trust. There were some instances of relationship struggles such as lack of commitment, inflexibility, inequitable profit sharing, and problems with maintaining transparency and communication, all of which had negative impacts

on trust. These struggles occurred on a case-by-case basis and did not exemplify overall relationship trends. Finally, results of this study bring to light many value-chain and market-wide barriers to the grass-fed beef market including a number of market and logistical struggles, inconsistent product quality, inconsistent processor performance, a lack of grass-fed beef related knowledge within the value-chain, insufficient infrastructure, a number of unique processor barriers, and the presumed drawbacks of advertising "grass-fed" due to its trendiness. Concurrently, participants have established a number of best practices that have allowed them to continue partaking in the grass-fed beef market, such as developing strategies to manage supply and demand, differentiating the product, using innovative pricing strategies to make up for a higher cost product, and playing multiple roles in the value-chain.

The following results detail survey and interview findings answering the three identified research questions for this study:

1. What values permeate the local grass-fed beef middle value-chain?
2. What is the nature of the local grass-fed beef middle value-chain relationships?
3. What are the middle value-chains' perceived barriers to a viable local grass-fed beef market in the northwest Lower Peninsula of Michigan?

Research Question 1: What Values Permeate the Local Grass-fed Beef Value-chain?

Processors. Through careful identification of themes that arose during the in-depth interviews with the processor participants, three major motivating personal and business values emerged: relationships, product characteristics, and systemic change. All three processors were driven by their relationships with key business stakeholders, and all three processors noted product characteristics that distinguished grass-fed beef from other beef products. One

processor's involvement in local beef systems was compelled by their desire to change the nature of the local food system in order to increase resiliency at the local level.

Relationships. All three processors indicated that they strongly valued their relationships with their customers, employees, and community. They depend on these groups for their business success, and value the positive relationships they have built. To put it simply, these processors care about people and the connection they are able to build with them.

One processor explained that to strengthen his relationships with his customers, he takes time to include them in the processing procedures if they are interested, making an effort to provide a personalized service to each customer. This processor explained:

> For this business, it's been very convenient with the small size that we have, being able to work one-on-one with the producer and being able to spend the time with the individual. If need be, the individual can be a part of every step in this chain. They can be in the back room, they can see that animal, they can come and inspect that one in the cooler. Again, we're small enough that we can give the personal service to the individual.

The same processor cares about the farmers he works with and is empathetic to those that are not able to sell all of their product due to a lack of demand for whole carcasses or buyers' broken promises. He explained that it is not convenient for restaurants and retailers to buy large pieces of meat or the less desirable cuts, and after spending months raising the animal the farmer often has no market for 70% of the carcass. "These poor producers, they've put their heart and soul into them [the cattle], and at 18 months, now I've got 10 of them ready to go. All you have is all these empty promises."

Another processor explained how personal and community relationships have motived them to help grow the grass-fed beef market and to be a good steward in the community. A professor at a local university originally brought grass-fed beef to the attention of this processor. The processor's relationship with this individual put grass-fed beef on their radar, and the professor's personality, perseverance in growing the grass-fed beef market, and demonstration that it was possible to produce high quality grass-fed beef convinced the processor to take part in growing the grass-fed beef market in the region. Additionally, this same processor has the overarching goal to have a positive impact on the people around their business. He explained:

> Our family business model is for the Lord to make us a blessing in the place where He's put us… so let's try to bless the people that work for us. Let's try to bless the customers that shop here and use our services. Let's try to bless our greater community. And just our family members, as well.

Finally, another processor that also raises grass-fed beef valued the strong relationships they have with their customers. Their two largest customers buy whole animals from them and provide the farm and processing plant with as much business as they can handle. Additionally, the processor has worked hard to maintain relationships with their smaller customers. The processor goes out of his way to process unique and ethnic cuts that his customers request. In one instance, a customer requested an ethnic Argentinian cut with which the processor was unfamiliar. The processor researched the cut, and because the customer was purchasing meat from one of the processor's animals, he was able to carry out this request. Reflecting on the experience the farmer remarked:

> 'Cause you don't just go to a meat market and get that, and even a custom plant, I mean, that's somebody else's beef. Some of these [beef] were ours that we took it off from…and

boy, he was really excited. His mother, he says, "Boy, if I can make that for my mom..." So that's satisfying when you can please people like that.

***Product characteristics*.** All three processors recognized the value of the grass-fed beef product. The processors acknowledged the health benefits of grass-fed beef, such as higher omega-3 fatty acid ratios. Additionally, they valued the potential for grass-fed producers to raise a high quality product. One processor was excited to share that they have seen some high quality grass-fed product come through their door. “We had one of the carcasses recently, a couple weeks ago, that were graded prime,” he explained.

***Systemic change*.** Finally, one processor was very motivated to rebuild the local food infrastructure in order to develop a self-sustaining food system in the region. He explained that before the 1980s, butchers in retail outlets had the capacity to break down quarters of cattle. Yet retailers have lost those skills as they have become dependent on conventional distributors from which they can order individual boxed cuts that are delivered fresh to their door whenever they need it. Rebuilding that self-sufficiency is difficult, posing a problem to the sustainability of local protein markets.

> In the 1980s, most of that went by the wayside to where the large packers started taking those and making those into convenient muscle groups... into boxes. And the grocery stores would then order just what they wanted, specifically, like rib eyes, and all the boning had been done, all the fat and all the waste's gone. They just got that piece, and it's become very convenient for the marketplace to just take those pieces. And we're seeing, even when a producer comes to me with an animal, to get this animal processed, going back to the marketplace the consumer only wants these certain pieces, which they're used to... And it seems to be a shame, it's a lot of waste... For example, the last animal that

> came [in], we ground up a lot of product and made ground beef outta it, when 30% of that animal should've been more marketable into more desirable cuts.

The food system changes that this processor discussed have created a market dependent on convenient, individual, and high quality cuts of meat, resulting in a lot of waste and creating consumer expectations that cannot be met by local meat markets. It is important to this processor to help recreate a self-sustaining and resilient food system that is less dependent on unsustainable centralized meat distribution systems.

Distributors. Analysis of the qualitative interview data resulted in five emergent themes relating to the three distributors' personal and business values as well as motivations for partaking in the local grass-fed beef market. All three distributor participants explained that they valued grass-fed beef product characteristics, and that some of their business decisions related to local grass-fed beef were driven by their personal integrity. During the interviews, two of the distributors indicated that they felt strongly about their relationships with their grass-fed beef customers. Finally, the interview with the regional distributor showed that their participation in the local grass-fed beef market has been strongly influenced by their desire to achieve systemic change within the food system as well as social embeddedness.

Product characteristics. One of the most common values shared by the three distributors was their recognition and appreciation of local grass-fed beef product characteristics. The animal welfare implications of grass-fed production techniques, such as cattle eating their natural diet of grass and living out their lives in non-confinement, were described as important to all distributors, as were the human health benefits. Additionally, one distributor explained that they generally value the higher quality of local and Michigan sourced food products.

Integrity. Additionally, all distributors make some of their sourcing and business operations decisions based on their moral principles. The regional distributor's mission is to help create a socially just and resilient food system. As part of this they are trying to move away from sourcing beef from their "friendly neighborhood CAFO" since the CAFO's production practices do not align with the distributor's values.

One farmer-distributor was motivated to raise grass-fed cattle based on organic principles because of his and his wife's health problems; they wanted to give consumers the choice of a healthier product. Finally, the third distributor who also raises his own cattle, decided to adopt grass-fed production methods, ending the family tradition of grain-finishing, because he felt it was wrong for the animals to live out their lives unnaturally. He explained:

> Well, I didn't want to feed a lot of corn or a lot of other products to my livestock, because cattle are naturally, natural selection, or however you want to look at it, for grass, and not grains. But we as Americans figured out how to produce it faster, pump them up faster, so I just didn't want to do that. I just don't think that's right for the livestock to live like that.

Relationships. Two distributors strongly valued their relationships with their customers. The regional distributor was largely motivated to source the product because their retail customers requested their help to locate and mitigate the risk of sourcing locally raised grass-fed beef, as it requires a lot of storage and coordination. He explained, "…they wanted that quality product but they could not afford to take that risk."

Additionally, one of the farmer-distributors valued his relationship with his main retail buyer. He has enjoyed working with them and has offered them price breaks in order to maintain

that relationship.

> They're super nice in there. I really enjoy dealing with them. And I told them, I said "You know what, I'll sell [it] to you [for] less if you take meat, we keep a steady flow." Because I do like dealing with them.

Systemic change. The regional distributor was highly motivated by the desire for systemic change, with the goal of creating a resilient, sustainable, and decentralized agricultural food system in Michigan. They explained that they "want to be an economic driver for those medium sized farms which have disappeared in this country. Specifically in this state very much [sic]. So we want to be a farm creator. That is our goal." Additionally, they valued "people being able to make a living producing and growing [food], people being able to access it in their regular every day channels." Building on their desire to revive the state's agricultural system, they want Michigan to become self-sustainable and less dependent on the national food system. They explained, "The whole point behind this is trying to rationalize or change the food system a little bit in Michigan, where if we had a disruption in service, we still have something here that can feed us."

Social embeddedness. Finally, at the root of the regional distributor's business model was the concept of social embeddedness. Their business decisions have not been driven solely by the desire for larger profit margins, but rather by their social values. Although they strive for financial sustainability, the ability to pay farmers fair prices and improve the sustainability of Michigan's agricultural system has been most important to their business. The distributor explained:

> I mean obviously at some point we'd really like to make money while we're doing this, but we want to be making money because we're buying from farmers that are neighbors in the state and they're making a good living.

Restaurants. Data from the 12 restaurant interviews gave rise to seven themes surrounding personal and business values reflecting motivations for using local and grass-fed beef products as well as core operating principles of the businesses. All restaurant owners valued product characteristics associated with local and grass-fed beef products. In a majority of the interviews restaurant participants described how business operations surrounding their use of local grass-fed beef were driven by their personal integrity, the importance of relationships in their business, their inherent value of the farming tradition and farmers themselves, and their desire to induce systemic change. Finally, half of restaurant owners were motivated by deep rooted social embeddedness as well as their desire to educate their customers.

***Product characteristics*.** Restaurant owners and chefs all strongly valued different attributes of the local grass-fed beef product. First, all restaurant participants valued the quality of local foods and grass-fed beef, particularly enjoying the freshness and flavor of the product. One chef particularly valued the flavor variations between local grass-fed beef farms and described their plan to pair hamburgers possessing different characteristics with different wines. The restaurant owner explained:

> The hamburger[’s different flavors] from one farm to the other, we know that instinctively in the wine business. It's called Terroir. And when you use the French term, Terroir, you're talking about the unique characteristics of this particular plot of land or region of land, which is determined by the soil, and the land, and the weather, and the Great Lakes. So he's [the chef] saying, "I think that's really cool. What I'm gonna do is we

> take some of our ground beef and we're gonna do a hamburger; we'll do a cooking class and sampling class and pair it with our wines and spirits with hamburger from four different farms…"

All restaurant participants valued being able to source a local or Michigan raised product, while three stated that they valued source traceability. Additionally, most of the participants explained that they use local grass-fed beef because of the associated health benefits, naming GMO-free, antibiotic free, hormone-free, leanness, and higher omega-3 content as specific health related characteristics. They also believed that grass-fed animals themselves are healthier, and thus are healthier for humans to eat due to the animal's improved living conditions and their consumption of highly nutritional grass. These points connected their desire for a healthful product with their appreciation of high animal welfare standards.

> So it's better for the cow, it's actually better for the environment. It's better for the health, here [at the restaurant], and it doesn't make the cow sick. So one of the things that we try to promote is humane conditions for the animals, like stuffing 'em full of corn just isn't good for em. They're not designed or built to eat that much corn.

Finally, three restaurants participants explained that local grass-fed beef was better for the environment. They believed that all local food products reduce green-house gas emissions by reducing the number of miles the product travels from farm to plate. Additionally, they valued the environmental stewardship practiced by local grass-fed beef farmers. One chef explained his understanding of the environmental benefits of grass-fed over factory farmed beef:

> And I watched *Food, Inc.*, a couple of years ago, that documentary about the whole beef production, chicken, and just how bad that is for the environment. Water runoff and the

> humane raising of the animal, if that makes sense, the rearing of the animal and just the impact that has on the actual cows and the flavor of the product, because of the stresses the cows are on. It just seems to be the animals are happier, so the product is better kind of thing.

Integrity. Another strong theme present in most of the restaurant interviews was integrity. A majority of chefs and restaurant owners described how their sourcing and business practices are driven by their morality. Many restaurants sourced locally raised grass-fed beef because they thought it was the right thing to do because it supports local farmers and high animal welfare standards, as well as those using socially and environmentally sustainable production practices. One chef explained:

> I just learned a lot about factory farms and where our meat comes from. My parents raised us pretty healthy. We always had a big garden, and we always had vegetables on the table. I guess it's an ethical thing. I don't really think there's any real ethical way of killing anything, but I would rather the animals have a happy life while they're alive.

Additionally, some chefs wanted to feed their customer a product that they believed in and that they themselves would eat or feed to their family.

> So we buy it for our own family's consumption. In fact, our first purchase of beef out of that farm I told you about was just for our own family. And that was, that's a huge motivation. We only, almost only, eat grass-fed as well.

One chef and owner chooses to buy the whole animal from his farmer, making use of all of the edible cuts out of respect for the farmer and the animal.

> I really think using the off cuts is critical, critical... If you're gonna tie in the local farmers, what happens is, usually on a restaurant menu, you'd go to a restaurant and you'd be able to buy... If it's a nice place for dinner and you get a rack of lamb. Or let's say it's beef, it's a New York strip steak. Well, how many New York strip steaks can you cut out of a cow, out of a steer? Well, I think it shows a lot of creativity, and just a great respect to the animal, to use the whole thing as fruitfully as possible.

***Social embeddedness*.** The concept of social embeddedness arose in many of the interviews. Chefs and restaurant owners forwent maximum profit in order to have the greatest social impact they could reasonably afford. They explained that it is better to support local farmers using sound production practices to produce a high quality product than to maximize profit. Additionally, it was important to many chefs that their product be affordable, often sacrificing some profit to keep the cost at an appropriate level for the surrounding community. One chef/owner of a catering business explained that they probably overpaid for their products, but they think it pays off. “We pay more because it's better for us to pay more for our community. And that was what we started to do in the beginning, because we knew so many farmers.”

***Relationships*.** Many chefs and restaurant owners valued their relationships with their customers, their farmers, and their distributor. About a third of restaurants started to source local and grass-fed products because of previous relationships they had with farmers. Restaurants were driven to provide their customers with a high quality product that the chefs themselves felt comfortable eating. On top of that, many chefs have been loyal to their farmers, choosing to purchase from them rather than other distributors. Finally, chefs valued their local grass-fed beef

distributor because they prefer supporting a company that adheres to shared values. One chef described the distributor his restaurant uses:

> They just wanna get great product to people… and I've seen their objectives and their values, and I appreciate that and respect that about them. I feel comfortable being involved with them, 'cause I know that they're looking out for me and the farmers, not just themselves.

Farming. Over half of restaurant participants inherently valued farms and farming, which has motivated them to source local and grass-fed beef products. Chefs and restaurant owners valued the pride that farmers take in their work, and were thankful and respectful of their devotion to growing local food. One restaurant owner described his admiration for his grass-fed beef farmers:

> And it's just their devotion to it. It's goosebumps. I mean, I think of how hard they work, how much they care for what they do, hugely inspired, and everybody, and not just kids... But, even people my age should go to a farm and see the work that goes into this. Look at the cow, the steers and realize that they're living and that they need respect. Those farmers need our admiration and support. What they do is heroic. When they talked about 10 years since they could afford a vacation, I'm like, "Oh, man". Because I've heard a little bit of complaining coming out of my own mouth of how hard I work sometimes, like okay it... It's pretty shallow compared to what they... I mean, I take one day off. Most every week, I take Sunday off. Once in a while, I have to go for something, but not often, and I'm like, "They do 7 or 10 years!"

Finally, some restaurant owners and chefs simply valued the beauty of farmland. While

explaining why she started sourcing local grass-fed beef, one restaurant owner described the first time she saw her farmer's property. "When we first met, it just seemed like... They have this incredibly beautiful farm, it's just gorgeous. And just the kind of care they take with their... Just the buildings and the land and the animals, is really impressive."

Systemic change. Over half of restaurant participants believed that buying local or Michigan raised food products keeps money in the local or state economy and supports the development of a strong Michigan agricultural system. Chefs and restaurant owners would rather support a local distributor or farmer than give money to national distributors.

Education. Half of restaurant participants valued educating their customers about the local and grass-fed products they serve. Some restaurants simply wanted to help their customers develop better eating habits and reconnect them with the food they eat, while others used education as a way to justify higher prices or to explain the flavor characteristics of grass-fed beef that customers may not immediately appreciate. Restaurants hoped that by educating customers about the importance of the local and grass-fed products, customers would begin to value those products.

Retailers.

The six retailer interviews provided evidence of four motivating value themes. All retailers' businesses were entrenched in their relationships with their customers and other business stakeholders. Additionally, all retailers found value in a number of characteristics associated with local grass-fed beef. Over half of retailers described how they made food sourcing decisions based on their personal integrity. And finally, half of retailers described food education as an important facet of their business.

Relationships. The most salient theme shared by all retailers was the importance of their relationships with their customers, farmers, staff, and community. First, retailers' businesses are driven by customer loyalty. A retailer at fresh and specialty foods market described their commitment to their customers:

> We have sort of a daily priority list that we go by that is ingrained in everyone here from their first day of training and that's the customer comes first, secondary to anything else you could be doing. Taking care of the customer is the top priority. So, we're customer driven by our purchases.

Additionally, many retailers' sourcing decisions were driven by their customers' demands and values. They felt a duty to their community of customers to provide them with a quality product from a trusted source that adheres to their morals.

Retailers valued their relationships with their farmers. A retailer that just began sourcing local grass-fed beef explained that he simply likes his farmer and wants to help him. "I just think he's a good guy. He's the kind of guy I do business with, and I dream of being a local meat source, and helping a farmer sell more beef." Another retailer explained similar motivations. "That's where I want most of my business to go, is right, directly to a farmer. And I love the relationship we have, we support him, I'm one of his bigger customers." In this way, retailers continued to support their local community by maintaining positive relationships with farmers.

Product characteristics. Similar to the other three sectors, all retailers valued specific qualities of the local grass-fed beef product. A majority of the retailers named high quality, freshness, and flavor as important qualities of local grass-fed beef. Additionally, retailers valued the health benefits of the grass-fed product, such as the potential for non-GMO and organic production practices, and a leaner product higher in omega-3 fatty-acids and nutrients. A number

of retailers also valued the ability to source a local or Michigan raised beef product, and valued the environmental stewardship practiced by grass-fed beef farmers. Finally, retailers preferred to source grass-fed beef due to the resulting improved animal welfare conditions.

Integrity. Some retailers were highly motivated by what they saw as their moral obligations. One retailer felt it was important to be a socially and environmentally responsible community member. Another retailer thought it was important to sell products that she felt comfortable eating. “I sell what I wanted for my family to be eating and I just assumed that that's probably where a lot of other people are going to and what they want to do. It's what I gotta do.”

Two other retailers explained that their customers trusted them to find food sources that align with their values. One explained:

> Sometimes we have to walk our farmer relationships through the process, so they understand we do set a really high bar for expectations, and because we're trusted, we have this integrity built up in our organization. People look to us and trust that we're doing the right thing.

Education. Finally, half of the retail participants strongly valued their ability to educate consumers about the products they eat, the types food products available, and specifically about local grass-fed beef. Educational techniques used to provide customers with enough information to make an informed sourcing decision often involved signage to differentiate the product which could include definitions or descriptions of production practices. Some retailers sent out newsletters, held cooking demonstrations, and had community outreach departments focused on food education. One retailer was preparing to run a sale on local grass-fed beef as a point of departure for attracting customers to that product and educating them of the benefits.

So, we're gonna run a sale on it for ground beef, and hopefully just let people know what it is and it'll be an educational opportunity. It's a buzzword, and that way just to kind of bring people in here and spread the word about why you would want to eat that.

Survey Results. The following section summarizes the results of the New Ecological Paradigm Survey and the Grass-fed Beef Belief Survey questions relating to participants values.

***New Ecological Paradigm Survey*.** Table 5 displays the results of the New Ecological Paradigm Survey (NEP), indicating participants' level of environmental concern. The maximum total NEP score is 75, indicating the strongest support to an environmental worldview, whereas the lowest possible score is 15, indicating the strongest subscription to a socially dominant paradigm. The maximum subscore for each of the 5 facets of an environmental worldview is 15, and the lowest possible subscore is 5. The scores within and between sectors varied widely. For instance, as can be seen in Table 5, retailer NEP scores ranged from 21 to 59, and restaurant scores ranged from 33 to 68, with lower scores aligning more with a socially dominant paradigm and higher scores aligning more with a strong environmental worldview. Additionally, for the NEP sub scores for each facet of an environmental worldview (The Reality of Limits to Growth, Antianthropocentrism, The Fragility of Nature's Balance, The Rejection of Exemptionalism, and the Possibility of an Ecocrisis), in most cases scores within and between sectors varied. See Table 6 for additional descriptive statistics on the four sectors' scores. Overall, these results show that for this grass-fed beef value-chain and for each sector, individuals have very different levels of environmental concern. In other words, based on the NEP scores, environmental values are not shared throughout the grass-fed beef middle value-chain.

***Grass-fed Beef Belief Survey*.** Seven questions on the Grass-fed Beef Belief Survey were related to the respondent's values in regards to grass-fed and local beef (Table 7). Questions

Table 5
Participant total NEP scores and sub-scores

Sector	Total Score	I	II	III	IV	V
Processors n=3	35	10	4	7	12	5
	53	5	12	11	11	13
	54	5	14	11	12	12
Distributors n=3	48	8	9	10	9	11
	56	7	10	14	13	13
	56	8	10	11	12	13
Restaurants n=12	33	8	5	7	9	6
	42	9	8	10	8	8
	47	8	9	10	10	10
	50	10	10	10	11	9
	51	8	11	7	12	12
	53	8	11	9	9	13
	54	6	13	9	13	13
	54	7	14	10	10	11
	54	9	11	11	9	12
	59	7	10	13	10	15
	62	9	12	12	13	14
	68	11	15	14	13	14
Retailers n=6	21	7	3	7	5	3
	35	10	4	7	12	5
	46	9	9	9	9	9
	49	9	10	8	10	12
	50	7	11	10	11	11
	59	7	10	13	10	15

I, II, II, IV, V indicate the 5 facets of an environmental worldview: I = Reality of Limits to Growth, II = Antianthropocentrism, III = Fragility of Nature's Balance, IV = Rejection of Exemptionalism, V = The Possibility of an Ecocrisis

1, 2, 5, and 6 in Table 7 relate to specific product attributes: health benefits, animal welfare, source traceability, and production practices. The participant responses to questions 1, 5, and 6 indicate general agreement with the statements, with the majority of participants responding agree and strongly agree, demonstrating that the sectors share values relating to human health benefits, source traceability, and knowing the production practices of local grass-fed beef. Responses to statement 2 demonstrate that two out of three of distributors do not feel strongly one way or the other that grass-fed beef has animal welfare benefits over conventionally raised

beef, whereas the majority of participants from the other sectors agreed or strongly agreed with statement 2.

Table 6
NEP total score and subscore mean, median, and standard deviation by sector

Score/ Subscore	Mean				Median				Standard Deviation			
Sector	P	D	RS	RT	P	D	RS	RT	P	D	RS	RT
Total Score	47.33	53.33	52.25	43.3356	53	56	53.5	47.5	10.69	4.62	9.09	13.40
I	6.67	7.67	8.33	8.17	5	8	8	8	2.89	.58	1.37	1.33
II	10	9.67	10.75	7.83	12	10	11	9.5	5.29	.58	2.70	3.43
III	9.67	11.67	10.08	9	11	11	10	8.5	2.31	2.08	1.98	2.28
IV	11.67	11.33	10.67	9.5	12	12	10	10	.58	2.08	1.92	2.43
V	10	12.33	11.33	9.17	12	13	12	10	4.36	1.15	2.64	4.49

I, II, II, IV, V in the left hand column indicate the 5 facets of an environmental worldview: I = Reality of Limits to Growth, II = Antianthropocentrism, III = Fragility of Nature's Balance, IV = Rejection of Exemptionalism, V = The Possibility of an Ecocrisis. P, D, RS, and RT in the top row are abbreviations of Processor (P), Distributor (D), Restaurant (RS), and Retail (RT).

Responses to question 3 indicate that the majority of participants from all sectors agreed that serving local beef in restaurants does improve the local economy. Responses to questions 4 and 5 show that all sectors found it important to know and support local beef farmers, indicating their value of farmers in general as well as their relationships with farmers. Finally, question 7 generated mixed responses regarding the value of educating customers about where their beef is sourced. Eight out of 24 individuals' responses ranged from Strongly Disagree to Neutral in regards to the importance of educating consumers about where beef is sourced. Yet a majority, 16 out of 24, agreed or strongly agreed with statement 7.

Table 7
Frequencies of responses to Grass-fed Beef Belief survey values questions by sector

Question	SD				D				N				A				SA			
Sector	P	D	RS	RT	P	D	RS	RT	P	D	RS	RT	P	D	RS	RT	P	D	RS	RT
I											2		2	2	7	3	1	1	3	3
II									1	2	1	1	1		6	3	1	1	5	2
III							1		1				2	1	6	4		2	5	2
IV							1			1		2	3		5	2		2	6	2
V										1	2		2		4	4	1	2	6	2
VI					1					1	1		1		5	3	1	2	6	3
VII	1		1	1			2	1		1	1		2	1	3	2		1	5	2

SD, D, N, A, SA in the top row are abbreviations for Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA). P, D, RS, and RT in the second row are abbreviations of Processor (P), Distributor (D), Restaurant (RS), and Retail (RT). Roman numerals I through VII correspond with the following values *related questions on the Grass-fed beef Belief Survey (questions 1, 2, 3, 4, 10, 11, 12 on the actual survey – See Appendix A):*

I. Grass-finished beef has health benefits over conventional grain-finished beef.
II. Grass-finished beef systems result in improved animal welfare conditions over conventional systems.
III. Serving locally raised beef in restaurants improves the local economy.
IV. It is important to support local beef farmers by using their beef in my establishment.
V. It is important to know who raised the beef sold at my establishment.
VI. It is important to know the production practices used to raise the beef sold at my establishment.
VII. It is important to educate my consumers about where our beef is sourced.

These results show that within the local grass-fed beef market in northwest Lower Michigan, although there were a few individuals within each sector disagreeing or feeling neutral in regards to the values statements, the majority of participants shared beliefs and values related to the product characteristics of grass-fed and local beef (statements 1, 5, 6), the economic benefits of local beef sourcing (statement 3), the importance of knowing and supporting the famers raising

the beef (statements 4, 5), and the importance of understanding beef production practices (statement 6). The majority of processors, restaurants, and retailers agreed or strongly agreed with statement 2 relating to the animal welfare benefits of grass-fed beef, whereas the majority of distributors felt neutral. And finally, although the majority of participants from each sector did agree or strongly agree with statement 7 referring to the value of educating consumers about where beef is sourced, there was much less support for this statement than the other 6 statements, indicating mixed feelings within the value-chain in regards to the valuing of consumer education.

Summary. There were many values permeating the local grass-fed beef middle value-chain. Table 8 summarizes all of the salient values from the interviews and surveys. All sectors valued product attributes associated with local grass-fed beef (see Table 9), their relationships with value-chain partners, and the potential for the local grass-fed beef market to induce systemic change. The surveys and interviews indicated that the majority of processors, distributors, restaurants, and retailers all valued some form of consumer and customer education on local food and grass-fed beef products, and make business decisions based on their moral

Table 8
Summary of values held by the middle value-chain

Value	Processor		Distributor		Restaurant		Retailer	
	interview	survey	interview	survey	interview	survey	interview	survey
Product Characteristics	X	X	X	X	X	X	X	X
Relationships	X	X	X	X	X	X	X	X
Systemic change	X	X	X	X	X	X		X
Education		X		X	X	X	X	X
Integrity			X		X		X	
Social Embeddedness			X		X			
Farm					X			

compass. The concept of social embeddedness was present in both distributor's and restaurant's interviews, indicating that these sectors tend to take into account the greater social good as opposed to solely considering profit when making business and sourcing decisions. And finally, many restaurants inherently valued farms and farming.

As is evident in Table 9, the grass-fed beef middle value-chain valued similar local grass-fed beef characteristics, such as the human health benefits, animal welfare practices, and high quality product. Although not a prevalent theme in the interview data, the Grass-fed Beef Belief Survey indicates that all sectors valued the source traceability associated with a local beef product.

Table 9
Summary of valued product characteristics by sector

Product Characteristics	Processor		Distributor		Restaurant		Retailer	
	interview	survey	interview	survey	interview	survey	interview	survey
Human Health	X	X	X	X	X	X	X	X
Animal Welfare		X	X		X	X	X	X
Quality	X		X		X		X	
Source Traceability		X		X	X	X		X
Environmental Benefits					X		X	

Finally, restaurants and retailers were the only sectors that spoke of their appreciation of the environmental benefits associated with local grass-fed beef during the interviews. The NEP did not produce any outstanding results in terms of shared environmental values. Each sector had some individuals with scores reflecting a strong environmental worldview and some with a strong socially dominant worldview, indicating broad ranges of environmental worldviews within the grass-fed beef market in northwest Lower Michigan. With this evidence, although environmental values may be a motivating factor for some, such as the 6 participants that spoke

of the environmental benefits of local and grass-fed beef during their interviews and those with high NEP scores, within and between sectors there is little indication that environmental values are shared or are a major driving factor for the middle value-chain as a whole.

Although not prevalent themes in the data, there was some indication that all sectors valued financial sustainability; that distributors, processors, and some retailers also found inherent value in farms and farming; and that restaurants and retailers valued uniting their community around food. Due to the sparseness of these themes, they have not been included in the results above, but do warrant consideration for additional research.

Research Question 2: What is the Nature of the Local Grass-fed Beef Middle Value-chain's Relationships?

A portion of the interview conversations focused on the nature of the participants' relationships with others in the value-chain. Interview data yielded a number of themes describing these relationships. Value-chain relationships tended to be long-term and committed, flexible, focused on achieving price-equity, facilitated by one or two sectors of the value-chain, based on mutually beneficial partnerships, transparent, communicative, and trusting. However there were occasions of relationship dysfunction where relationships were short-term, inflexible, not able to achieve price equity, non-transparent, featured poor communication, and lacked trust.

Long-term. Generally, the local grass-fed beef middle value-chain is made up of long-term, committed, and loyal relationships. Participants strive to maintain lasting relationships with their customers and their suppliers. Some local grass-fed beef middle value-chain partners have worked together for over seven years, while some partnerships are new, with many partners having worked together for less than a year. These budding partnerships have every intention of continuing into the future.

One regional distributor began sourcing local grass-fed beef because one of their long-term customers requested their help sourcing the product. Additionally, the same distributor has retained their customers by "making it right" when their customers encounter problems with their order. Processors strive for repeat, long-term customers, which has required conscious sensitivity in dealing with farmers that raise a sub-par quality animal. Additionally, one processor explained that his biggest customer offered to help keep them in business using any means possible because they depend on their partnership:

> In fact, [customer] called us, I don't know when it was, last spring or something, and told us that... I don't know whether they thought I was thinking of retiring or what, but they told us that we were an integral part of their business, and if they could help us in any way to keep it going, they would.

Additionally, many restaurants and retailers described their loyalty to their farmers and distributors by choosing to support these long-term partners over others supplying the same product.

Commitment issues. Although the majority of the local grass-fed beef middle value-chain partners were committed to long-term relationships, some participants have struggled to find committed partners or have actively sought out new partners due to dissatisfaction with current relationships. One farmer-distributor had an informal commitment from a retailer. The retailer suggested a price per pound hanging weight and soon after reported back to the famer that his price was too high and subsequently stopped sourcing his product. In another case, a retailer had been working with a local grass-fed beef farmer-distributor when the farmer suddenly let them know he was going out of business and wouldn't be able to fill any future orders, leaving them with no local grass-fed beef source. In another instance, one restaurant had to stop sourcing local

grass-fed beef because the product became too expensive. Finally, one restaurant that has been sourcing local grass-fed beef from a farmer-distributor for seven years wanted to switch suppliers, but could not find another local farmer that could produce enough high quality product to meet their needs. They were unhappy with their farmer's inability to correctly fill orders and his inflexibility in keeping prices reasonable for them.

> And again, he's pissed me off to the point where I've started looking for other people, but I can't find anybody to give me the quality that we need and somebody that we've got at least some sort of relationship with that I know six... 'cause here's the deal, is he's consistent at least. Six months down the road, if I switch, and this person goes, "Hey, we're not gonna do this anymore." I just can't really call [the farmer] up and be like, "Hey. Hi, I'm back."

Flexible. Maintaining flexibility and finding partners who are accommodating is essential to a successful local grass-fed beef market. Being part of a decentralized small-scale market comes with many uncertainties. Business processes and practices are not standardized, cattle are not always ready to go to slaughter when the farmer originally planned, and most of the major players are small scale and have therefore not developed efficiencies.

Processor participants explained that they must stay flexible in dealing with their customers' needs and demands. Some customers have requested that their items be packaged in specific boxes, which has required processors to adjust their packing system. Additionally, one processor was willing to learn new or unfamiliar cuts in order to satisfy his customers' needs. The same processor learned to be flexible in dealing with the constant oversight of the USDA inspector.

> You just gotta have an open mind. You can't fight with them. I mean, you wanna pick your fights, if you are gonna. If they find something dirty, are you gonna argue that it's not? You can clearly see it is. Or if there's condensation on the ceiling, and they'll tell you to get that wiped up, you do it. You don't want it dripping on your food.

Distributors have had to maintain flexibility in dealing with their value-chain partners. One distributor often had to make adjustments when their processors made mistakes with orders, requiring them to adapt by crediting their customers, increasing quality control in their warehouse, or renaming products that were incorrectly labeled. They did not want take the time to rectify mistakes, but had to in order to maintain their business relationships. The distributor explained how they adapted when they found out from a customer that an order was cut wrong or incorrectly labeled.

> So then that turns into a giant debacle of well do you want to keep it, do you get credit? Warehouse, you've gotta open up all these boxes. What else do we have from that lot that's labeled this? It just creates a ton of work to go back through, either rename it whatever, credit customers if they're upset and then if we end up with something totally bizarre, then it's like well how do we move this, what do we even call it, nobody's heard of this…

Restaurants were typically adaptable in dealing with their suppliers. Many were able to handle price fluctuations up to a certain amount. Additionally, some restaurants had the flexibility to change their menu or substitute cuts if supply of their usual cuts ran out. Others adapted when the meat that they ordered was cut poorly. One caterer explained how he's dealt with beef that is covered in unsightly knife marks.

> When I put tenderloin on the menu, I don't have to grill individual tenderloin steaks. I can grill the whole tenderloins and then slice them and as long as I make it look pretty on the plate, I can choose to do whatever I feel like doing, or whatever I see is best for my client's best interests. So if it's not gonna work one way, I just switch it and do it another way and as long as it's consistently good, that's the only kinda consistency that I have to have. So, no, there isn't any ramifications because I just turn it around and do something different with it.

Finally, retailers have made accommodations in order to continue sourcing local grass-fed beef. Some retailers created special order forms because they did not have a consistent supply of grass-fed beef. They explained that this required more work but was worth it to meet customers' product needs. Additionally, retailers were flexible when dealing with their farmer-distributors who were frequently inconsistent when scheduling, delivering, and communicating. They've gone to great lengths connect with their farmers and have adjusted their practices to account for these inconsistences. One retailer recommended:

> Be flexible if that's really what you wanna sell. You have to be flexible to work in that environment. It's not a quarter by three o'clock on Tuesday for a delivery on Wednesday morning before you open, it's make that call on Tuesday, hope that you get it in Friday, have a game plan on what to do with it if it doesn't show up till Monday.

In addition to their own flexibility, participants appreciated that their value-chain partners were also flexible. Distributors described that customers often adjusted to product mistakes and inconsistent supply. Additionally, a restaurant was thankful that their producer was understanding when they temporarily stopped sourcing beef due to price. Restaurants and retailers both valued their distributor's efforts to accommodate their needs.

Inflexibility. Although many local grass-fed beef value-chain partners do what they can to be flexible, many participants recalled past and current frustrations when their partners were not flexible.

Processors often struggled with customers who were not flexible in accepting their storage capacity, either leaving animals at the processor for too long, or taking their business somewhere else because they were unsatisfied with the amount of time the processor could age the beef. Distributors sometimes encountered potential customers that were not willing to adjust their practices to incorporate a frozen product or were not willing to adjust their menu prices to accommodate the slightly higher price of local grass-fed beef. Additionally, distributors claimed that their processors were not willing to modernize their "old school" ways. Some hand wrote all of the cutting instructions and used a wall calendar to schedule customers. This inflexibility has affected the communication between the processor and distributor. One distributor explained:

> The ones that are left are very… resilient in their own way. They have generations of family heritage into the company and they've always done it this way and that's the way they're gona do it… I mean it's even like if I don't order something because we're a little long in it, they'll still send it to me because they'll think that I always order it. I'll take it, but I'll have to ... I gotta follow up with one of them this week like I'm slowing down on Osso bucco, I'm fine, you can put that in the grind. They just keep sending it. So, there's just a lot of variables, and that's why I say sophistication, I think it's just business processes and technology in processors is still very old school.

Finally, some restaurants wished that their processors were more flexible in accommodating their requests for specific cuts, or that their farmers would work with them on

finding a mutually agreeable price. One chef recounted a time when his farmer priced him out of New York Strip Steaks.

> God, I would hope he would make at least some sort of effort to keep prices down for us. He is a businessman, and he has, every now and again, not really worked with us the way I would hope he would. The New Yorks. Prime example. He could have kept them down for us. They just kept going up and up and up. Yeah, he's kinda irked me off every now and again. "Goddamnit, you know you can work with me on this." 'Cause I'm getting so little from him that it's not gonna affect his bottom line.

Equitable profit sharing. The local grass-fed beef middle value-chain strives to ensure that all value-chain partners receive a fair price for their product or service.

Processors were a unique case in the value-chain structure. Two of processors explained that they do not think they are part of the value-chain because they are a “fixed link in the chain” charging a fixed price for their service. In terms of price equity, processors were most aware of their own financial sustainability. One processor instituted higher costs for more labor intensive costs to cover the extra work and time.

Achieving price equity was a major goal for the regional distributor. They felt that it was very important to pay farmers a fair price for their product so they could make a living wage. They explained:

> We want this to be something people can make a living at. And so we're doing what we can to pay good rates to things. I mean you can over pay for stuff but then it's not really sustainable either because you can't keep it up, so we're not in it to maximize profits as a

> middle man, we want this stuff to move, we want to pay our bills and make our farmers better.

Restaurants and retailers also aimed to pay their farmers a fair price. Even if they felt the price was unreasonably high, they often did not haggle since they knew the farmers were struggling to make ends meet. Many restaurants and retailers also felt that they charged a reasonable price for their local grass-fed beef products. One retailer capped their ground beef price because they believed the prices must stay under a certain dollar amount for their customers to perceive the product as affordable. Some restaurants and retailers took less of a mark-up on local grass-fed beef than they would have for a conventional beef product, either bearing the extra cost themselves, or adjusting other menu prices. A retailer explained:

> In supporting our local community, we made it a conscious decision to take a lower margin on our local products versus national. One, to offset some of that higher pricing. So it is competitive to national, but also just to promote and support [the local farmers]…

Price inequity. Some value-chain participants thought that other value-chain participants unfairly charged for their product, and others have simply been priced out of the market. One distributor thought that a local retailer charged a very high and unreasonable price for local grass-fed beef. A few retail participants also believed that their competition charged an outrageous price for local grass-fed beef. Finally, a couple restaurants could not afford to keep local grass-fed beef on their menu, and one restaurant felt that his farmer unreasonably marked-up certain cuts.

Facilitated. Certain participants were value-chain facilitators, easing the burden on their value-chain partners by coordinating the process of moving the product from the farm to the

consumer. Distributors were identified by themselves as well as by their customers as the main facilitators of the local grass-fed beef market in their region. Distributors explained that it is their job to move the product through the supply-chain by coordinating with their producers and processors, scheduling with partners, delivering the product and connecting their customers to their farmers. “Our idea is to the let the farmers farm. And we'll take it from there,” said one distributor. One farmer-distributor has similarly facilitated the value-chain, aggregating local grass-fed beef from multiple producers, coordinating with his processors, filling orders, and delivering the product. A majority of restaurants felt that their distributors are successful in facilitating the grass-fed beef supply-chain. One restaurant described her satisfaction with her distributor:

> It's really helpful having [the distributor] be able to source, that makes it easy. It seems like they're always looking for more sources, too, like more product. There's always new farms showing up and that makes it easy for me. It encourages me and excites me to keep looking for the local product from my sources. They're there to help me.

In a few cases, retailers coordinated their own supply-chain. One retailer has bought whole animals directly from farmers, scheduling and coordinating with producers and processors, and of course selling the product. “I usually plan out about a year in advance for each one. It helps them, the farmer out, helps us out, helps the processor out.” Another retailer has purchased from a farmer that doesn’t have much business experience, and thus the retailer has coordinated part of the supply-chain by taking special orders from his customers, communicating the order to the farmer and then coordinating with the processor.

Mutually beneficial. Many individuals in the local grass-fed beef value-chain recognized the mutual benefit achieved in supporting their value-chain partners, effectively creating an “I

help you, you help me" system. In many cases, going out of their way to help out their partners also positively impacts that individual. For instance, one distributor started sourcing local grass-fed beef in order to help out their retail customers who wanted the product but couldn't afford to take the risk in sourcing it themselves. Since then, protein sales have grown tremendously for the distributor and are now an integral part of their business. Another farmer-distributor has struggled to find enough demand for his product. He recently told his main retailer that if they bought more product, he would give them a price cut. Additionally, this distributor was not familiar with popular retail cuts, so his retailer and his processor coordinated which cuts to purchase. This has been successful for all parties involved. The retailer received a price cut while being able to build customer demand for a new product, the farmer-distributor sold more product, and the processor essentially bought a repeat customer by providing exceptional customer service.

> I told [retailer] I really needed them to take more meat and they asked me, "Well, what muscles do you recommend?" And I said, "You know that more than I do." So they called [processor] and [processor] set it up and they actually bought a pretty good chunk. And he told me there when I dropped it off last week that they would like to do that every two or three weeks now.

Processors also engaged in mutually beneficial relationships. One processor has included farmers in the processing procedure and has educated them about different cuts. One processor explained, "They're eager, they want to learn... If they're going to market themselves, they can be right here to ask a question about muscles, or if this makes a better cut…" Additionally, one processor recounted that one of their major customers recently offered to help them to stay in business because they depend on their beef supply.

Many restaurants have taken small steps to support their value-chain partners. Some restaurants have helped their value-chain partners grow by recommending their distributor to other restaurants, or naming the producer on the menu as a means of farmer advertisement. Some restaurants have bought excess product from their farmer or distributor, and another has bought the whole animal rather than just buying primals or ground beef.

Finally, many retailers also recognized that their business would be better served if they helped their partners grow. One retailer has helped famers attain desired certifications. Another retailer just starting to source local grass-fed beef has developed many ideas to help his farmer-distributor, for instance using fat and trim to create local grass-fed beef hotdogs and Bratwurst.

Communicative, transparent, trusting. Finally, the local grass-fed beef middle value-chain relationships are built on transparency, communication, and trust. Yet breakdown of these relationship building strategies has also occurred within the value-chain. As these three factors are strongly related and often effect one another, they are discussed together.

Communicative. The local grass-fed beef value-chain has depended on communication to coordinate the supply-chain, share information about the product, and to navigate problems when they arise. Many participants cited good and open communication as a major factor behind their strong, trusting, and lasting relationships with value-chain partners. Distributors and some retailers that coordinate their market have developed sound communication strategies to coordinate with their farmers, processors, and customers. Restaurants noted their appreciation of their distributor's preferred communication strategy for ordering: texting or email. Additionally, all sectors cited communication as the main way they have worked through problems with their value-chain partners. For instance, processors used tactful communication techniques to address the problem of poor quality animals with their farmer customers, and restaurants and retailers

used open communication with their distributor to work through product quality problems or incorrect orders. Restaurants and retailers noted that communication has been essential to providing information about the local grass-fed beef product to staff and customers, as well as informing customers when certain cuts run out.

Communication breakdown. Although the participants stressed the importance of communication in relationship development and supply chain management, poor and ineffective communication has been the root of many value-chain problems. For instance, distributors claimed their biggest barrier has been processing inconsistency. They have tried to communicate their needs and problems with inconsistent labeling and receiving the wrong cuts to their processors, but the processors have not change their behavior. Additionally some restaurants simply have not communicated their needs to their distributors because they don't have time. One chef explained that she does not like receiving large cuts of meat that she has to break down further, but she hasn't told her sales rep. "Mainly, I'm so busy, I just let it go, and I don't order it again." Additionally, restaurants and retailers complained that their farmers do not communicate well, which makes ordering and scheduling difficult.

Transparent. As with communication, transparency has been essential to building open, honest, and trusting relationships. Many participants have made efforts to be transparent with their value-chain partners about their business practices. Middle value-chain partners have achieved transparency by openly sharing production practices with their customers. Distributors have provided their customers with information about the farms they source from, and restaurants and retailers have been transparent with their customers about the production practices used to raise the beef they sell. One farmer-distributor has provided tours of his farm to his value-chain partners, giving them a firsthand look at his production practices. Additionally,

processors have been transparent in their interactions with USDA inspectors in order to maintain a positive relationship. Additionally, one processor has given farmers an opportunity to be a part of the processing process, making his practices transparent.

Lack of transparency. Despite this, perceived lack of transparency has damaged relationships and broken down trust. Some participants felt that their value-chain partners have not been transparent about practices, and many value-chain partners contradicted each other in the interviews, potentially due to transparency issues within the value-chain. One major transparency concern for restaurants and retailers was about farmers' production practices. Although they claimed that they trust their farmer, many had underlying questions as to whether products were actually 100% grass fed. This could be rooted in their misunderstanding of the "grass-fed" marketing claim which allows animals to eat items like hay or silage during months where grass is inaccessible. One retailer explained,

> I mean, they all say grass-finished. What is grassed-finished? Another one of those funny words that confuses customers? What are you feeding it? I mean, is it grass? Is it silage? 'Cause there's nobody finding grass right now. So, it's had two cycles of winter, right? Depending on when it's born. Do you know what I mean? I mean, depending on when the cattle's born, it's probably had almost... At least one full cycle of winter. Did it eat grass the whole time or didn't it?

On a related note, one distributor and many restaurants and retailers were under the misconception that one of their farmers finishes his cattle on grain, although this farmer advertised his product as 100% grass-fed and during an interview for this research confirmed that his cattle were indeed 100% grass-fed. Similarly, some restaurants that were buying a product advertised as "grass-fed, GMO-free grain finished" believed that they were buying a 100% grass-

fed product. It was not clear through the interviews where this confusion was rooted. Potentially the distributor shared misinformation or was not adequately transparent about their farmers' production practices to their customers. Or, it is possible that there is a general lack of understanding regarding words like grass-fed and grass-finished throughout the value-chain.

Finally, some value-chain partners questioned the motivations of other value-chain participants, particularly in regards to money. A few restaurants believed that a local distributor was profit motivated and therefore less trustworthy. Additionally, many retailers thought that a competitor charged outrageous prices for their local grass-fed beef products. Yet in interviews with both of these value-chain participants, they explained that they have a very low mark-up on their local grass-fed beef product, and their goal is not to maximize profit. It appears as though these contradictions are rooted in problems with transparency. The distributor and retailer in question may be able to build back the trust of others in the value-chain by being more transparent about their pricing strategies, goals, and motivations.

Trust. Both open communication and transparency described above have been strategies used by the grass-fed beef middle value-chain to build trust with their partners, and most everyone in the middle value-chain described their relationships as trusting. One distributor described how trust is built with his customers. "It's consistency. Trying to always communicate with them, and tell 'em, and talk to 'em, and if there's a problem, you straighten it out right away so it doesn't continue on. It's about the way you do it." Another distributor explained that when things have gone wrong, they have conducted "relationship repair" to rebuild their customers' trust. Restaurants explained that trust has been built by learning their value-chain partners' schedules, learning their farmer's production methods, and sharing important values.

Distrust. Yet cases where communication has failed and value-chain partners are not transparent with each other have resulted in distrust throughout the value-chain. For instance, one distributor no longer trusts that their processor will deliver a consistent product, and one restaurant has been burned by his farmer so many times, that he no longer trusts him.

Summary. Overall, the local grass-fed beef middle value-chain's relationships are strong and possess many characteristics of successful value-chains, such as price equity, mutual benefit, open communication, transparency, and trust (Stevenson & Pirog, 2013). Additionally, like other successful value-chains, the local grass-fed beef middle value-chain relationships tend to be long-term and coordinated by a few key individuals. A major strategy for relationship success has been flexibility. The local grass-fed beef market is new, and efficiencies, structure, scale, and value-chain relationships are still evolving. By maintaining flexibility, value-chain partners have evolved together, defining productive business strategies and their relationships as they go.

However these value-chain relationships are not perfect, and many value-chain problems have stemmed from poor or inconsistent communication and lack of transparency. For instance inflexibility of value-chain partners was cited as a major problem. By redefining communication strategies and improving transparency, the reasons behind apparent inflexibility may become apparent and better understood, or those partners deemed inflexible may be willing to make behavioral changes if they are made aware of the problems they have caused their value-chain partners. Although not inconsequential, these relationship deficiencies will have minimal impact on the success of the value-chain. Clearly, the value-chain is committed to resolving problems, accommodating each other's needs, ensuring that their value-chain partners make a fair wage, and supporting their value-chain partners when they need help. Considering the care

and trust that has already developed, it is likely that the relationship problems discussed in this section can be resolved through continued collaboration.

Research question 3: What are the Middle Value-chains' Perceived Barriers to a Viable Local Grass-fed Beef Market?

Finally, a large portion of the data collection focused on barriers to the growth and success of northwest Lower Michigan's local grass-fed beef market. Major themes surrounding barriers identified by the value-chain were pulled from the data, and included high price, inconsistencies between supply and demand, a lack of consumer demand, logistical struggles, poor quality product, processor inconsistencies, a lack of value-chain knowledge, inadequate infrastructure, unique processor barriers, and the assumption that grass-fed beef is a trend. However, participants have started implementing their own best practices to address some of the barriers they face such as developing supply and demand strategies, implementing product differentiation, developing pricing strategies to accommodate the high price of local grass-fed beef, and vertical integration.

Market barriers. The most notable challenges to a viable grass-fed beef market recognized by all value-chain sectors and nearly all participants fall into the category of market barriers: high price, inconsistencies between supply and demand, and a lack of consumer demand.

Price. Distributors have had trouble attracting new customers because the price point of the local grass-fed beef product is too high. Additionally, many restaurants have struggled with the price of local grass-fed beef. One restaurant was completely priced out of sourcing the product. Furthermore, during the off-tourist season many restaurants have to cut back their

sourcing of local grass-fed beef because the locals cannot afford the product. Others said that price is the main reason they don't purchase more local grass-fed beef. One restaurant said, "I guess it's price because if it was cheaper I would use it more as more of a standard." Others have only used certain cuts because some prime cuts are too expensive for their customers.

> We can't put New York in our menu because we just, food cost-wise, it's prohibitive. 'Cause, we just trim it then we lose about 40%, so we trim it down to the point to where it's prohibitive. Fillet is the same thing. For us to put a fillet on the menu would cost $36, $38, and nobody wants to pay that, not up here.

Finally, retailers also struggled with the high price of local grass-fed beef. One retailer has been hesitant to sell local grass-fed beef because he would make less money selling it compared with the conventional beef he currently sells. He explained the difference between selling a more expensive grass-fed product compared to his conventional beef product from Iowa:

> Why do I want to sell a [local grass-fed] sirloin tip roast that I make $3 a pound on, a sirloin tip roast at $10.99 a pound. If you do the math, it's about 23% or whatever it might end up being. I can take a sirloin tip roast and sell my Iowa beef, at $7.99 a pound. Right? And I can make 50%. So at the end of the week if [a customer's] coming in shopping for a roast, right? Let's say you buy a roast everyday, five pound roast. Every week you buy one. And every week you buy a five pound sirloin tip roast. And I can either make $25 off of you, or I can make $15 off of you. At the end of the year I stand to make $520 more off [a customer] by buying Iowa beef.

Supply and demand. In addition to price, the inconsistencies between supply and demand have been a major challenge prohibiting the growth of the local grass-fed beef market. This

barrier has two sides. First there is a general shortage of local grass-fed beef. The regional distributor has had trouble sourcing the supply of beef they need to satisfy customer demand. One farm that they source from has only been able to supply about half of the product they want to buy. “I think we're able to secure like maybe 20, 25 head a year, and every year we ask for 48. And it's, it's just a challenge.” This has effected restaurants’ and retailers’ ability to keep local grass-fed beef in stock all year. One retailer explained this struggle:

> The summer, which is our busiest time and it's the busiest time for other stores in our region, the supply gets really spotty, and it... Usually, at some point, we just can't get it. And that's the ground... I guess I'm talking mostly about ground beef. And it's hard for our customers 'cause they got really attached to something and then suddenly it goes away.

Additionally, there just aren’t enough local farmers producing grass-fed beef. Many restaurants and retailers have searched for a local grass-fed beef farmer in their area but have come up empty, resorting to sourcing from a regional distributor that gets product from downstate.

The second supply and demand issue has resulted from restaurants and retailers preference for primals and ground beef**,** which has resulted in a shortage of prime cuts and a surplus of less desirable cuts. Farmers selling to this market have struggled to find buyers for the remainder of the animal. Often many usable cuts end up being ground, devaluing the animal. One farmer-distributer said “they're taking some of the primals and chuck rolls and some hamburger, but that leaves me with quite a lot of meat”.

Because there is such a high demand for prime cuts, farmers and distributors have not been able to maintain a consistent supply of high demand cuts, often running out for periods of

time. When this happens restaurants and retailers typically substitute for another cut, take that item off the menu temporarily, source the cut from a national distributor, and may even stop sourcing the product locally altogether. One restaurant explained that he does not source his top selling beef item from his local distributor because he doesn't think they could keep up with demand.

> We do have beef tenderloin and that is just a commercial grade tenderloin. We do sell a lot of that. Those are... That's the only other beef I know on our menu besides featuring the [local beef] and that's just 'cause people want tenderloin and gotta have a tenderloin on their menu. But they probably wouldn't... I don't know what the price of that [local farm] tenderloin is. I'd have to look at that. I haven't considered using it 'cause we go through so much volume, I don't know if they'd be able to keep up.

Customer demand. Finally, many value-chain partners recognized a lack of consumer demand for local grass-fed beef products. In some areas, the population is low-income and customers have not been interested in or can't afford local grass-fed beef. Other restaurants explained it would be worth paying the extra cost of local grass-fed if more of their customers demanded the product, but some people just aren't interested. One restaurant explained, "You get the rotary club that comes in and wants a $12 dinner. All they want is a $12 dinner, and they don't care where... They don't... They're not interested."

Logistics. The logistics of moving the local grass-fed beef product through the supply-chain has been a challenge for most value-chain participants. Participants have struggled to coordinate pick-ups and deliveries with their customers. For instance, processors claimed that customers are often late picking up their product, backing up their storage rooms. Additionally, restaurants and retailers have struggled with farmers who do not deliver the product on time.

In addition, participating in the local grass-fed beef market is time consuming and complicated. Farmer-distributors have struggled to find time to farm, market their product, keep books, coordinate with customers, and deliver the product. One farmer-distributor explained "I'm stretched thin... In the summer I work from daylight until dark, you know. And neither one of us are computer people." Additionally, it takes more time for restaurants and retailers to participate in a local market because they have to coordinate with multiple suppliers, often chasing down farmers who don't return phone calls, and adjusting their operations when deliveries don't come in on time or frequently enough.

Finally, one restaurant serving primarily breakfast and lunch uses a lot of lunch meat which he has not been able to find locally or make consistently himself.

> If I roast my own is it's hard to slice if it's thin... It's hard to have the grain going the right way, and the roasting... 'Cause there's so many different types of cuts. It's hard for me to make a sandwich that is gonna be the same every time. And, when it's on my core menu, you come in and you always get this Chipotle Roast Beef sandwich or whatever. Knowing that it's gonna be the same every time is a huge positive.

Quality. Another barrier that many value-chain participants have experienced is inconsistent animal quality. All of the processors explained that "all grass-fed is not created equal." Some farmers do not properly finish the animal, producing a very lean, small, and tough carcass, which is difficult to cut. One processor described what it's like to see a poor quality animal get processed: "I don't know how they sell it. I'll walk by a cutting table there and I'd say, 'Oh, boy this is awful lean.' And they'll [his employees] say, 'Yeah, it cuts like a Goodyear'". This has been a difficult topic to breach with farmers, yet it is often necessary for processors to explain to farmers that they cannot produce quality cuts from their animal. "It's a fine line of

handling this, give them love, so to speak. So as not to offend the producer, because we want to do business over and over and over, but that sometimes can be a hard line to walk." Additionally, the quality has been so poor at times that processors did not want to put their name on the packaging, worrying that the poor quality would discredit their name.

Distributors have also struggled selling products that differ in quality. Some of the meat they sell has graded better while others have been leaner, making substitution difficult when cuts run out. Finally, participants worried that poor quality animals would give grass-fed beef a bad name and discourage consumers from eating the product.

Processor inconsistencies. Distributors, restaurants and retailers have all struggled to get a consistent product from their processor. Distributors have received products that were poorly cut, mislabeled, or completely wrong. Additionally, their three processors have often processed the same cut differently. "We'll process one herd here and another herd here and we may get the sirloins for both but we are not getting the exact same product from both." Restaurants and retailers have also struggled to get a high quality consistent product from their processors. They recalled instances where products were the wrong weight, or processors did not follow their cutting instructions.

Knowledge. Each part of the value-chain lacks important knowledge that is necessary for the grass-fed beef market to be successful. Distributors worried that processors were not familiar with North American Meat Processors Association (NAMP) standards, which they presume could be why they do not process animals consistently. Additionally, distributors themselves recognized that their sales reps do not have adequate knowledge of different beef cuts. Furthermore, many participants explained that their farmer-distributors do not have adequate

business knowledge or skills to operate efficiently in a wholesale market or to market their product.

Interviews with distributors, restaurants, and retailers all indicated that participants were not totally sure of their farmers' production practices. Many restaurants and retailers, and even one distributor seemed unclear about what beef they were selling. Many mistakenly thought that the farmer they bought from finished on grain, whereas that farm produced 100% grass-fed beef. Others mistakenly thought that they were buying grass-fed beef when really they were buying GMO-free grain finished beef.

Moreover, participants often misused or misunderstood grass-fed terminology. One restaurant said "I wonder grass-fed, does it have to be grass-fed from birth to slaughter? Or can there just be some grass feeding along the way with other stuff, and now you can just stamp grass-fed on it?" Also, many participants used the terms "grass-fed GMO-free corn finished" to describe what they called "grass-fed" beef. Others mistakenly thought that grass-finished products were raised on grain their whole life and then finished on grass. "Grass finished, I just kind of recently learned about that, that's where they're probably raised conventionally and then the last... Probably a period of time, I don't know. A couple, few weeks they're finished on the grass."

Finally all sectors believed that consumers do not have adequate knowledge about grass-fed products such as their value, how to cook the products, and what cuts to buy. One retailer explained: "I feel like people hear grass-fed. They don't know what it means, they don't know where to get it, and they don't know why they should eat it. It's just a term that's hanging out there." Additionally, consumers have been raised on conventional beef and thus have unrealistic expectations when it comes to local grass-fed beef products. Many have demanded fresh

products all year and expect all beef to taste like grain-fed products. They don't know anything else and thus are often turned off by local grass-fed beef.

Infrastructure. Many participants perceived the dearth of necessary infrastructure as a major barrier to market expansion. Participants recognized the difficulty in expanding grass-fed beef production due to the expense of buying or expanding farmland and raising cattle, and the lack of adequate space for farmers to raise cattle on grass. Additionally, all of the sectors unanimously agreed that the region needs more processing capacity. One processor said, "Well, they need more. USDA plants, there's just not enough of them. We're getting cattle from quite a ways away." One restaurant said, "Grass-fed beef would be on every menu here, if we had a slaughterhouse." And finally, a retailer echoed these thoughts, "The biggest barrier is not having a kill facility for the farmers to access where it's fair for them, and they can get it done really the way they want it."

Unique processor barriers. Processors have faced many unique challenges to participating in the local grass-fed beef market. Processors have struggled to accommodate customers' needs in terms of dry aging, storage, labeling, and providing desired cuts. For one, customers want to dry age animals longer than processors can afford to store them. Additionally, many grass-fed carcasses do not have the adequate fat cover to be dry aged for the amount of time that customers request. Also, many customers have wanted specific marketing claims on their labels, such as "grass-fed" or "natural", which they cannot do without going through a USDA certification process. This has strained relations between processors and farmers because many farmers were unaware of this law, and the certification process takes a long time to complete. Additionally, some processors could not process certain cuts that customers asked for due to USDA regulations; for instance the USDA considers the pancreas inedible.

Finally, one processor indicated that finding reliable employees has been quite difficult. He explained: “Oh, I usually go through maybe three, four to get a good one. And you just can't tell, they could have a resume that looks great. You can't tell until you get him.” Many of the employees he has hired were unreliable, not showing up for work, not having a ride work, and letting personal problems get in the way of daily duties. Additionally, the same processor explained that he wants to “slow down”. He has looked for someone willing and dependable to take over plant management, but has had no luck thus far.

The grass-fed trend. Many chefs assume that customers see the claim “grass-fed” as a buzzword and will order the product because they associate it with being ‘trendy’, ‘showy’, or because they assume it is the highest quality product. Some chefs and restaurant owners would rather have customers eat the product without preconceived notions of what the product is, and appreciate the value and quality of the product rather than just conforming to a trend. Therefore many chefs choose not to advertise the word ‘grass-fed’ on their menus, even though they value the product. Additionally, many restaurants compared the word grass-fed to ‘Kobe’, ‘Angus’, and ‘organic’, words that were once associated with fads and have since lost their meaning due to overuse and what they see as inadequate regulation of marketing claims. They worry that the same thing will happen to “grass-fed”, which is another reason why some choose not to advertise their products as such.

Survey results. Table 10 displays the results of the barrier questions on the Grass-fed Beef Belief Survey. Questions 1 and 2 referred to the difficultly of sourcing grass-fed beef in the region, and the adequacy of infrastructure to support a local beef market. For question 1, all processors and a majority of retailers agreed or strongly agreed that grass-finished beef is difficult to source, whereas two distributors felt neutral about this statement and only one agreed.

Restaurants were mixed in their responses, with half agreeing with the statement, two feeling neutral, and four disagreeing or strongly disagreeing. Statement 2 stating that infrastructure in their region cannot support a grass-fed beef market produced mixed results within all the sectors. Two processors responded Strongly Disagree or Disagree while one responded that they did agree, and one distributor disagreed whereas two agreed. Retailers were relatively split, with three responding that they strongly disagreed or disagreed, one feeling neutral, and two agreeing. Finally restaurants were also split, with four strongly disagreeing or disagreeing, three feeling neutral, and five agreeing. The mixed responses to questions 1 and 2 from the sectors indicate that each individual has experienced different levels of difficultly sourcing local grass-fed beef and thus have different views on the ability of their region to accommodate the market.

Questions 3, 4, and 6 dealt with usability and sensory aspects of grass-fed and frozen beef that consumers often take issue with. In general the sectors do not think that grass-fed beef is more difficult to cook than grain-fed beef, with two processors disagreeing with the statement, one distributor disagreeing and two feeling neutral, and a majority of restaurants and retailers strongly disagreeing or disagreeing. The majority of processors and retailers do not think that frozen beef (a typical storage method for local beef) negatively impacts the meat's flavor, whereas distributors and restaurants were more mixed, with one distributor disagreeing with the statement, one feeling neutral and one agreeing, four restaurants strongly disagreeing or disagreeing, five feeling neutral, and three agreeing. In general, as a majority of restaurants disagree or feel neutral, for this group it appears using frozen beef is not an issue. In general, the sectors do not think grass-finished beef has an off flavor, with a majority of processors disagreeing with statement 6, a majority of distributors feeling neutral, all retailers strongly disagreeing or disagreeing, and half of restaurants disagreeing or strongly disagreeing and half

feeling neutral. Finally, a majority of processors, distributors, and restaurants disagreed or strongly disagreed with statement 5, that grass-finished beef is too expensive, and half of retailers also disagreed, with one other feeling neutral and two agreeing.

Table 10
Frequencies of responses to Grass-fed Beef Belief Survey barriers questions by sector

Question	SD				D				N				A				SA			
Sector	P	D	RS	RT	P	D	RS	RT	P	D	RS	RT	P	D	RS	RT	P	D	RS	RT
I			1				3	2		2	2		3	1	6	2				2
II	1		1	1	1	1	3	2			3	1	1	2	5	2				
III			5	1	2	1	3	4		2	2	1	1		2					
IV	2		2	2	1	1	2	3		1	5			1	3	1				
V			1		2	2	7	3		1	2	1	1		1	2			1	
VI		1	3	3	2		3	3		2	6		1							

SD, D, N, A, SA in the top row are abbreviations for Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA). P, D, RS, and RT in the second row are abbreviations of Processor (P), Distributor (D), Restaurant (RS), and Retail (RT). Roman numerals I through VI correspond with the following values *related questions on the Grass-fed beef Belief Survey (questions 5, 6, 7, 8, 9, 13 on the actual survey – See Appendix A):*

I. Grass-finished beef is difficult to source in my region.
II. Infrastructure in my region cannot adequately support a local beef market.
III. Grass-finished beef is more difficult to cook than grain-fed beef.
IV. Using frozen beef negatively impacts the flavor of the meat.
V. Using grass-finished beef is too expensive.
VI. Grass-finished beef tends to have an off flavor when compared to conventionally raised beef.

Solutions. Although the grass-fed beef market in northwest Lower Michigan faces a number of barriers to growth and success, many study participants have developed solutions and their own means of dealing with these barriers.

Supply and demand strategies. In order to cope with inconsistent supply and demand, the middle value-chain has developed many strategies that have allowed them to continue using local grass-fed beef. First, ordering ahead, using a frozen product, and substituting for available cuts has allowed restaurants and retailers to stock up and mitigate problems caused by product scarcity. Some restaurants have put products on special in order to highlight the local product, but also as a way to use local grass-fed beef without having to depend on consistent supply. Additionally, some restaurants have adapted their menu when their cuts run out. One restaurant buys whole animals and uses odd, less popular cuts in order to ensure consistent supply. Another restaurant has started raising their own cattle, giving them control over supply for months out of the year. Finally, some retailers that only source a small amount of local grass-fed beef have used special order forms since their farmer cannot produce constant supply.

Differentiate. Many value-chain partners have distinguished their product, highlighting the farm that raised the animals and the grass-fed production method. This has helped to maintain communication with customers, build demand, and educate customers about the value of local grass-fed beef. Value-chain partners have used a number of strategies to differentiate their product, such as educating their staff, listing product information in menus or on walls, posting information about the farms they source from on their website, or posting farmers' brochures in the store or restaurant. One restauranteur has taken differentiation to the next level by raising cattle on site. The restaurant, which is part of a larger complex including an event space, a winery, and a bed and breakfast, has capitalized on reconnecting people to the food that they eat, calling themselves an "agricultural destination". As people eat products grown or raised on site, they can look outside into the gardens or on to the pasture where cattle are grazing.

Pricing strategies. The grass-fed beef middle value-chain has developed a number of pricing strategies in order to maintain financial sustainability while selling a local grass-fed product and to make their product affordable to their customers. One distributor has used a cost calculator to show potential customers that the price difference between a local grass-fed product and a conventional product is minimal. One processor has determined that they must charge extra for more difficult and time consuming cuts that high-end chefs order. Some restaurants and retailers have bought whole animals or purchased directly from farmers in order to keep their costs down. One restaurant has adjusted the prices of other menu items in order to charge a reasonable price for their local grass-fed beef product. Finally, restaurants and retailers have marked-up their local grass-fed beef product less than other items in order to make them affordable to their customers.

Vertical integration. Finally, in order to have control and to grow their business, some value-chain members have taken on multiple roles in the value-chain. This study included two farmers that also distribute their product, one processor that also raises cattle, another processor that is also a grocery store, and finally one restaurant that is also a producer. These businesses have found that best way for them to grow is to take control of multiple parts of their supply-chain.

Summary. The grass-fed beef market faces many barriers to growth and success, although middle-value chain participants have started to implement their own best practices to mitigate the effects of these barriers. Market barriers (price, supply and demand inconsistencies, and consumer demand), logistical struggles, quality inconsistencies, processing inconsistencies, lack of grass-fed beef knowledge, infrastructure development, a number of barriers unique to processors, and the lack of grass-fed beef advertising due to the assumption that grass-fed beef is

a trend have all been factors working against a viable local grass-fed beef market. The Grass-fed Beef Belief Survey confirms that grass-fed beef has been difficult to source in the region. Yet the survey indicates that the middle value-chain sectors do not feel strongly as to whether there is infrastructure to adequately support a local beef market, and participants generally disagree that grass-fed beef is expensive, responses that are inconsistent with the interview results. These responses could be explained by the fact that participants have been able to work around these potential barriers and still source the product. Furthermore, common beliefs that grass-fed beef is more difficult to cook, that freezing beef negatively effects the flavor of beef, and that the flavor of grass-fed beef is less desirable than that of grain fed were not upheld by value-chain participants. This is hopeful, for if individuals working within the grass-fed beef sector have disproved these assumptions, they may be likely to change some consumers' negative perceptions of grass-fed beef. Finally, many middle value-chain participants have developed innovative ways to minimize the negative effects of inconsistencies between supply and demand, differentiate their product, work around the high price of grass-fed beef, and vertically integrate in order to maximize control of their business.

Chapter 5: Conclusions

This research set out to assess the middle value-chain development and subsequent barriers of the grass-fed beef market in northwest Lower Michigan. Despite linear growth and the known health benefits, the national grass-fed beef market still makes up a very small portion of total beef sales. Furthermore, there is a dearth of literature examining emerging grass-fed beef markets, particularly the middle part of the value-chain which includes processors, distributors, restaurants, and retailers. Because of this and due to its recent development, the local and grass-fed beef middle value-chain in northwest Lower Michigan provides an excellent framework for our research objectives. The three research objectives are:

1. What values permeate the local grass-fed beef middle value-chain?
2. What is the nature of the local grass-fed beef middle value-chain relationships?
3. What are the middle value-chains' perceived barriers to a viable local grass-fed beef market?

The main findings of this research were laid out in the previous chapter, Chapter 4: Results. This section synthesizes these findings in relation to the research questions and the existing literature, highlights the major conclusions, and provides recommendations for practice.

Discussion

Research Question 1: What Values Permeate the Local Grass-fed Beef Middle Value-chain? This research provides evidence that the local grass-fed beef middle value-chain does indeed share many personal and motivating values. All sectors valued relationships, product characteristics, systemic change, and the value of educating customers and consumers about food products. Furthermore, distributors, restaurants, and retailers discussed how they made business

decisions related to local grass-fed beef based on their personal integrity. A key component defining value-chains is the uniting feature of shared personal and business values (Conner et al., 2014; Flaccavento, 2009; Stevenson & Pirog, 2013). Shared values are an indication of congruity of motivations, goals, and business principals within the value-chain (Diamond, Tropp, Barham, Frain, Kiraly, & Cantrell, 2014). Through value-chain wide recognition and promotion of the distinguishing characteristics of a particular product, in this case local grass-fed beef, the value-chain can successfully build a cohesive story and brand of the product that can be carried on to the consumer (Diamond et al., 2014; Lerman, 2012). As the grass-fed beef market is driven by the distinguishing features of the product, shared values between value-chain participants will likely result in a more unified market force and stronger partnerships as the market continues to develop.

Many of the values discerned in this research support past research on values and motivations within the value-chain and alternative food market literature. This research found that product characteristics of grass-fed beef were major motivators for use of the product. Conner et al. (2008b.), Conner et al. (2014), Stevenson (2013) and Stevenson and Lev (2013) also all identified product characteristics as strong motivating values for the value-chain actors that took part in their studies. Additionally, this study has identified a number of restaurant and retailer values motivating their use of local grass-fed beef that align with findings in past studies, such as the desire for systemic change (Dunne et al., 2011; Local Food Research Center, 2012) the desire to support existing relationships (Curtis & Cowee, 2009; Dunne et al., 2011; Inwood et al., 2009), an appreciation of product characteristics (Curtis & Cowee, 2009; Curtis et al., 2008; Duram & Cawley, 2012), and education (Conner et al., 2014).

Many restaurants and the regional distributor displayed evidence of social embeddedness, a theme that has been identified in other value-chain and alternative food market case-studies (Conner et al., 2014; Falat, 2011; Hinrich, 2000; Sage, 2003). By incorporating their social values into their market decisions, it is likely that some businesses participating in the local grass-fed beef market are able to overcome the price barriers that many identified as being present in the grass-fed beef market, allowing them to help expand the market. Conner et al. (2014) came to a similar conclusion about the Vermont FTI value-chain which was able to overcome some price barriers by placing more value on community goals. However, social embeddedness can only go so far in balancing out value and price. With the grass-fed beef middle value-chain, many restaurants and some retailers valued the local grass-fed beef product and the associated social benefits, yet they admit that they would buy more if the product were less expensive.

Although restaurants were the only sector to discuss their reverence for farms and farming, it is important to note the relevance of this finding in relation to the tourism based region where this study was conducted. A number of the counties included in this study are situated on Lake Michigan and feature tourist attracting landscapes such as Sleeping Bear Dunes National Lakeshore and rolling hills of wineries and cherry farms. As regional food systems continue to grow, these landscapes are increasingly including bucolic agricultural land. Chefs and restaurant owners in this study have indicated an appreciation for the farming tradition associated with raising grass-fed beef and the resulting beautiful farmland. Thus it is important to note the potential aesthetic contribution and desirability of pastureland in this heavy tourist region over the alternative of confined animal feeding operations.

Despite the similarities between this research and the value-chain literature, other studies on local meat and local food recognize environmental stewardship as a motivating value for producers (Conner et al., 2008b; Stevenson & Lev, 2013), as well as retailers and restaurants (Curtis & Cowee, 2009; Dunne et al., 2001; Murphy & Smith, 2011; Starr et al., 2003). In the case of the local grass-fed beef middle-value chain examined in this study, environmental values were widely spread, with some possessing a strong environmental worldview and others with much lower NEP scores signifying acceptance of a socially dominant worldview. Additionally, only 3 restaurants and 3 retailers mentioned environmental stewardship in relation to grass-fed and local food during their interviews. Thus although environmental motivations may be present for some in the value-chain, this was not a commonly shared value within or across sectors. Considering the strong potential for environmental stewardship to be upheld by grass-fed beef producers, it is surprising that this theme was not more prevalent in the findings. This may be due to a lack of knowledge of the environmental benefits of grass-fed beef, indicating the need for market wide education on the topic.

In addition, this research extends beyond past research on meat centric value-chains by evaluating the values and motivations of processors. Although the processors do share some values with the rest of the value-chain, such as acknowledging unique grass-fed beef product characteristics and valuing their relationships with their stakeholders, the processors in this study described themselves as being less involved than the other sectors or disconnected from the value-chain framework. They see themselves as simply providing a service at a fixed cost that they would continue providing with or without local grass-fed beef customers. In a sense, processing is a detour in the route of the grass-fed beef product from farm to table. Yet processing is essential to the grass-fed beef system, and the entire market relies on a successful

processing operation, making processing a lynchpin in the system. As the results of this study indicate, a lack of processing infrastructure and poor quality processed products are noted barriers to achieving a successful grass-fed beef market in the region. Therefore although the processors themselves may not be as invested in the grass-fed beef market or feel as personally connected to the value-chain as the other sectors, ensuring that the processing sector can accommodate a growing grass-fed beef market in terms of processing capacity and maintaining a high quality, consistent processed product is necessary for market success.

Research Question 2: What is the Nature of the Local Grass-Fed Beef Middle Value-Chain Relationships? In examining the nature of the local grass-fed beef value-chain relationships, this research identified value-chain relationships as long-term, flexible, equitable, facilitated, mutually beneficial, transparent, communicative, and trusting. Although these positive relationship traits were prominent throughout this research, participants also identified instances where these traits were not present, causing problems between value-chain partners. There was evidence that some relationships were short-lived rather than long-term; that some value-chain partners were inflexible; that price equity was not always achieved; and that value-chain partners struggled to maintain open communication, transparency, and trust. Similarities between this research and the existing literature on value-chains and alternative food markets indicate that the local grass-fed beef market in northwest Lower Michigan does operate within a value-chain framework and has found success by adopting key value-chain characteristics. Furthermore, the literature indicates that the local grass-fed beef middle value-chain is not alone in their struggles to build successful partnerships. Most importantly, recognizing the particular relationship weaknesses within this value-chain presents opportunities to strengthen value-chain relationships, thus strengthening the market.

Relationship characteristics present in this value-chain align with the value-chain literature as well as examples of best practices identified in alternative food market literature. This research identified most value-chain relationships as being long-term and committed, characterized by open communication, transparency about business practices, and trust, which have also been identified in key value-chain literature as defining value-chain traits (Stevenson & Pirog, 2013). Additionally, participants in this study described their attempts at profit fairness by keeping prices reasonable for consumers and by paying fair prices to farmers for the product. This finding supports a number of value-chain case-studies that identify the achievement of price equity as a major component of successful value-chains (Stevenson, 2013; Stevenson & Lev, 2013; Stevenson & Pirog, 2013). A number of participants also described their relationships as mutually supportive and beneficial, where business partners went out of their way to help each other when needed, ensuring not only further success of their business partners but also of themselves. Actions of mutual benefit indicating the interconnectedness and collaborative nature of value-chains have been acknowledged as a major characteristic of value-chains explored in the literature (Hardest et al., 2014; Jablonski et al., 2011; McCallum et al., 2014). Finally, many case studies acknowledge the need for value-chains and alternative food markets to be facilitated by one key partner (Day-Farnsworth et al., 2009; Diamond & Barham, 2011; Stevenson, 2013; Stevenson & Lev, 2013). The necessity of these key partners was also exhibited in this research. The local grass-fed beef middle value-chain was typically facilitated by either distributors and/or retailers, who were active in securing the grass-fed beef product from farmers, coordinating with processors, and handling the logistics of transportation and storage.

In contrast, this research identified many relationship challenges between value-chain partners. Although not the norm, these challenges have caused tensions between value-chain

partners and pose a threat to further development of the value-chain. Instances of inadequate and ineffective communication between value-chain partners has caused dissatisfaction of relationships and has decreased the effectiveness of the value-chain. In addition, interview data suggests some lack of transparency between value-chain partners, particularly regarding grass-fed beef production practices and the pricing of products by others in the value-chain. A number of individuals in the value-chain could not accurately identify the production practices of their farmers, mistaking a 100% grass-fed product for a grain-finished product and vice-versa. This phenomena was identified by the researcher after talking to many restaurants and retailers that bought grass-fed beef, and distributors and producers selling the product. Without explicitly asking each value-chain partner about the nature of this discrepancy (which could not be done in this research in order to maintain confidentiality), the root cause behind this misunderstanding cannot be fully known. Yet through extensive conversations with the research participants it has been concluded that this problem can partially be attributed to a lack of transparency between value-chain partners (whether purposeful or not) about the practices used to raise the grass-fed beef. There was additional evidence of inadequate transparency regarding the pricing practices of certain value-chain partners, resulting in a misunderstanding of these partners' intentions and mistrust within the grass-fed beef market. These findings support the value-chain literature regarding challenges maintaining communication (Conner et al., 2008b.; Curtis & Cowee, 2009; Day-Farnsworth et al., 2009), transparency, trust (Stevenson & Pirog, 2013).

Some participants in this study felt that price equity was not being achieved within the value-chain, referring to their inability to afford certain local grass-fed beef products and the feeling that others in the value-chain were charging unfair prices. This finding aligns with the literature that identifies achieving profit equity as a challenge when establishing value-chains

(Conner et al., 2014; Stevenson et al., 2011; Stevenson & Pirog, 2013). Additionally, this research identified inflexibility as hindering market growth, terminating value-chain partnerships, or causing tensions between current value-chain partners. Although not directly described as inflexibility in the literature, it can be deduced that some problems in emerging alternative food markets derive from the inflexibility of restaurants to alter their current practices (Reynolds & Fields, 2011; Schmit & Hadock, 2003; Star et al., 2003). Finally, due to the previously mentioned relationship struggles, some value-chain partnerships were not committed, but rather short-term.

Research Question 3: What are the Middle Value-chains' Perceived Barriers to a Viable Local Grass-Fed Beef Market? This researched uncovered a number of barriers experienced by the local grass-fed beef middle value-chain in northwest Lower Michigan. The major barriers to market expansion identified in this research were high prices, inconsistencies between supply and demand, lack of customer demand, logistical problems, inconsistent and poor quality product, processor inconsistencies, lack of knowledge about the product, lack of necessary infrastructure, a number of barriers unique to the processing sector, and a lack of promotion of the grass-fed product due to the belief that grass-fed beef is seen as a trend.

As previously mentioned, although this research indicates that social embeddedness influences some participants in the middle value-chain to source local grass-fed beef, price is still a factor to many. High prices of grass-fed beef have made it difficult for distributors to expand their customer base, and some restaurants and retailers find certain cuts cost prohibitive, preventing them from expanding their grass-fed beef sourcing. In addition to high prices, participants have acknowledged inconsistent supply and availability of the local grass-fed beef product. It is likely that this barrier has a number of causes. Many indicate the need for

additional grass-fed beef producers in the region. The deficit in producers may also be influenced by another barrier, a lack of processing infrastructure, which may deter some farmers from expanding production and others from entering the market. Additionally, due to the conventional nature of our food system, there is high demand for some cuts while farmers and distributors have trouble selling less popular cuts, resulting in inadequate supply of some cuts and a surplus of others. The barriers of high price (Conner et al., 2008; Inwood et al., 2009; Star et al., 2003) and inadequate supply (Conner et al., 2008; Curtis & Cowee, 2009; Dunne et al., 2011) are echoed in the literature on alternative food markets which cite these challenges as deterrents from entering alternative markets and struggles of those participating in such markets.

This research found that many individuals in the local grass-fed beef value-chain struggled with logistical challenges relating to coordination of the supply chain, such as scheduling with value-chain partners and finding the time to participate in a local market which requires more time than sourcing from conventional markets. This finding supports existing literature on alternative food market challenges which also cite logistical challenges as a barrier to market success (Reynolds & Fields, 2011; Schmit & Haddock, 2003; Stevenson, 2013). Some logistical problems may be reflective of poor communication and a lack of flexibility within the value-chain. Because this is an emerging market, it is likely that current supply chain processes have not reached desirable levels of efficiency. A unique logistical problem not accounted for in the literature indicates that certain types of restaurants may have more difficulty using local meat than others. This finding comes from one restaurant that is highly dependent on lunch meat which is logistically challenging to fabricate at a local level. This challenge could potentially be an opportunity for small processing plants to expand business by offering services such as processing lunch meat.

A number of barriers identified by participants revolved around the processing sector including a lack of processing infrastructure, inconsistencies in the processed product, and specific processor experienced barriers. All sectors participating in this study acknowledged the need for additional processing capacity in the region, which supports findings in other evolving niche meat market studies (Conner et al., 2008b; Gwin et al., 2013; Joannides, 2013). The market cannot continue to expand without processing facilities within a reasonable distance of farmers. A lack of grass-fed beef producers in certain counties included in this study could be partially reflective of the long distances producers would have to travel to the nearest processing facility. Additionally, distributors, restaurants, and retailers have all struggled to get a consistently high quality product from their processors, with some cuts poorly trimmed or sloppily cut, others incorrectly labeled, or with processors delivering a completely wrong cut. Although not a common finding among the niche meat literature, Sleeping Lion Associates (2005) does find a similar result in their study. It was also speculated by one participant that processors lack knowledge of the NAMP processing guidelines, resulting in wrong or inconsistent cuts. Finally, processors themselves have identified their own unique barriers to participating in the local grass-fed beef market. In one case, a processor has struggled to maintain a consistent workforce, a finding that supports other literature on niche meat processing (Conner et al., 2008b; Dickenson et al., 2013; Johnson et al., 2012). Additionally, processors have found it difficult to fulfill certain customer requests for dry aging time, carcass storage, and processing specific cuts.

The previously mentioned findings all effect the development of the market and support evidence from the literature on barriers to alternative food markets. However a number of findings differed from barriers described in the literature or have not been noted in the literature. First previous research shows that processors struggle to maintain consistent supply of animals

from local farmers, which hinders their business growth (eXtension, 2015; Gwin et al., 2011; Gwin et al., 2013; Johnson et al., 2012). Inconsistent supply was not mentioned as a barrier for processor participants during this research. This could be because the processors interviewed as part of this study are well established and all process many different types of locally raised animals.

Additional challenges identified by this research that are not present in other studies include low customer demand, problems caused by inconsistent animal quality, inconsistencies between processors, lack of knowledge about the product within the value-chain, and problems with labeling marketing claims. Certain restaurants and retailers that participated in this study said that they would source more local grass-fed beef if there was more demand from their consumer base. Additionally, processors and distributors particularly struggle with the inconsistent quality between different farms, with some farms producing very high quality animals and others producing low quality, very lean animals. This prevents substitutability of products when farms run out of certain cuts, and can result in mixed consumer perceptions of grass-fed beef. Quality differences could be the result of different production practices, different land characteristics, and in some cases a lack of production knowledge. In addition to inconsistencies in animal quality, a number of participants noted inconsistencies in the processed product. The same cuts from different processors are not consistent, again preventing substitutability. Although the source behind these inconsistencies is unclear, it is possible that different qualities of the grass-fed animals themselves could adversely affect the end product coming from the processor.

Surprisingly, there was a dearth of knowledge about local grass-fed beef and the market throughout the entire value-chain. There were speculations that processors did not know the

NAMP standards, some distributors were unfamiliar with different beef cuts, and farmer-distributors often did not have adequate business experience. In addition a large proportion of participants were unsure of the definitions and variations of grass-fed beef and did not know or misunderstood the production practices used to raise the beef they sold.

Processors explained a number of difficulties involved in labeling grass-fed beef with marketing claims. The process for applying for the use of marketing claims is cumbersome for the farmers and processors to execute, and many producers do not have adequate knowledge of such regulations which results in unrealistic labeling expectations.

One final barrier not explored in the literature is the belief that grass-fed beef is a trend and the subsequent lack of advertising of the grass-fed production practice. Chefs were worried that customers would see the terms "grass-fed" on the menu and choose to purchase the item due to its name value, to show off for friends, or in order to be trendy. Chefs wanted customers to buy their product because of the value and the quality rather than blindly purchasing something due to empty name recognition. Additionally, chefs were worried that by playing into the grass-fed trend, they would perpetuate overuse of the term, which would eventually contribute to the decline of grass-fed beef popularity. Therefore, some chefs choose not to promote grass-fed, with some focusing only on the local characteristic of the product. This was an unexpected finding, as the term grass-fed is a way to inform customers of the many benefits of that product. One may think that to grow the grass-fed beef market it would be necessary to inform consumers that the product is grass-fed. Potentially these chefs assumed that their customers more highly valued the "localness" of the product and were not worried about losing customers by not advertising grass-fed. Or, perhaps chefs without financial woes can afford not to promote such products and rather rely on their customers discerning pallets to grow the market. Regardless, this lack of advertising

could be a barrier to growing the grass-fed beef market by downplaying the importance of grass-feeding as a production practice. Customers that may be looking for a grass-fed product may not order beef on menus that do not promote their product as grass-fed. Or, customers that really enjoy a beef product at a restaurant serving grass-fed beef may not realize the product is grass-fed and therefore may not realize their appreciation of grass-fed beef.

Many of these previously unrecognized barriers could be unique to the local grass-fed beef value-chain participants in northwest Lower Michigan. Or, they may not have been previously identified because there have been very few comprehensive studies examining more than one sector within a value-chain, i.e. many previous studies have looked at value-chains and alternative meat markets from the perspective of only one sector.

Although the barriers experienced by the value-chain certainly effect participants' ability to participate fully in the market, participants described cases of innovation that have allowed them to overcome some of these barriers. Many have developed their own means of dealing with inconsistent supply, such as buying large quantities of beef in advance and freezing product, using off cuts, altering menus when cuts run out, putting grass-fed beef on special rather than on their base menu, using special order forms for retail grass-fed beef, and in one case a restaurant has begun raising their own beef. Additionally, many use product differentiation to educate their consumers about grass-fed beef and to explain the higher prices of local grass-fed beef products. Differentiation has been a successful practice for other value-chains and alternative food markets (Conner et al. 2008b; McCann & Montabon, 2012; Murphy & Smith, 2011; Stevenson, 2013; Stevenson & Lev, 2013). Value-chain actors have developed their own pricing strategies to make their local grass-fed beef product affordable while still making what they need to survive, with processors charging more for more difficult cuts, distributors using a cost calculator to compare

grass-fed to conventional prices, restaurants and retailers buying whole animals rather than more expensive individual cuts, and restaurants and retailers marking up local grass-fed beef less than they would conventional beef. And finally, many businesses played multiple roles in the value-chain in order to have more control over the supply chain. This is a common practice within the value-chain literature, with alternative meat producers often also distributing or retailing their product (Stevenson, 2013; Stevenson & Lev, 2013). Although these best practices may not be directly transferable to others in the value-chain or to other alternative meat value-chains, they may be adapted to other circumstances and used as a jumping off point for value-chain improvements.

Conclusions and Recommendations

The following summarizes the key findings from this research and provides recommendations to address these findings. This research presents evidence that the local grass-fed beef middle value-chain in Lower northwest Michigan possess a number of characteristics also found in successful value-chains identified in the literature. The grass-fed beef middle value-chain explored in this study shares a number of values indicating similar motivations for participating in the local grass-fed beef market and similar business philosophies. Additionally, the middle value-chain is generally comprised of long-term, committed, mutually beneficial relationships characterized by flexibility, the desire for profit equity, transparency, communication, and trust. Yet there were a number of instances where participants' relationships did not adhere to a value-chain framework. Cases of short-term relationships, inflexibility, the feeling that price equity was not being achieved, poor communication, lack of transparency, and resulting distrust indicate that the value-chain needs to be strengthened in some areas. It is recommended that the value-chain further explore what it means to operate as a value-chain and

the benefits of collaborating with a value-chain so that processors, distributors, restaurants, and retailers can further capitalize on their shared values and positive relationship characteristics, and work together to further identify weaknesses within the value-chain. Strengthening of the value-chain structure and relationship ties could also help to alleviate logistical issues through improved awareness and communication. This can be done through the initiation of value-chain meetings. Partners should meet regularly to discuss their current business strategies, collaboration (including what is working and what is not working), and to brainstorm barriers the partners are currently facing.

One area of discordance in the middle value-chain was variations in environmental motivations and environmental worldviews. Participants within and between sectors had widely varying NEP scores indicating environmental worldviews of various strengths. Moreover only 3 restaurants and 3 retailers mentioned the environment as a motivation for sourcing local grass-fed beef. Because grass-fed beef has the potential to be a more ecologically sound method of producing beef over conventional practices, it is surprising that this was not a more common theme throughout the interviews. It is possible that the other product characteristics of grass-fed beef and other shared values are more important to these participants than environmental impact, and thus regardless of dichotomous environmental worldviews, participants are united by other factors. This result indicates that there is a need for value-chain wide education on the environmental benefits of grass-fed beef.

The relationship between the processing sector and the rest of the value-chain is important to take note of as the value-chain and market continue to develop. Although the processors do share some of the same values as the rest of the value-chain, during interviews they explained that they did not feel as though they were part of the value-chain, rather they

provide a necessary service and are not specifically invested in grass-fed beef. Despite this feeling of separation, the processing sector plays an essential role in the growth of the grass-fed beef market and as the previous results show a number of barriers to market growth center around processing. There is general consensus that there is a need for additional processing facilities in northwest Michigan in order to expand the market. Also, there are reports of inconsistency in the quality of the processed product, with different processors producing different versions of the same cut and processors cutting poorly. Finally, processors themselves have unique struggles with the grass-fed beef market, with customers requesting unreasonable storage and aging times, and with difficulties fulfilling customer's requests for labeling packages with marketing claims. There is a need to better connect processors to the value-chain in order to invest them in the future of the grass-fed beef market. Additionally, considering the imperative role that processors play in making the product available to consumers, it is necessary for the value-chain to mitigate the barriers associated with processing including: working to increase the capacity of current processing facilities and/or encouraging new processing facilities to open; working with processors to determine the root cause of the cut inconsistencies and quality issues that distributors, restaurants, and retailers have encountered; and encouraging communication between processors and their customers to alleviate the unique processor experienced barriers.

The most notable and potentially impactful barriers experienced by the local grass-fed beef value-chain are inconsistencies between supply and demand, value-chain knowledge, and the lack of processing infrastructure mentioned in the previous paragraph. A lack of adequate supply will literally prevent market growth, and if restaurants and retailers continue to only demand prime cuts and ground beef, farmers will lose money and valuable cuts will be wasted. Furthermore the conventional mindset that end-users can get the cuts they want in whatever

quantity they want will be perpetuated, resulting in an unsustainable market. One possible solution to supply quantity and consistency problems would be to institute farmer cooperatives. Cooperatives would allow farmers to combine resources such as marketing, financial management, or equipment costs, and share valuable knowledge. Furthermore if farmers created a cooperative, they could align production practices and follow cooperative defined standards, which would improve product consistency. This would alleviate problems of substitutability, as the cooperative would likely produce more product than single farms and the product would have a more uniform quality. Additionally, some restaurants in this study have already started using off cuts and other restaurants and retailers are buying whole animals from their local farmers. Yet this is not the norm. Education is necessary to educate chefs and retailers about how to prepare and sell the less desirable primals, and for consumers to inform them about the culinary benefits of less familiar cuts. Preliminary efforts are already being made to promote the use of value-added beef cuts to culinary, retail, and distribution professionals by Michigan State University and Michigan State University Extension. Further work on this front could increase carcass utilization and reduce dependency on traditionally popular prime cuts.

The lack of market knowledge about grass-fed beef and associated terminology will hurt market development. How can the middle value-chain help to grow the market if they don't know what they are selling? Currently some distributors, restaurants, and retailers are misrepresenting the product they are selling because they do not know the actual production practices of their farmer, confusing grass-fed beef with grain-fed, and grain-finished for grass-fed. Many participants in the study did not know the definition of grass-fed or of other associated terms such as grass-finished. Because grass-fed beef markets are dependent on the distinguishing characteristics of the product, such as health benefits and improved animal welfare, it is

important that the product is advertised accurately. Education about grass-fed beef is needed throughout the middle value-chain. Michigan State University Extension is a knowledgeable resource on grass-fed beef, and the program has potential to lead an educational campaign for the local grass-fed beef middle value-chain, creating documentation defining grass-fed beef, describing production practices, and explaining associated marketing claims and regulations. Additionally, grass-fed beef farmers can make efforts to better educate their customers and consumers about grass-fed beef. For instance, they could organize educational demonstrations about grass-fed beef which could include information about production techniques, benefits of the product, and environmental stewardship practices.

Finally, based on comments made during the interviews, additional value-chain training may be beneficial. Farmer education about marketing and business skills could improve many of the logistical problems encountered by participants, and could help to grow the grass-fed beef market by giving farmers the tools necessary to advertise. Business and marketing schools in local universities could partner with Extension to provide this important training. Additionally, based on comments regarding processor inconsistencies, NAMP training for processors may be useful. One distributor explained that they hoped to find grant funding to implement such training for their processor partners.

Future Research

Two themes arose during this research which were not discussed in the results because they did not directly answer any of the research questions. Yet if explored further these themes could provide valuable information about developing grass-fed beef markets.

First, most value-chain participants had never heard the term "values-based food supply chain" and none had previously used the term to describe their business. Although after learning the definition they agreed that their relationships with their grass-fed beef partners fit the description. The fact that these businesses had never heard the term before indicates a potential disconnect between academic research on value-chains and real world "value-chain" experiences. It would be interesting for future research to explore this disconnect and the potential ramifications.

In addition, some participants assumed that others in the market were falsely advertising local and grass-fed products. One farmer-distributor claimed that another beef producer in the area was falsely advertising his product as natural when he uses antibiotics and that another claims his products are grass-fed when actually his cattle have never seen grass. Also, as one restaurant-owner shared, they are aware of a few local restaurants that falsely advertise that they are selling local food products. Although there was not enough evidence in this research to claim dishonesty in the market, future research could explore the effects that false advertising could have on market success.

Our understanding of evolving grass-fed beef and other alternative food markets could be expanded through further research. First, this research indicated that environmental values were not strong motivators for the local grass-fed beef middle value-chain, despite the potential for grass-fed beef to improve environmental sustainability. Future research could more directly explore the environmental beliefs and motivations of the grass-fed beef value-chain in order to better understand the role of environmental values in the market. Furthermore, future studies may benefit by understanding the perceptions of non-value-chain participants, potentially illuminating market entry barriers. Additional research could explore the choice not to market

grass-fed beef products due to the assumption that grass-fed beef is a trend. Such research could explore whether or not restaurants in other grass-fed beef value-chains feel similarly, and whether this lack of advertising could harm the development of the grass-fed beef market. This exploratory study could serve as a baseline for more standardized research by using the findings to create surveys specifically focused on personal and motivating values, relationship characteristics, and market barriers. Finally, as mentioned in Chapter 4, the themes of financial sustainability with all sectors, inherent value of farms and farming with distributors, processors, and retailers, and community unity with restaurants were mentioned in interviews in regards to values, but were too space to include in the results. Future studies may want to explore these themes in relation to shared values further.

Overall, this research found that the local grass-fed beef middle value-chain in northwest Lower Michigan shares values and has developed committed and productive working relationships. This research also identifies suggestions for relationship improvements and the need for market improvements in order to further grow the local grass-fed beef market. This research contributes to the broader literature of values-based food supply-chains and alternative meat food systems by identifying general value-chain and alternative food market barriers that are likely relevant to other evolving markets. Further it lays way to additional studies concerning potential barriers to local grass-fed beef markets, such as the desire to withhold marketing claims so as not to perpetuate trends, which will in turn deepen our understanding of evolving local and alternative food systems, contributing to a more sustainable grass-fed beef market and local food system.

APPENDICES

APPENDIX A

Survey

Informed Consent

***Study Title**:* Exploration of the Local Grass-fed Beef Middle Value-chain in Northwest Lower Michigan

***Researcher and Title**:*

Emma Strong, Graduate Research Assistant

***Department and Institution**:*

Department of Community Sustainability, Michigan State University

Research Project and Participant Involvement:

This research is being conducted as part of the researcher's Master's thesis project, and has the purpose of understanding the grass-fed beef value-chain in northwest Lower Michigan. You must be at least 18 years old to participate in this research.

Participants' involvement will include completing a 3 part survey and participating in a one-on-one interview. The researcher may ask that you participate in a follow-up interview that could take the form of email, a telephone call, or an in person interview. The initial interview will take approximately 45 minutes to 1 hour and will be digitally recorded. If requested, the recording and the findings of this research will be shared with participants. At the end of this study, the audio files from the interview will be destroyed.

Potential benefits and risks:

Participation in this study and study results could positively impact the local food supply chain.

There are minimal professional and social risks for participants if they share sensitive information during the interview or in the survey *if* this information is seen by others, however, the researcher will do everything they can to safeguard the confidentiality of these data.

Confidentiality:

To protect your privacy, to reduce any possible risks, and to ensure confidentiality, identifiers from the interview and surveys will be removed once data is recorded. An alias will be used on all discussion notes and in any other documents resulting from this research. Additionally, all documents relating to the participant will be stored in a locked filing cabinet and a password protected computer. Information about you will be kept confidential to the maximum extent allowable by law. Surveys and audio-recordings will be destroyed at the end of this study.

Rights:

Participation in this research project is completely voluntary. You have the right to say no. You may change your mind at any time and withdraw. You may choose not to answer specific questions or to stop participating at any time. You will not receive money or any other form of compensation for participating in this study.

If you have concerns or questions about this study, such as scientific issues, how to do any part of it, or to report an injury, please contact the researcher, Emma Strong at:

Emma Strong

310 Natural Resources Building

East Lansing, MI 48824

412-901-6150

stronge3@msu.edu

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Program at 517-355-2180, Fax 517-432-4503, or e-mail irb@msu.edu or regular mail at Olds Hall, 408 West Circle Drive #207, MSU, East Lansing, MI, 48824.

You indicate your agreement by participating in this study.

Part I:

Please indicate to what extent you **agree** with the following belief statements about locally produced grass-finished beef (Please select **one** response for each question):

Table 11: *Grass-fed beef Belief Survey given to participants*

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Grass-finished beef has no health benefits over conventional grain-finished beef.	❍	❍	❍	❍	❍
Grass-finished beef systems result in improved animal welfare conditions over conventional systems.	❍	❍	❍	❍	❍
Serving locally raised beef in restaurants improves the local economy.	❍	❍	❍	❍	❍
It is important to support local beef farmers by using their beef in my establishment.	❍	❍	❍	❍	❍
Grass-finished beef is difficult to source in my region.	❍	❍	❍	❍	❍
Infrastructure in my region cannot adequately support a local beef market.	❍	❍	❍	❍	❍
Grass-finished beef is more difficult to cook than grain-finished beef.	❍	❍	❍	❍	❍
Using frozen beef negatively impacts the flavor of the meat.	❍	❍	❍	❍	❍
Using grass-finished beef is too expensive.	❍	❍	❍	❍	❍

Table 11 (cont'd)

It is important to know who raised the beef sold at my establishment.	❍	❍	❍	❍	❍
It is important to know the production practices used to raise the beef sold at my establishment.	❍	❍	❍	❍	❍
It is not important to educate my consumers about where our beef is sourced.	❍	❍	❍	❍	❍
Grass-finished beef tends to have an off flavor when compared to conventionally raised beef.	❍	❍	❍	❍	❍

Part II:

Based on your own attitudes, please indicate to what extent you **agree** with the following statements. (Please select **one** response for each question):

Table 12: *New Ecological Paradigm Survey given to participants*

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
We are approaching the limit of the number of people the earth can support.	❍	❍	❍	❍	❍
Humans have the right to modify the natural environment to suit their needs.	❍	❍	❍	❍	❍
When humans interfere with nature, it often produces disastrous consequences.	❍	❍	❍	❍	❍
Human ingenuity will insure that we do not make the earth unlivable.	❍	❍	❍	❍	❍
Humans are severely abusing the earth.	❍	❍	❍	❍	❍
The earth has plenty of natural resources if we just learn how to develop them.	❍	❍	❍	❍	❍
Plants and animals have as much right as humans to exist.	❍	❍	❍	❍	❍
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	❍	❍	❍	❍	❍
Despite our special abilities, humans are still subject to the laws of nature.	❍	❍	❍	❍	❍

Table 12 (cont'd)

The so-called "ecological crisis" facing humankind has been greatly exaggerated.	❍	❍	❍	❍	❍
The earth is like a spaceship with very limited room and resources.	❍	❍	❍	❍	❍
Humans were meant to rule over the rest of nature.	❍	❍	❍	❍	❍
The balance of nature is very delicate and easily upset.	❍	❍	❍	❍	❍
Humans will eventually learn enough about how nature works to be able to control it.	❍	❍	❍	❍	❍
If things continue on their present course, we will soon experience a major environmental catastrophe.	❍	❍	❍	❍	❍

Part III:

Please answer all of the following short answer questions. Provide as much detail as you need to explain your answer. Do not skip any questions. If you don't know how to answer a question, please try, and then explain what you had trouble with.

1. Are you familiar with the term value-chain?
    a. If yes, how would you describe what a value-chain is?
    b. If no, proceed to the next question.

The Agriculture of the Middle provides the following definition for value-chains:

Values based food supply chains are strategic business alliances among farms/ranches of the middle (*midsized farms)* and other agrifood enterprises that: (a) handle significant volumes of high-quality, differentiated food products, (b) operate effectively at multi-state, regional levels, and (c) distribute profits equitably among the strategic partners. Values-based supply chain business models place emphasis on both the values associated with the food and on the values associated with the business relationships within the food supply chain.

The literature on values based food supply chains distinguishes value-chains from traditional supply chains.

Conventional supply chains tend to operate under win-lose conditions where business partners try to maximize their individual profit by purchasing for less and selling for more. Typically welfare and profits are not distributed equally throughout the supply chain.

2. After reading this definition, would you describe the relationships you have with your local grass-fed beef business partners as a "value-chain"?
    a. If yes, why?
    b. If no, why not?
3. Who are your value-chain partners and what role do they play in the value-chain?
    a. How did you and your value-chain partners begin working together?
    b. Is there one individual or business that coordinates your value-chain?
    c. How often do you communicate/interact with your value-chain partners?
        i. In general, what is the purpose of these interactions?
        ii. What methods do you and your value-chain partners use to communicate (e.g. phone, email, in person meetings)?
4. Is trust a dominant feature in your relationships with your value-chain partners?
        i. If yes, please explain, giving details.
        ii. If no, please explain why not.
5. How are prices determined for your local grass-fed beef product?
    a. Do you make pricing decisions alone or with your value-chain partners? Please explain.
6. Do you and your value-chain partners make attempts to differentiate your product (distinguish it from other products)?
    a. How?

    b. Is this something that only you do, or is differentiation upheld throughout the value-chain?
7. Do you maintain a connection to the farmer that raised the local grass-fed beef you sell?
    a. If so, how?
    b. Is this connection maintained throughout the entire value-chain?
8. What is the biggest challenge in working/conducting business with your value-chain partners?

APPENDIX B

Interview Guide

Interview Guide

Can you tell me about when you started using locally raised grass-fed beef? Influences, reasons, goals?

How was/is your experience?

What do you think of your local grass-fed beef use? (is it working/not working? Why purchase local grass-fed beef?)

Does _____ have core values-listed in your business plan? What role do your core values play?

How would you describe customer demand for this product?

Customer reaction to your selling of this product?

Thinking about your use of local grass-fed beef, what is working? (Relationships, sourcing, selling, etc).

Was it always successful?

Conversely, what isn't working – what are the biggest hurdles to selling local grass-fed beef?

How do you think these can be overcome?

What do you see as the biggest barrier regionally (not just things you have experienced) to a successful local grass-fed beef market?

What do you think is most successful about the local grass-fed beef movement in this region?

If you were to advise other (distributors, processors, restaurants, retailers) beginning to use local grass-fed beef, what advice would you give them?

Is there any kind of outside support you would want for your business in dealing with local grass-fed beef?

APPENDIX C

Codebook Sample

Table 13: *Codebook*

RQ1 What values permeate the local grass-fed beef value-chain				
Theme	Code	Definition	Rule for applying code	Example of when to Apply Code
Decentralization of Food System	Decentralize	Value-chain participants want to grow regional food systems to aid in decentralizing the national food system and to establish a food secure Michigan	Apply to data referring to value-chain participants desire to create a more resilient MI food system that is self-reliant and insulted from national food crises.	-a distributor wants to strengthen the Michigan food system while decreasing dependence on the national food system
Growing MI Ag economy	Economy	Value-chain participants are motivated to help improve Michigan's agricultural scene and economy in order to support MI farmers and grow the MI economy	Apply to data referring to value-chain participants valuing the impact of local food can have in improving the MI economy.	-desire to be an incubator for local food -desire to support struggling MI farmers
Education	Ed	Value-chain participants value the opportunity to educate consumers/customers about the food they eat and agriculture	Apply to data that references a participants desire to educate their customers, the actual practice of educating their customers, and claims that food or agricultural education is an important feature of their business.	-a retailer values the ability to educate customers about the food they eat
Financial Sustainability	Finance	Value-chain participants value their business's economic stability and consider this when making purchasing decisions, making sure the cost is not more than the benefits	Apply to data referring to value-chain participants making purchasing decisions based on price, comparing the economic value of the product they are buying - is the quality worth the price?	-comparing the quality they get for the price
Relationships	Relationship	Value-chain participants are motivated to source local and grass-fed due to previous relationships and/or find value in particular relationships	Apply to data which talks about value-chain participants drive to participate in the market due to some prior relationships of importance and their general valuing of relationships such as their desire to maintain good relationships with customer, which can lead to repeat customers	-started sourcing g-f because one of their customers couldn't risk doing themselves -having a connection with a distributor -being friends with farmers -being a trusted source for consumers

APPENDIX D

Summary Statement Sample

RQ1: What values permeate the local grass-fed beef value-chain

DECENTRALIZE: Value-chain participants want to grow regional food systems to aid in decentralizing the national food system and to establish a food secure Michigan

D1 (and his distribution company) wants Michigan to have a self-sustaining and resilient food system that is not dependent on the national, centralized food economy and production system. This gives D1 a different perspective on processor inconsistencies – they are trying to get away from the mass-produced identical products.

II , Strength – strong (clearly impt part of their business philosophy)

ECONOMY: Value-chain participants are motivated to help improve Michigan's agricultural scene and economy in order to support MI farmers and grow the MI economy

D1 (and company) want to support and regrow mid-sized farming agricultural base in MI and wants MI grown food to be available for consumption by MI consumers. 20% by 2020

IIII, Strength – very strong (focus on growing that farming community – more focused on the supporting the ag and farmers than the economy in general)

~~EDUCATION: Value-chain participants value the opportunity to educate consumers/customers about the food they eat and agriculture~~

FINANCE: Value-chain participants value their business's economic stability and consider this when making purchasing decisions, making sure the cost is not more than the benefits

D1 notes that while they want to pay the best rates they can while still making enough to survive as a business.

I, Strength, somewhat weak (only mentioned once – basically must make enough to stay afloat)

RELATIONSHIPS: Value-chain participants are motivated to source local and grass-fed due to previous relationships and/or find value in particular relationships

D1 (and company) started sourcing local grass-fed because their customers had been asking for the product. They were particularly driven by their relationships with co-ops who wanted to have the product but could not handle the risk of dealing with local meat (storage and other logistics).

II, Strength, strong (values their relationships with their customers and started sourcing to support them).

~~FARM: Value-chain participants inherently value farmers/farming.~~

~~COMMUNITY: Buying local helps to create a unified community~~

PRODUCT: Value-chain participants value particular characteristics about the grass-fed or local food product.

D1values values animal welfare (ensuring a high quality of life for the animals), the human health benefits of grass-fed (vs. conventional) products, and the higher quality of local (MI) sourced food products.

II, Strength good (these don't seem to be his main motivator for sourcing the product – more so the ECONOMY code, but he still finds value here)

APPENDIX E

Visual display

strong **Ok** **weak**

RQ1: What values permeate the local grass-fed beef value-chain

Table 14: *Visual Display*

	Distributor		Processor		Restaurant		Retail	
DECENTRALIZE: Value-chain participants want to grow regional food systems to aid in decentralizing the national food system and to establish a food secure Michigan	D1, 2: Mission is to build a self-sustaining, resilient, and socially just food system. They want to increase the ability to provide food within the state and decrease dependence on the national food system.	2	P1: values developing sustainable food system in region	1			RT5, wants to there to be food within the state for people to eat	1
ECONOMY - Value-chain participants are motivated to help improve Michigan's agricultural scene and economy in order to support MI farmers and grow the MI economy	D1, 2: Support growth of MI agricultural system /productivity by supporting MI mid-sized farmers; 20% by 2020	3	P1: wants to rebuild local food infrastructure	1	Buying a local or MI food product helps money stay in the local or MI economy and supports local farmers and the development of a MI ag system RS1, 2, 3, 4, 7, 9, 11	9	RT5, buying local supports the development of MI agriculture	2

Table 14 (cont'd)

					Many restaurants value being able to educate their customers about the value of their food products (local or grass-fed) and many want to do more education with their customers and the public. (Rt3,4,9,10,11,12) (in some cases education seems more a method to explain prices or different flavor of grass-fed)	15	Values the opportunity to educate consumers about the food products they eat and what food products are available. (staff ed, newsletters, demonstrations, outreach, informational signage) (RT2,3,5)	1 1
FINANCE - Value-chain participants value their business's economic stability and consider this when making purchasing decisions, making sure the cost is not more than the benefits	D: Must make enough to maintain business. D3, 4: Recognize the financial value of the grass-fed beef product (market potential)	1 2	Desire to financial sustainability: Everyone has to make money for the value-chain to work (P2); Market opening for organic and grass-fed (P3)	2	Product must be affordable to them and/or ownership (value must be worth extra cost) RS1,2,5 Many will do as much local as possible within their price range RS1,2,5 Some choose between grass-fed products based on most reasonable price (RS12	8	Financial sustainability is at the forefront for some retailers. Everyone in value-chain must make money to succeed (RT1), it is necessary to make money to be financially sustainable and to compete (RT4)	6
RELATIONSHIPS - Value-chain participants are	D1: Decision to start sourcing local grass-fed beef was	2	Important to maintain good relationships with	6	Many restaurants value their customers in general and wanting to provide	20	Strongly value relationships with *customers*, staff,	2 2

Table 14 (cont'd)

motivated to source local and grass-fed due to previous relationships and/or find value in particular relationships	strongly influenced by their relationship with their retailers and their request for help souring the product		customers, community, and employees.		them with a good quality product (RS1,5,6) Some source local(in general, some specifically grass-fed) because they know farmers and the area and wants to support them and value buying from a real person (RS2,5,6,12) Many value their relationship with their grass-fed beef farmer (RS5,7,10) and their distributor (who encouraged them to source the product) (RS11)		community, and the farmers they work with. Want to source products their customers want and fulfill expectations in terms of quality and production practices.	
	D3: values the relationship with main retail buyer and processor. Simply enjoys working with them.	2						
FARM - Value-chain participants inherently value farmers/farming.	D2: Important to have a positive impact on their farmer partners.	1	P3 is a farmer	x	Restaurants value farms and the work that famers do. Values their pride in their work (RS1,11), the beauty of their famers farm (RS5), family owned nature of small farms (RS9), is thankful and respectful of farmers work and devotion to growing foodRS10,12). Business model built on the value of farms and farming – RS3	13	Must support farms for them to exist (RT5)	1
	D3, 4: They are farmers	x						

Table 14 (cont'd)

COMMUNITY - Buying local helps to create a unified community					Buying local gives back to the community and builds a stronger community (RS2, 8) Wants to buy from people in his community rather than elsewhere (RS7)	3	Buying local and promoting local farm builds and connects people around an agricultural community (RT3)	1
PRODUCT - Value-chain participants value particular characteristics about the grass-fed or local food product.	D1, 2:Animal welfare, human health benefits (including GMO free), higher quality of local products D3, 4: health (D3, organic) D4: animal welfare (diet, confinement)	2 3	Recognizes potential health benefits (higher omegas) (P1, P3), high quality product (P2, P3)	3	Flavor, freshness, quality of local and grass-fed (all) Health benefits (non-GMO, antibiotics, healthier animal eating healthier natural food, less fat, omega 3, hormone free) RS1, RS2, 4, 5, 7, 8, 9, 10, 11, 12 Animal welfare RS1, RS2, 4, 6, 8, 9, 11, 12 Environmental stewardship (grass-fed)/carbon footprint (local) RS3, 6, 11 Source traceability RS3, rs6, 11 all value local	50	Values high quality (RT1, 2, 3,4) fresh, flavorful, humane animal treatment (RT2), local or MI raised (RT2,3,4, 6), organic (RT3,4) , non-GMO, health (leaner, higher omega content, more nutrients) (RT3, 4, 5, 6), environmental stewardship (RT2, 3, 5)	20
SOCIAL EMBEDDEDNESS - Value-chain participants' sourcing decisions are	D1, 2: Although it is important to be financially sustainable, profit is not the goal. Their ability to pay	1			Better for farmers and community to pay more (plus get high quality in return) RS2 Values high quality product that aligns with	11		

Table 14 (cont'd)

influenced by non-economic decisions particularly relating to social connections	farmers fair prices and improve sustainability of MI agricultural system is most important				values and supporting farmers over making max profit RS4, RS5, RS10, RS11, RS12			
INTEGRITY - Value-chain sourcing decisions and general operations are tied tightly to participant's moral principles.	D1, 2: Sourcing decisions are motivated by their desire to help develop a resilient - MI food system and make good food available to all; greatly dislike the fact that they occasionally have to source from the "friendly neighborhood CAFO".	2	Social responsibility: Important to be a responsible business member in their community (handling waste water and rendering material) (P2)	1	Doesn't charge as much to protect customer RS1 Moral obligation to support local farmers, buy products with high animal welfare standards and products raised in socially and environmentally sustainable ways (RS2,5,8,11,12) Wants customer to eat food he feels good about and that they would eat themselves RS4,9, 10 Feeds hungry people for whatever they can pay RS4 Use whole animal out of respect for farmer and animal RS10)	20	Driven by their integrity in how they conduct business and source products. Want to be a responsible business member (RT1); customers depend on them for sourcing high quality products that align with their values – so must be diligent in sourcing those products – maintain integrity (RT3,6); wants to sell products they would eat themselves (RT5);	7
	D3, 4: part of decision to raise grass-fed is because of (D4) the belief that it is healthier for the animal and wrong to raise them live unnatural lifestyles	1						

Table 14 (cont'd)

	and (D3) this own health problems – desire to have organic available.								
RQ2 What is the nature of the value-chain relationships?									
LONG-TERM - Participants are committed to their value-chain partners for the long run	D1, 2: Want to maintain long-term relationships with customers – the motivation to start sourcing the product; makes things right when orders go wrong	2	Long-term customer relationships are important: Desire to maintain good relationship with customers (repeat customers) (P1) and evidence of long-term support by distributor customers (P3)	4	Restaurants are loyal to their farmers and distributors (RS2, 5, 7, 8, 10, 11) Wont source from others unless they sell their farmers product or product is unavailable through their farmer RS5, 7	9	Committed to the farmers they currently source from – their go to for sourcing (RT3,5	3
	D3: relationship with main retail has been long term and committed – 1 year, takes meat anytime an animal is ready	1						
SHORT-TERM - Participants have encountered partners that make relationship commitments they cannot keep	D3: One retailer made false promises about sourcing his product	2			RS1 was using the product but had to stop sourcing it when it got too expensive RS8 would change producers if he could find another dependable high quality producer (not 100% satisfied with producer relationship)	3	Their farmer distributor went out of business out of nowhere, leaving them with no local grass-fed beef farmer (RT6)	3

Table 14 (cont'd)

FLEXIBITLIY (+,-) - Willingness or unwillingness of partners to adjust to changing conditions, and adapt to needs of their partners	D1, 2: (-) Chefs and processors can be inflexible (chefs, adapting to frozen, stop buying due to price increases or incontinent cuts) (processors modernizing their business operations/adjusting to buyer demands) (+) customers flexible (adjust to frozen, price increases, inconsistent cuts) and D1/2 flexible when processors produce inconsistent cuts (figure out what to do w product)	5	Processors must be flexible in business relationships although some partners are not: (+) Must be flexible in dealing with their customer needs/demands (use customers boxes/coordinate, willing to offer unusual cuts) and their USDA inspector. (-) Some customers are not flexible/unwilling to adjust to processors storage capacity.	5	(+)Restaurants must be flexible when buying locally source grass-fed beef. Additionally, they have good relationships with their farmers and distributors who are flexible in meeting their needs (-)some farmers and processors are not as flexible as restaurants would like them to be in terms of services offered. (+)Flexible with price up until a cut off point (RS1); RS2, 7 flexible in dealing with poorly cut meat or wrong product; Flexible when products run out by substituting (RS4) or changing menu (RS12); Producer flexible when restaurant stops sourcing due to price (RS7); Distributor flexible in accommodating (RS2, 7, 9) (-)Farmer not as flexible as they think he should be in terms of keeping prices	19	Retailers must be flexible in dealing with farmers who often do not have the best business practices – also business partners can be flexible in trying to meet retailer's needs. Flexible in processing orders to accommodate farmers abilities (wait list) (RT2); flexible in dealing with farmers inconsistent schedules, deliveries and communication (RT2,3); distributor	5
	D3, 4: (+) customers flexible (buy more product, adjust to product mistakes and	4						

Table 14 (cont'd)

	inconsistent supply) (-) potential customers will not adjust to make product work for them (cost)				reasonable (RS8) and communicating(RS10) Processor not flexible in terms of cutting like they ask or what they ask for(RS 8, 10)		flexible in trying to find desired products (RT5)	
CONTRADICTIONS - Value-chain partners do not share an understanding of particular interactions or aspects of their relationships with one another	D1, 2: profit not major goal; thinks organic producer is not 100% grass-fed D3: different understanding of what happened when retailer that stopped selling product as well as the fairness of their product prices: thinks one processor doesn't care about grass-fed		P2: distributor/producer claims they do not value grass-fed when they claim they do esp potential for high quality. P3: claim they feed 100% grass, contradictor to others (D2, RS2)		RS1 remembers the source of grass-fed being from a certain farm distributed by the regional distributor – whereas the regional distributor never used that farm. RS2 thinks their organic product is not grass-fed RS8 wants meat to be aged longer, whereas P1 thinks it won't necessarily improve quality		RT2 – confident that processors know NAMP standards (compared with D1); RT3 claims they have very low mark-up on local grass-fed products (compared with D3, RT4 and comments of other about their high price); RT5 describes distributors prices as volatile whereas they claim to try to	

Table 14 (cont'd)

							keep prices as reasonable as possible; RT6 thinks organic producer is not 100% grass-fed	
VALUE-CHAIN INVOLVEMENT - Value-chain partners describe their role in (or absence from) the "value-chain"	D1,2: academic term – haven't heard before but aligns with what they stand for D4: Current relationships with customers value-chain – difficult establishing value-chain relationships with potential customers who don't recognize value of product		Processors do not think they are much of a link in the value-chain. Simply offer a service with fixed costs. Do not use that term to describe their business (P1,2)		Many have not heard value-chain terminology but think their business fits in with the description (RS2,5,11,12)	4	RT3 – haven't heard term before but connect the dots – fits with their business operations	1
TRUST (+,-) – Trust is an integral aspect of value-chain relationships is present in some value-chain relationships, but not others	D1,2: (-) some level of distrust with processor due to their inconsistencies; (+) Building relationships and "relationship repair" essential to	3	Processors work to build and maintain trust with customers: Build trust by allowing customers to be part of the process (P1) and by	1	(+)High level of trust between restaurants and their farmers/distributorsRS2,5, 7, 8 10, 11 Developed by learning each other's scheudles (RS5) Giving heads up about price increases (RS8), being	1 4	(+)Very important to have trust between partners when sourcing proteins; trust their farmers are raising	1 3

Table 14 (cont'd)

	maintaining customers trust.		maintaining communicative and honest relationships (P2)		honest about production methods (RS8, 10) and because their values align (RS11) Customers trust the chef to provide good high quality product (RS6) (-)Do not trust that farmer will be dependable in delivering right product; don't totally trust distributors – price incentives RS8		animals humanely and according to the retailers expected standards; more trust between retailer and farmer than retailer and distributor (RT3) ; due to some negative interactions do not trust distributor as much (RT6)	
	D3, 4: (D3) (-) doesn't trust retailer that broke commitment. (+) Trust current buyers (no contract, not paid right away) (D4) (+) consistency and communication builds trust with customers	3						
PRICE EQUITY (+,-) - Price equity is either present or not present in value-chain relationships. When present, effort is made to ensure that all value-chain partners are receiving a fair	D1, 2: (+) paying farmers a fair price/living wage is important to their business; important to make good food available to "non-foodies"	3	Price Equity is important to processors: Must charge extra for more difficult cuts in order to maintain financial sustainability (P2); believes they	4	(-)Price too high – couldn't charge customers an outrageous cost (RS1); producer seems to unfairly raise prices since his costs are not increasing (RS8) (+)Make sure to pay farmers well/fairly (good	13	(+)Retailers feel as though they charge the most reasonable price possible for their products and it is important to	15

Table 14 (cont'd)

price for the product. When absent, value-chain partners do not consider the monetary needs of their partners or assume parts of the grass-fed beef market in the region are pricing unfairly.	D3, 4: D3, (-) retailer that dropped him wasn't paying fair price for whole carcass or charging fair price for consumers; D4, (+) pays farms he buys from fair price, he makes best price by selling direct (rather than through distributor)	3	charge very reasonable price for their product and shouldn't charge a lot just because there is demand (P3)		return on investment) (RS2, 10, 11) (RS8 pays what he sees as high prices-doesn't haggle) Believes the prices they charge are reasonable/fair - some make accommodations to make sure their price is affordable (RS4, 5, 12)		them to pay the farmer fairly (all); marks up local beef less so it can stay affordable (cap on ground price) (RT3);others in value-chain are not seen as being price equitable (charging too much – other retailers, distributor/their farmers) (RT2, RT4, RT5, RT6)	
TRANSPARENCY (+,-) – Transparency about business practices within value-chain relationships and throughout the market is either present or not present.	D1,2: (-) lack of transparency with organic farm about their production practices; potential lack of transparency about farms by not putting whole name on invoice;	3	Are transparent with their customers and their USDA inspectors: Customers can be part of the processing process (P1); labels must adhere to USDA	4	(-)Producers not always transparent about where they get product (RS8 suspects that his farmer is aggregating but doesn't know for Sure) (RS12 doesn't realize that the farm she sources from finishes with GMO free grain)	5	(-)Question whether farms are really producing grass-fed (are they telling the whole story about their production practices?)	15

Table 14 (cont'd)

	(+) attempts to be transparent by providing customer w info about farm practices		regs; must maintain good relationship with USDA which requires transparency		(-)Worry that farmers are not transparent about sourcing practices (not 100% grass-fed) (RS2). (+)While some farmers are transparent about all of their production practices (RS8, 10)		(RT2, 5); are transparent about the production practices used to raise product to customers (RT3) and their farmers seem transparent about t heir practices (RT4,5); word grass-fed in general causes transparency and confusion(RT4); potential that distributor is not transparent about price increases (RT5) or availability or product (RT6)	
	D3,4: (-) D3 – due to contradiction, lack of transparency between him and retailer that dropped him; (+) D4 tours people around his farm, transparent about production practices, and the potential price increases	3						
COMMUNICATION (+,-) – The presence or absence of open	D1,2: (+) use communication to deal with value-	10	(+) use communication to navigate potential	6	(+)Restaurants use communication to work through problems and to	31	Important to communicate with	14

Table 14 (cont'd)

communication between value-chain partners and the effect on value-chain relationships	chain problems and to plan with producer/processor (-) communication with processor does not typically result in desired changes/fixes; not always good internal communication between buyer and reps; processor does not communicate when changes to order are mead; doesn't adequately communicate ability to do farm tours w customers		problems (hang time expectations, poor quality product, unsatisfied customers)		maintain strong relationships with farmers, distributors, and customers)(RS2, 3, 5,7, 8, 9, 11) Some farmers/distributors text and email, making ordering easy (RS2, 7, 9, 11); communicates problems which usually solves issues (RS2), worked out scheduling and delivery through communication (RS5); Communicate source of products to customers (RS3) (-)Communication does not always solve problems and does not always occur RS1 – communication about price didn't result in price change; RS6 doesn't communicate problems with orders to distributor due to lack of time; Sometimes difficult to communicate with distributor (they go out of town, holidays(RS7);		consumers and suppliers to keep business flowing – seems to be working (+) communicates about product to staff; communicate to producers production practice expectations; communicate to consumers when product runs out; communicate problems to value-chain partner; (-) lack of communicatio n between grass-fed beef producer that shut down business (RT6) and between them and their	
	D3,4: (+) communication with customers about ordering/product availability good: communication builds trust; (-) communication with past processor	7						

Table 14 (cont'd)

	didn't result in changes; trying to communication with regional distributor but no response				Potential lack of communication with distributor about production practices of farmer (RS12); Assumption that producer doesn't communicate restaurant complaints to processor (RS8); RS10 doesn't want to communicate problems with processing because he has relationships with this processors; Farmers could communicate better RS10		distributor about product supply (RT6)	
FACILITATION – A value-chain partner plays a facilitating role in some aspect of the supply chain, making it easier to get the product from producer to consume	D1,2: their job is to facilitate moving the product through the supply chain: coordinating w producer, deal w processor, scheduling, delivery, connecting consumers to farms).	4			The regional distributor does a great job at facilitating the supply chain process (RS1, RS2, RS4, 9, 10, 11, 12 as does one farm (RS5). RS6 believes her distributor does not do a good job facilitating a connection between a farmer that will meet her needs.	2 4	Sometimes retailers must facilitate the process of getting the product; RT2 takes special orders, communicates desired cuts to producer, coordinates cuts with processor; RT3 plans with producers and processors a	
	D4 facilitates value-chain by aggregating, coordinating	4						

Table 14 (cont'd)

	processing, fills orders, delivers						year in advance – coordinate all aspects when buying directly from farmer (vs. distributor)	
SUPPORT – Participants offer support to their value-chain partners in order to help them succeed/the relationship is reciprocal – I help you, you help me	D1,2: started sourcing product to help their customer – win win	2	Teachers customers about processing and educates them about the cuts (P1); distributor has offered to help them in any way to keep them open (P3)	2	Restaurants try to support their value-chain partners in order to help their business (and their own business) RS2, 3, 5, 7, 10, 11 Overpay staff; distributor fixes any problem with order (RS2); processor will do whatever they ask for		Some retailers realize that their business will be better served if they help their partners; RT2 coordinates with the processor; RT3	8

Table 14 (cont'd)

	D3,4: supportive value-chain partnerships – processor coordinates with retailer about cuts; will discount product for retailer if they buy more; new retailer many innovative ideas to help; buyer that will buy excess product	5			(RS3); has helped grow distributor who they depend on for local products (RS3); puts farm name on menu to generate business for them (RS5); takes extra product from farmer or distributor if they can (RS7, 11); buys whole animal from farmers (RS10).		helps farmers attain desired certifications; RT4 has many ideas for his new grass-fed beef farmer including how to get rid of unwanted product and to move slow products; RT5 helps out farmer buy ordering in larger amounts so he doesn't have to go to the processor as much.	
RQ3 What are perceived barriers?								
MARKET – Price, inconsistencies between supply and demand, and level of consumer demand are barriers to market growth	D1,2: not enough supply to meet demand + seasonal supply inconsistencies (summer lack of supply, fall surplus	10	Demand for certain cuts does not equal supply (devalues carcass and puts farmers in bad place; unable to keep up	7	price can be/is too high (RS1, 2, 4, 5, 6, 7, 8, 9, 12) (doesn't always stop them – usually a cut-off or have to choose less expensive cuts)	40	Some retailers experience a lack of consumer demand (RT1,2) and often times retailers have trouble getting	26

Table 14 (cont'd)

	of meat) disparity between cut demand and what's available on animal (^ground and primals = devalue animal); price too high or some customers		with demand – lack of supply and producers (P3)		not enough supply of desired cuts/products run out/ or ability to get desired specialty cuts (including lunch meats) (RS1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12) not enough marketing by farmers (RS2) not enough consumer demand (RS2, 3, 10) (otherwise they may spend the extra to source) Cannot find a farmer (or enough farmers) nearby to fulfill needs of them/market (RS2, 5, 6, 8, 9, 12)		the needed supply (RT2,3,5,6) ; retailers typically buy primals and ground (not using rest of animal); Sometimes prices are too high (all); In other cases, their retail market is saturated (RT3 – too many producers want to sell there).	
	D3,4: high demand for ground and primals leaves a lot of the animal; lack of consumer demand; occasionally runs out of certain cuts	8						
TRENDS – The trendiness of the "grass-fed" brand may encourage customers to buy for the name, rather than for the quality or value of the product					Many chefs assume that customers see the word or claim "grass-fed" as a marketing claim and will order in order to be trendy, showy, or because they assume it is the highest quality product. Restaurants would rather have customers eat the product without preconceived notions of what the product is, and appreciate the value and	11		

Table 14 (cont'd)

					quality of the product rather than just buy to fit the trend. (RS1,2,5,8). Additionally, many compare the word grass-fed to Kobe, Angus, and organic, words that were buzz words that have lost their meaning due to overuse and what they see as inadequate monitoring of the use of the worlds – worry this will happen with grass-fed. Additionally, one restaurant does not what to advertise his beef as organic because he doesn't want to seem pretentious (RS4)			
LOGISTICS – The logistics of moving the product through the supply chain and the time it takes to carry out related tasks is a challenge.	D1,2 planning meat distribution is complicated and takes a lot of time to plan	1	Distribution needs to become more convenient for the market to grow (P1); difficulty carrying out coordination with their distributor customer (timely pickup of goods, having enough	3	Using the local grass-fed product can cause logistical issues in terms of ordering, deliveries, storage, ability to get needed cuts, and expense of hauling cattle. Expensive to haul cattle(RS3) Purchasing through small distributor is more time consuming and less	9	The biggest logistical issue retailers deal with is sourcing from farmers who are not always the best at communicating or catering to the needs of the retailers	12
	D3,4: distribution of own product takes a lot of time; farming, marketing, keeping books, scheduling ,	6						

Table 14 (cont'd)

	driving (not time to do everything well); cannot fulfill some restaurants' scheduling demand in terms of frequency		boxes on hand (P2)		convenient than national distributor/cuts come in inconvenient size (RS6) Local farmers do not believe enough and/or are not dependable in terms of when they will deliver (RS7, RS8) Difficult to create local lunch meat cuts (RS10) Difficult to have storage, (RS6,10)		(delivering on time, communicating). Additionally, it is quite time consuming to deal with multiple suppliers (RT2,3,4), and some retailers (RT4) are so busy they don't have time to devote to working with new farmers.	
STRUCTURE – There are system-wide structural or systematic barriers to growing the grass-fed market, particularly in terms of access to capital, space, and manpower.	D1, 2: small meat processing has all but disappeared +decentralization of small meat processing = inconsistencies; assumption farmers are burdened by expense of raising cattle	3	Conventional market has destroyed infrastructure necessary to carry out local market (P1); lack of storage to age (P1); cannot expand easily (P2 processing, P3, farm); lack of capital for budding	11	High price of land (farmers) (RS1, 12), large amount of space required /lack of pasture (RS 1, 3, 4) Unable to get beef aged as long as he wants (may be due to processing capacity) (RS8) Lack of processing facility barrier to market expansion (RS3, 5,7)	11	Many retailers recognize the lack of a processing facility in the area as a major barrier to the market. (Rt3,4,6) (RT3 says the one big processor is like a monolopy - not enough competition)	5

Table 14 (cont'd)

			producers; not enough USDA plants in state					
DISHONESTY – There is a perceived lack of transparency and honesty of competitors	D3 believes competitors are not honestly marketing product – not transparent about their production practices.	2			Doesn't trust labeling is truthful in market, esp when it comes to trendy names – think people use more for marketing (RS2, 10); - worried might happen with grass-fed Some restaurants in neighborhood falsely advertise their use of local ingredients (RS8)	4	The term grass-fed can be misleading (pelletized grass) – RT4	1
PROCESSOR – Processing local and grass-fed beef products poses additional challenges/work for processors			Customer want carcass dry aged too long (less fat cover, not enough space – P1); more manure stuck to grass-fed makes harder to butcher; special orders (value-cuts) take more time; time to have good packaging and presentation for restaurants/retail buyers (P2); cannot find	8				

Table 14 (cont'd)

			someone to take over management + hard to find reliable employees (P3)					
QUALITY – Different farmers produce different quality grass-fed beef. Poor quality product is hard to work with and gives grass-fed a bad name.	D1,2: potential that inconsistent processing is partially due to inconsistent animal quality; some product more lean whereas others higher quality and more focus on grading out	3	Grass-fed is "not created equal". Many producers produce a poor quality product that may give grass-fed a bad name; also may affect customer relationship with processor or people's opinion of the processor's work	8	Grass-fed beef is either very good or very bad (their farmer originally brought them some really low quality product, which he has since corrected) RS8; locals may not be able to afford the product (when they are the only	1		
	D3: some producers do not raise a high quality product, giving grass-fed bad name	2						
GEOGRPHY – The demographic base of certain businesses and the heavy tourist season in some locales makes year round sales of grass-fed beef difficult	D4: business slower in winter due to tourist focused economy	1			Seasonal tourism is a barrier to market growth because there is very high demand in busy season (cannot keep up) and then demand drops considerably in the winter (RS5); locals cannot afford product (so have to stop buying in winter) (RS7)		In certain parts of the region, customers cannot afford the grass-fed product; demographic not well suited for the grass-fed market where the	3

Table 14 (cont'd)

							price point is high. (RT1, RT6)	
RISK – DISTRIBUTOR – Using a regional distributor poses risks and uncertainties for restaurants	D2 recognizes that using a regional distributor is risky for some of their partners	1			Uses term monopoly to describe distributor – although they use them, they think farmers make less when selling through them and distributor doesn't take as good care of the product (RS2); additionally with local distributor, cannot know quality of product or what will be available (RS6)	6		
CONVENTIONAL – The status-quo, conventional market has shifted the infrastructure and consumer expectations of meat products	D1,2: large demand for ground, which devalues carcass; dependence on fresh/quality/flavor of grain; inappropriate regulations for small scale meat; expectation for constant availability of all cuts	6	Conventional has destroyed local food system infrastructure; created demand for only small portion of the animal; unwilling to use frozen; customers used to convenience; large USDA plants not held to same standards in terms of regs	8	Conventional system has destroyed infrastructure for raising proteins (RS3) and has caused restaurants and consumers to have unrealistic expectations: restaurant belief that fresh is higher quality than frozen (RS6); some customers will not like the leanness or flavor of grass-fed (RS3, 10, 11)	6	Some customers are accustomed to the flavor and pricing of conventional (Rt2,3)	2

Table 14 (cont'd)

KNOWLEDGE – Each part of the value-chain lacks important knowledge necessary for a successful grass-fed local beef market	D1,2: lack of consumer understanding of the local protein market; processors/NAMP standards; distributor/sales reps lack of knowledge about cuts, producer practices; uses term "grass-fed, GMO free grain finished" – incorrect????	6	Lack of retail knowledge for breaking down cuts; lack of understanding about dry aging; lack of consumer knowledge about labeling regs;	6	Knoweldge about which farmer they bought from in past (RS1)/doesn't really know farmers practices (RS2, RS6, RS12); Restaurants do not understand Terminology (grass-fed, grass-finished) (RS1, RS8, 9,10, 11,) or that fresh is not better than frozen (RS6); Customers do not understand terminology (grass-fed) or value of local or grass-fed (RS1, RS4, 6); Lack of farmer business/marketing knowledge (RS2, RS10	18	Lack of farmer business savvy and organization (not knowing what to charge; not knowing NAMP standards; how to sell to wholesaler) RT2,4) Customers may not know enough about the product or how to cook it (RT5,6) Finally, the retailer themselves seem to be lacking in knowledge about terminology (calling grain finished "grass-fed grain finish"), understanding grass-finishing, understanding marketing claims and labels; knowing their	17
	D3,4: D3 no understanding of what cuts are good for retail, no marketing or business knowledge; recognized lack of knowledge within the market about what grass-fed means, (D4) and the value of the product	5						

Table 14 (cont'd)

							producers production practices (assuming they are not 100% grass-fed)	
PROCESSOR INCONSISTENT – Processors produce inconsistent products in terms of quality	D1,2 Processor outcomes inconsistent: what different processors call same cuts, how cuts are labeled and packaged, inconsistent cutting; receiving wrong cuts	7			The processed product is not consistent – random knife cuts (RS2), wrong weights (RS7);carry out cutting instructions wrong (RS8); will not provide desired cuts (RS10)	6	The local processors do not produce a quality product – lack of skills (RT4)	2
	D3: one processor had hard chunks in ground	1						
REGULATIONS - Regulations are a barrier to the market since some were made for conventional markets and some are simply time consuming to comply with	Processing regulations are often designed for large scale processors; labeling laws cause problems at processing end that result in inconsistent product labeling	2	Labeling laws are time consuming and complicated and can potentially strain processor relationship with farmers (P1,2); cannot sell certain cuts due to regs; some non-food	7			Organic regulations and similar things do a disservice to producers as they are lax and are confusing the public (RT4)	1

Table 14 (cont'd)

	and cut terminiology		safety regulations are arbitrary and wastes time (P3)					
	D3: getting organic certification requires paperwork he doesn't have time for	1						
Best practices								
STOCK – By taking stock of the market, the product, and their motivations for entering the market, value-chain participants can better position themselves for success	D1,2: before you start distributing, make sure that you have customers that will buy different parts of the animal	1	Educate yourself about the product and quality (good vs. bad)	2	Only buy the grass-fed product if it fits the profile of your customer (RS1); must understand your selling proposition – how will you sell it and to whom (RS3) and why you want to sell (RS10); educate yourself about the product before sourcing (RS6, 9,11)	8	Retailers make sure to know the products they are selling (does research) and knows the farms they are buying from and their practices. (RT2,3)	3
S/D STRATEGIES - Value-chain participants have developed many strategies for managing the inconsistencies in supply and demand of the product	D1,2: encourage retailers to substitute for other products when things ru5n out; freeze product; plan quarterly; have customers that want different cuts; sell larger	6	Expanding herd to produce more; distributors buy whole animal (P3)	2	Only buy when they know they can get all the cuts they need (RS1) Order ahead (RS2) Use odd cuts (RS2) Raise own cattle to ensure supply or buy whole animal (RS3, RS10) Freeze extra (RS3, RS5, RS10)	25	Some retailers manage supply and demand by using special order forms (usually when low demand and low supply) (RT1,2); others plan out their	10

Table 14 (cont'd)

	cuts to restaurants; buy whole animal				Substitute for other cuts/rotating menu/ (RS4, RS8, RS12) Work with producer to share schedules (RS5) Buys from other distributors when product runs out (RS7) Adjust to farmers delivery schedule (RS8) Put things on special, (RS9, RS10, RS11)		entire buying and processing schedule a year in advance and buying whole aniamls (Rt3), while others buy from a producer that aggregates product (rt5). Finally some retailers substitute products when they cannot get their usual and buy in large quantities and store frozen (RT5,5)	
	D3, 4: (D3) sell product for less to encourage retailer to buy more; (D4) aggregate product from other producers; encourages advanced ordering; plans based on selling history; uses multiple processors; buyer who will take excess product	8						
DIFFERENTIATE - Value-chain participants use different strategies for distinguishing their product from other products	D1,2: list where products come from and production practices in sales literature; reps communicate this as well; code to farm on invoices; farm tours	5			Educate servers (RS1, RS6, RS8, RS9) List name of farm and how product was raised on menu (RS2, RS3, RS5, RS7, RS9, RS11 (source and if room grass-fed) List of farms on wall (RS8, 12)	50	Some retailers differentiate their product by using ads, posting the farmers brochures and other information about the product; list information	18

Table 14 (cont'd)

	D3,4 (D3) brochure that describes product; (D4) tells customers story of farm, does farm tours	3			See entire production system outside (RS3) Word of mouth (RS3, RS4) Poster of a local food affiliation (RS4) Advertise in local food mag (RS6) Uses the name of the cut to sell odd cuts (tongue) RS10) Feature on special, RS11) Seems like a lot of time differentiation is done to justify extra cost/price		about the farms on their website; have demonstrations. Rt1,2,3,4,5	
PARTNERS - Value-chain partners benefit when working with partners that align with their values and/or which best can meet their needs	D1,2: partners that take different cuts; seek out partners that sell local products	2	Important to maintain good relationship with USDA inspectors (P2,3) has 3 reliable distributor customers (P3)	5	Most restaurants have found partners that they are happy with and that suit their needs. Most farmers are happy with their value-chain partners (farmer/distributor/processor) RS1, RS2, RS3, Rs4, RS5,R s7, RS9, RS10, Rs11 , RS12 Suggests getting to know farmer and developing relationship (Rs8)	22	Some retailers work hard to make sure they find farmers that meet their needs (farmer surveys, farm visits, ensuring direct access to product) (RT3,5); additionally sourcing from a distributor makes sourcing easy (RT3)	
	D3,4: retail customers and processors good partner that are helpful; understanding partners (when things go wrong); customer that takes excess product	3						

Table 14 (cont'd)

VERTICAL - Some value-chain participants have found that playing multiple roles within the value-chain benefits their business	D3, 4 are producers and distributors. Strategy for selling product. D4 aggregates to have more product available.	3	P2 is processor/retailer (hasn't helped with grass-fed sales); P3 is producer/processor and had to processor to keep organic certification	2	RS3 is a multifaceted business that raises food and also serves it at a restaurant and as an event venue. This helps with marketing and providing consistent supply of product		RT1 is a processor and retailer (but doesn't retail much grass-fed)	
PRICING - Value-chain participants must use smart pricing strategies in order to maintain financial sustainability selling a local grass-fed product	D1,2: have to price things in order to make sure they make money since ground is a majority of product sales; use cost calculator to communicate cost differences between their product and conventional	2	Charge more for difficult cuts (P2); market based pricing (P3)	2	Restaurants try to keep prices affordable for consumers and don't mark up the product as much (RS4, RS5, RS12) and sometimes have to raise prices on other items to make up for it (RS12) Buying directly from farmer is cheaper (S8) Buy whole animal (RS10)	6	Retailers must use strategies to keep the product affordable: lower markup on local/MI grass-fed (Rt3,4) and working with the farmer is less expensive (rt5); cap on ground (RT3)	5
	D4, market based pricing	1						

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