

EVALUATING THE LOCAL FOOD SYSTEM OF MANHATTAN, KANSAS:
PRODUCER AND INSTITUTION PERSPECTIVES

by

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Abstract

Agriculture is a driving industry for most areas of the United States, and the Great Plains region is no exception. In the state of Kansas, agriculture is the primary industry capturing a spot in the USDA 2012 Census of Agriculture's Top 10 states for total agricultural sales, total crop sales, and total livestock sales (USDA, 2012). Despite the thriving agricultural industry, little research has been completed on the food systems supporting Kansas communities. What are the characteristics of a local food system within the fabric of an agriculturally rich state? The goal of this study was to evaluate the characteristics and perceptions of the local food system supporting Manhattan, Kansas – a metropolitan area located in North Central Kansas. Specifically, we wanted to understand producer barriers to expanding beyond direct markets into institutional markets such as school dining services, grocery stores, and hospital food services. The objectives were to 1) understand producer concerns for selling to institutions, 2) identify resources producers need to access institutional markets, 3) understand institutional preferences for local purchasing, and 4) understand producer and institution definitions of “local” food. In February 2013, a survey was mailed to 162 Kansas producers identified within a 150 mile distance of Manhattan, Kansas. The response rate was 63% and descriptive statistics were completed. Interviews were completed with eleven local institutions in March/April 2013. Common themes were qualitatively assessed. In general, farms were small-scale, producing a diversity of products, and utilizing direct-to-consumer markets while selling to institutions on a limited basis. Producer concerns for selling to institutions included low prices, small production quantities, and delivery costs. Institution concerns included product quantities, quality, and seasonality, quality of communication, and food safety. There was no consensus on a definition for “local” food systems. Opportunities for developing the local food system of Manhattan, Kansas include increasing seasonal production, increasing producer access to resources, and fostering relationships between local producers and institutions.

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Dedication

“Why do farmers farm, given their economic adversities on top of the many frustrations and difficulties normal to farming? And always the answer is: “Love. They must do it for love.” Farmers farm for the love of farming. They love to watch and nurture the growth of plants. They love to live in the presence of animals. They love to work outdoors. They love the weather, maybe even when it is making them miserable. They love to live where they work and to work where they live. If the scale of their farming is small enough, they like to work in the company of their children and with the help of their children. They love the measure of independence that farm life can still provide. I have an idea that a lot of farmers have gone to a lot of trouble merely to be self-employed to live at least a part of their lives without a boss.”

— Wendell Berry, Bringing it to the Table: Writings on Farming and Food

I would like to dedicate this thesis to all farmers – big and small – whose everyday sacrifices and grounded wisdoms are worth more words than this thesis contains. I would especially like to dedicate this to my favorite farmers, my uncles Nick and John Wittman – you fellas are always “outstanding” in your field. Cheers!

Chapter 1 - Introduction

There are many different ways to approach food systems research. A food system at its most basic level includes producers, processors, distributors, consumers, and food waste management (Robles, 2013). How does this cycle appear on a small or localized scale? What exactly is meant by a “local” food system? This thesis approaches these questions through the context of Manhattan, Kansas, a population center in North Central Kansas. The goal of this thesis research was to evaluate and describe the current status of Manhattan’s local food system, paying particular attention to the perceptions of Kansas producers and institutional consumers in Manhattan, i.e. grocery stores, hospitals, and school dining services.

Research Objectives

There were four main objectives to this research:

- 1) Understand both producer and institution perceptions of local food and how they approach defining “local” food and/or “local food systems”
- 2) Identify producer concerns for selling to institutions
- 3) Identify resources lacking for producers to access institutional markets
- 4) Understand the purchasing protocols of local institutions and their preferences in local purchasing

These objectives were achieved through a survey mailed to Kansas producers identified as being located with a 150 mile driving distance from Manhattan, and personal interviews with purchasing managers or produce managers of Manhattan institutions.

Thesis Outline

This thesis is organized into five chapters. Chapter 2 is a review of the literature regarding local food systems definitions and research. Chapter 3 and Chapter 4 are presented in publication format to be submitted to the *Journal of Agriculture, Food Systems, and Community Development*. Chapter 3 presents findings related to producer and institution perceptions and definitions of local food systems (Objective #1). Chapter 4 presents findings related to producer and institutional concerns for direct-to-institution marketing within Manhattan’s food system (Objective #2-4). Chapter 5 further details producer demographics and farm characteristics of the producers within the survey area – data that may not have been used within Chapters 3 or 4

but was important to include to fully describe producers within Manhattan's food system. Finally, Chapter 6 provides overall conclusions to this thesis research and gives some suggestions to further research the food system of Manhattan, Kansas.

Chapter 2 - Review of the Literature

The Meaning of a “Local” Food System

A food system at its most basic level includes the movement of food through production, processing, distribution, consumption and finally any resulting waste (Robles, 2013). Is a local food system defined differently? Generally speaking, the farmer plays the role of producer, processor, marketer, and distributor in a local food system, with the majority of these farmers being economically small (<\$50,000) and located in or close to metropolitan counties (Martinez et al., 2010). Often times a local food system is defined based on the ideal that it is the counterpoint to a global food system (Hinrichs, 2003; Kloppenburg, Hendrickson, & Stevenson, 1996). Kloppenburg et al. (1996) summarize this viewpoint by ascertaining that “...self-reliant, locally or regionally based food systems comprised of diversified farms using sustainable practices to supply fresher, more nutritious foodstuffs to small-scale processors and consumers to whom producers are linked by the bonds of community as well as economy. The landscape is understood as part of that community and, as such, human activity is shaped to conform to knowledge and experience of what the natural characteristics of that place do or do not permit” (p. 34). Despite such references to community, economy, and environment, it remains that the term “local” has no generally accepted definition (Martinez et al., 2010).

Though there is no consensus on a definition of a local food, it is becoming increasingly clear that ways of defining local are connected to underlying values such as protecting the environment or maintaining a sense of place and relationship to a farmer (Campbell, Carlisle-Cummins, & Feenstra, 2013; Kloppenburg et al., 1996). For instance, those who define local with shorter discrete distances may be concerned with reducing fossil fuel usage and CO₂ emissions for environmental reasons (Pirog, Van Pelt, Enshayan, & Cook, 2001). The environmental reasoning for local may also extend into production practices such as sustainable or organic, which reduce the use of energy-based fertilizers and limit chemical and pesticide residue on food (Thompson, Harper, & Kraus, 2008; Martinez et al., 2010). Those who define local as a direct marketing relationship with a local farmer are valuing the social or community element of local (Campbell et al, 2013). Local food systems often come with many social implications that stem from the idea that there is something relational occurring between consumer and producer. Or as Hand & Martinez (2010) put it, “proximity [of local foods] is

defined in terms of social distance, rather than geographic distance” (p. 2). This sort of proximity or social relationship also has the ability to determine economic relationships, and is often referred to as social embeddedness (Martinez et al., 2010; Sage, 2003). Ideas such as social embeddedness and creating a sense of place through the support of local farmers by local consumers speak to the community value of local food systems (Thompson et al., 2008; Hinrichs, 2000). A feature of this embeddedness is the increased transparency of information provided by the farmer to the consumer to increase consumer understanding and connection to how and where their food is produced (Marsden, Banks, & Bristow, 2000). Additional research has shown that social distinctions and interactions rather than geography matter more to the way in which local food is defined and may change depending on whether it is the consumer or the retailer doing the defining (Nurse, Onozaka, & Thilmany-McFadden, 2010). Along the same lines, definitions based on direct-to-consumer or direct-to-institution type marketing arrangements are also employed to describe the local food system (Martinez et al., 2010). It is important to keep in mind then that with these two types of marketing systems, consumers and institutions are most often providing and influencing definitions of local food.

Local as a Distance

One of the most common ways of defining local is through using discrete distances. The 2008 Food, Conservation, and Energy Act (2008 Farm Act) asserts that the longest distance a food can be transported and still be labeled as local is 400 miles and/or within state boundaries (Martinez et al., 2010). However, in a review of existing literature on the subject, distances were found by Campbell et al. (2013) to range from 50 to 500 miles. One of the most common distances cited is a 100 mile radius from a certain location. This distance has been popularized by the local food movement, popular literature (e.g. *The 100 Mile Diet* (Mackinnon & Smith, 2007), Michael Pollan, Barbara Kingsolver), and is widely used in local food systems studies (Rose, Serrano, Hosig, Haas, Reaves, & Nickols-Richardson, 2008) and is the most accepted distance by consumers (Peters, Bills, Wilkins, & Fick, 2009a). For instance, 300 consumers in Wisconsin were surveyed to give their definition of local and 55% used “100 miles or less” as their preferred delineation for local food (Lawless, Stevenson, Hendrickson, & Cropp, 1999). In a more recent study by the Hartman Group (2008), 50% of the consumers they surveyed agreed that “local” meant a product had been produced within 100 miles. The aforementioned distances are traditionally used to define the local area in terms of a radial distance from a specific point,

but this can also be done in terms of a driving or network distance (Linthicum & Beatley, 2007). In terms of a radial distance (or “as the crow flies”), 100 miles would extend much further than would a network distance as most roads do not give a straight route – and many farms that may support a local food system are not along a major highway.

Local Defined Geo-Politically

Similar to distance, political definitions of local are also a common geographic way to define local. City, county, state, and even national boundaries may define what both consumers and retailers consider local (Edwards-Jones et al., 2008). This is reflected in that same survey by Lawless et al. (1999) in which 23% of Wisconsin consumers surveyed to define local defaulted to “produced within Wisconsin” and in the Hartman Group (2008) survey in which 37% of respondents used state boundaries to define local. Further, Darby, Batte, Ernst, & Roe (2008) found that consumers often default to state boundaries as a means to define local, especially if the only label used on a product is “produced nearby”, thus state boundaries become a natural geographic distinction for locally produced goods. Darby et al. (2008) also found that consumers are often not willing to pay more for products that are labeled as being produced closer to them as they continue to default to the state boundary as their definition of local. However, political distinctions such as state lines may become blurred when taking into consideration geographic regions such as New England or Northern California versus Southern California (Darby et al., 2008). Or in the case of the survey by Lawless et al. (1999) the Upper Midwest, which 11% of their survey respondents considered local.

Local as a “Food Shed”

Another geographic denotation of local foods is a food shed. A similar concept to the way in which water sheds operate, a food shed simply describes the geographic area that provides food to a given metropolitan area (Peters et al., 2009a). Traditionally, the idea of the food shed was used on both a regional as well as global scale in order to encompass all the locations from which a city receives its food supply (Hedden, 1929). In recent years, the food shed is used as a framework to describe the way in which food systems operate through a more localized supply structure (Getz, 1991) and often includes social and cultural context (Feenstra, 1997). Taken further, the food shed concept is often used to highlight departures taken by alternative food networks in opposition to more globalized systems which may have deleterious social and

environmental effects (Kloppenburg et al., 1996). At any rate, the food shed model has been used as an appropriate way to conceptualize the strengths and weaknesses of a more localized food system.

The size of the food shed would be relative to food needs of the given municipality's population and would translate into how much land would be needed to produce that food locally (Peters, Bills, Lembo, Wilkins, & Fick, 2009b). Peters et al. (2009b) used the food shed concept to map the potential for food to be produced on land within New York State to support its various population centers. Although this study found that New York State agricultural land could produce 34% of the population's food needs, Peters et al. (2009b) confirmed that the more populace areas of the state required food to be transported longer distance in order to meet demand. Thus, the idea of the food shed becomes relative to the size of the population that it supports, and even in the case of the Peters et al. (2009b) study, the scope of the food shed was still limited to the state boundaries of New York. In reality, a food shed could easily extend into a regional, national, or even a global definition of a food system (Getz, 1991). However, the global scope of a food shed is often opposed by the movement towards more localized food sheds, which are less destructive of environmental and social communities (Kloppenburg et al., 1996).

Local Defined by Market Typology

Local food systems often come with many social implications that stem from the idea that there is something relational occurring between consumer and producer during the transaction process. As Hand & Martinez (2010) put it, "proximity [of local foods] is defined in terms of social distance, rather than geographic distance" (p. 2). This sort of proximity or social relationship also has the ability to determine economic relationships, which is often referred to as social embeddedness (Martinez et al., 2010; Sage, 2003). Some studies have shown that produce will be defined as local if the consumer knew the farmer who grew it and/or delivered it to them (Milestad, Westberg, Geber, & Bjorklund, 2010) or how it was harvested (Zepeda & Reid, 2004). This sort of interpersonal, producer-consumer relationship sets a local food system apart from a more globalized system in which anonymity is an inherent characteristic (Lyson & Green, 1999). These research findings point to the idea of direct-to-consumer marketing being an important element of how consumers might define local food or a local food system.

These findings are further reflected in the increase in direct marketing outlets utilized by farmers. These outlets include CSA (community supported agriculture) arrangements, farmers' markets, pick-your-own, farm stands, community gardening, on-farm stores (Martinez et al., 2010; Lawless et al., 1999; Low & Vogel, 2011) and more recently in urban areas, mobile vendors (Public Health Law and Policy, 2009). In fact, direct-to-consumer sales of agricultural products are a fast growing portion of all agricultural sales as they increased by \$399 million (49 percent) from 2002 to 2007, and by \$660 million (120 percent) from 1997 to 2007 (Martinez et al., 2010). Most of the farms participating in these types of markets are small, as 81% of producers selling to direct-to-consumer markets grossed less than \$50,000 in 2008 (Low & Vogel, 2011). However, the size of farms participating in direct-to-consumer sales of fruits, vegetables, and beef are increasingly mid-sized farms grossing \$50,000 a year or more (Martinez et al., 2010), pointing to the idea that larger farms are taking advantage of local marketing. At the time of the 2007 Farm Census, 6% of all the farms in the U.S. sold \$1.2 billion worth of farm products directly to consumers, or 0.4 percent of all agricultural sales. Though a relatively small portion of agriculture, that amount of money exchanged locally among farmers and consumers can have a huge impact on the development of local economies (Meter, 2010).

Local as Defined by Institutions

As direct-to-consumer marketing expands, more traditional institutional and retail marketing channels are also expanding their availability of local produce to meet consumer demand for locally sourced product. These marketing channels include retail grocery chains, schools, restaurants, and hospitals – each often operating with and influencing different definitions of local. In 2008, the largest retailer, Wal-Mart, expressed their commitment to sourcing local fruits and vegetables to keep prices affordable and provide healthy choices to consumers (Martinez et al., 2010). This sentiment has been shared among other grocery retailers such as Safeway, Meijer, Kroger, and Delhaize America with 7 out of the top ten grocers in the United States advertising local products on their websites (Martinez et al., 2010).

Definitions of local among these grocery chains range from using state boundaries to referring to specific regions, with a small portion focusing on the practice of the growers themselves, such as sustainable and/or organic (Martinez et al., 2010). In a study regarding market access for local food in traditional supply chains, Abatekassa & Peterson (2011) found that large grocery chains and local independent retailers define local foods differently – the

former viewing food that is produced and sold within a given state or in neighboring states, and the latter viewing food that is produced, processed, and sold within a given county or neighboring counties. Dunne, Chambers, Giombolini, & Schlegel (2010) interviewed grocery stores in the Willamette Valley of Oregon and found that they defined local by distance, political boundaries, geographic regions, and personal connections. Similarly, Peterson, Selfa, & Janke (2010) surveyed institutional buyers in Northeastern Kansas and found that they relied on distance to help define local (mostly the 100 mile demarcation), as well as political boundaries, especially by county area.

Local as Defined by Producers

As the previous sections show, most definitions of local foods are developed by the last several actors within a food system – distributors, institutions, and consumers. Little research has focused on how producers perceive the definition and implications of local food and local food systems. The research that has been completed on the subject, has found that producers hold similar ideas of “local”, defining it mostly in terms of distance or geo-political boundaries (Peterson et al., 2010; Schneider & Francis, 2005). This is an important point as creating a common understanding among all participants in a local food system on how to define its boundaries will help guide its success. Consumers and institutions may make decisions about local purchasing with a 100 mile or regional demarcation in mind, but what if producers have a different take on local? How does that affect the robustness of that food system? In a region such as the Great Plains where the population and production of non-commodity crops is sparse, understanding how a producer defines local for themselves will help guide the resources they need to better access the markets within their definition. This could be especially true when understanding distance related barriers of marketing local food such as logistical costs, and transportation costs (Peterson et al., 2010; Visser, Trienekens, & van Beek, 2013).

Characteristics of Local Markets and Their Producers

Direct-to-Consumer

Market types that are often most associated with local food are direct-to-consumer markets. These markets include farmers’ markets, roadside stands, on-farm sales, and community supported agriculture (CSA) arrangements (Low & Vogel, 2011; Martinez et al.,

2010). A study on these types of markets by the USDA-ERS found that small farms (those grossing less than \$50,000 in annual sales) are more likely to rely on these direct-to-consumer markets, averaging \$6,737 in direct-to-consumer sales per farm in 2008 (Low & Vogel, 2011). Moreover, average direct sales account for over 35% of a small farm's total farm sales (Martinez et al., 2010). This is likely due to the fact that small, local farms do not produce the volume of product necessary to supply large wholesalers and/or institutions (Low & Vogel, 2011). As a result, these types of markets are indicative of food system localization as such movements often begin with small producers initiating direct marketing strategies (LaTrobe & Acott, 2000). Beyond economic size, Starr et al. (2003) found in a study of direct marketing in Colorado, that as the farm size decreases, the farmers become more likely to be engaging in sustainable farming practices.

Limitations of Direct-to-Consumer

One of the main disadvantages of direct-to-consumer markets is scale, which leads to limiting economic stability for participating farmers. Hinrichs (2003) makes note of this within Iowa direct markets, specifically rural farmers' markets, which have limited capacity to support rural producers wishing to transition from commodity agriculture to specialty markets. Unless they are located in thriving urban areas, farmers' markets are not substantive enough to support rural farms, which may have to rely on limited rural channels if they cannot feasibly access urban markets (Hinrichs, 2003). This finding also translates to CSA arrangements which also have economic limits for producers. Although they provide valuable means for developing relationships between farmer and consumer, CSA farms often require the producer to significantly subsidize their income with commodity products also produced on-farm or with off-farm income (Hinrichs, 2003). In the end, direct-to-consumer markets are positive tools for food system development to refocus the connection between farmers and consumers but more work is needed to make specialty farms viable within the same landscape of conventional commodity agriculture, where urban markets may be limited.

Direct-to-Institution

While direct marketing strategies seem implicit to the definition of local food systems, with growing consumer demand and increasing difficulty in coordinating local distribution, there is a need for local and regional food systems to extend into existing supply channels and larger

institutions (Hinrichs, 2003; Bloom & Hinrichs, 2010). Direct-to-institution or farm-to-institution is a concept in which locally and regionally produced farm products are sold to public and private institutions such as cafeterias in schools, universities, hospitals, and prisons, retail grocery stores, and restaurants (Harris, Lott, Latkins, Bowden, & Kimmons, 2012; Martinez et al., 2010). Other aspects of farm-to-institution may include educational programming on local food systems, nutrition, and/or cooking on the part of the institution with some activities extending to on-site farmer's markets or community supported agriculture produce box deliveries (Harris et al., 2012). Many producers want to stabilize their cash flow by scaling up their production to meet the demands of both their direct-to-consumer markets as well as the aforementioned institutional markets (Low & Vogel, 2011). Further, with the consumer demand for local foods, retailers are beginning to recognize the large market potential for sourcing products locally (Dunne et al., 2010).

An emerging concept for direct-to-institution marketing is the value chain framework. This framework has the advantage of retaining many of the positive characteristics of direct-to-consumer markets – such as social, economic, and environmental benefits – while operating at a larger scale to afford supplying a larger regional food system (Bloom & Hinrichs, 2010; Stevenson & Pirog, 2008). The characteristic of value chain systems that differs from traditional supply chains is that the focus is placed on value-added products and value-based interactions within the food system that add an ethical component to the economic exchange (Bloom & Hinrichs, 2010). Specifically, this occurs through differentiation of value-added products; committing to the economic welfare of all participants (producers, processors, distributors, and retailers); creating strategic partnerships especially between producers and processors; and shared governance and embedded trust among organizations (Stevenson & Pirog, 2008). In this way, value chains approach many aspects characterizing local food systems and can be a basis for integrating more local foods into a regionally scaled food system.

Recently, there has been an increasing trend in the development of farm-to-school networks across the United States. The USDA-FNS Farm to School Census (2012) reports that during the 2011-2012 school year, 3,812 school districts containing approximately 38,629 schools in all 50 states were purchasing local food and teaching children about food sources. The overall goal of farm-to-school programs is to purchase food products from local producers in order to improve the quality of meals and to promote the increased consumption of fruits and

vegetables (Harris et al., 2012). Other activities include the promotion of food-related curriculum and activities in schools such as school gardens, nutrition and culinary education, and visits to local farms and farmers markets (National Farm to School Network, 2011; Izumi, Wright, & Hamm, 2010). The National Farm to School Network (2011) reports some of the benefits of farm-to-school include increasing children's knowledge of agricultural food systems, nutrition, and the environment; increasing consumption of fruits and vegetables in children; supporting local economic development; increasing market opportunities for producers and processors; and promotion of food security.

Given the types of institutional markets, what are the characteristics of the local producers that are able to sell to them? In the eyes of retail grocery stores, local producers are considered to be small-to-medium size producers who supply mostly fresh fruits and vegetables (Abatekassa & Peterson, 2011). However, according to data based in the 2008 Agricultural Resource Management Survey, large local food sales farms (sales of \$250,000 or more) supplied 92.9% of local food sales to institutions whereas small and mid-sized local food sales farms only accounted for 3.5% and 3.6% respectively (Low & Vogel, 2011).

Barriers of Direct-to-Institution

Supplying institutions with local products is not a simple task, as each may come with their own set of regulations and/or purchasing preferences. Barriers cited include discrepancies in product price and quantity, seasonality of local product, lack of infrastructure to handle local food products, lack of skilled labor for food preparation, logistical costs, food liability and safety, and the amount of time devoted to marketing local product on the part of the producer and institution (Abatekassa & Peterson, 2011; Dunne et al., 2010; Harris et al., 2012; Visser et al., 2013). Addressing these barriers will ultimately require increased communication among local producers and institutions.

Food Systems Assessments

In order to assess the ability for a local food system to support local communities, many municipalities across the United States and Canada have analyzed the elements of their food system from producer through consumer. Feenstra (1997) prescribes the types of information that should be gathered for communities to learn more about their local food system. This information includes historical reviews of agriculture in the region, estimates of the regions'

present self-reliance in food, identification of local/seasonal foods, and studies in marketing and urban agriculture (Feenstra, 1997, pp. 32-33). In reviewing food system analyses, they are often framed around these types of information gathering.

Food system analyses are used to realize different goals such as determining the capacity for a region to support the optimal nutritional requirements of its communities (Desjardins & MacRae, 2005; Giombolini, Chambers, Schlegel, & Dunne, 2011), the ability for cities to produce a portion of their food needs (Grewal & Grewal, 2012; MacRae, Gallant, Patel, Michalak, Bunch, & Schaffner, 2010), and the overall status of food production, distribution, and consumption (Douglas County Food Policy Council, 2011). Most food systems assessments confront the need for proactive planning for both urban and rural land use, reconfiguring local distribution infrastructure, and improving production practices to produce wholesome foods on a larger scale. The latter need is often reflected in the realization that current diets are less than optimal, promoting chronic diseases such as obesity, heart disease, and diabetes. So if consumer health would be improved with increased consumption of fruits and vegetables, then why not produce those foods locally? Many of these food systems assessments find a huge opportunity for connecting local production with the dietary needs of local communities.

The first step to a diet connected food system assessment is to determine the current per-capita consumption of any number of food stuffs. This can be done for fruits, vegetables, legumes, grains, meat, dairy, and processed foods. Understanding current consumption patterns provides insight into what local producers need to produce to meet demand and/or to provide local communities with access to improved dietary options. Desjardins & MacRae (2005) completed an assessment of the Waterloo region in Canada and termed the connection between production and consumption the “nutritional environment” meaning that what food is produced and sold within a region will determine how well that population eats. They ascertained that nutritional requirements not commodity markets should determine production, and in turn, what is produced in these nutritional environments. This study selected foods based on suitability to be grown locally, availability of reliable data, popularity of foods based on consumption, and potential of foods to improve dietary quality where it was lacking (Desjardins & MacRae, 2005). A study completed in the Willamette growing region of Oregon utilized the USDA Dietary Guidelines for Americans to calculate dietary needs of the six food groups: grains vegetables, fruits, dairy, meat and beans, and oils (Giombolini et al., 2011).

Based on the dietary needs of a community, assessments will then determine the current acreage of certain foods being produced within their research area, or what they deem as local production supporting or with the capability of supporting the food system. For both of the aforementioned studies in Waterloo and in Willamette, they determined that local production does not meet optimal dietary requirements for the local population. In each study, “local” was defined as a growing region. Similar studies completed in Iowa (Swenson, 2011) and Kansas (Douglas County Food Policy Council, 2011) defined local within state and county boundaries respectively, but came to much the same conclusion – fruit and vegetable production does not meet the requirements for local consumption.

Even though assessments may find current production does not meet local optimal nutritional needs, the next step is to determine the realistic potential for local production to meet a certain percentage of local demand. Some factors that must be considered include the number and size of farms, amount of harvested cropland, and distance to market or transportation costs to the farmer (Swenson, 2011). Additional factors that seem to be a challenge for local food system development is the seasonality of certain fruit and vegetable crops (Desjardins & MacRae, 2005), zoning of agricultural land around urban areas, and the saturation of direct markets that cater to fresh fruit and vegetable producers (Douglas County Food Policy Council, 2011). These factors all point to the need for agricultural land within a defined “local” area to be productive enough to produce the needed fruits and vegetables and at the yields that are appropriate to meet demand of both local markets and local consumers. It also points to the need for local food systems to extend beyond traditional direct markets such as farmer’s markets and CSA arrangements, and coalesce with existing distribution networks to access institutional markets (Bloom & Hinrichs, 2010; Douglas County Food Policy Council, 2011; Visser et al., 2013).

As such, the scope of the present study is to review the current state of agricultural production within the food system of Manhattan, Kansas as well as to begin understanding the local food needs of current markets in Manhattan, specifically institutions. While an assessment of current consumption would be useful to the development of Manhattan’s food system, it is not within the scope of this study.

Food System Research Within the Great Plains

The Center for Great Plains Studies (2014) at the University of Nebraska defines the Great Plains region: “A sparsely-populated region with highly variable weather set against grassy, rolling land, the Great Plains stretches westward from the Missouri River at Omaha and Kansas City to the Rocky Mountains, and northward from the Texas Panhandle into the Canadian Prairie Provinces” (<http://www.unl.edu/plains/about/about.shtml>). Despite this massive area, compared to other regions of the United States little research has been completed on the viability of local food systems within the Great Plains. The Great Plains is dominated by commodity agriculture focused on exports and has low population density – two characteristics that make it less likely for producers to grow non-commodity crops and then transport those products to the populated areas within the region (Peterson et al., 2010). There have been a few notable studies completed on aspects of food system development in the Great Plains and in bordering states that relate well to the focus of our study. These studies point to the nascence of local food networks in the Great Plains and a continued need for traditionally agricultural lands to repossess the functioning of their own food systems.

As a result of local food systems within the Great Plains being so sparse, most of the existing studies attempt to address baseline knowledge of what is needed for these systems to succeed. A series of studies by Dave Swenson at Iowa State University and the Leopold Center for Sustainable Agriculture evaluated the economic impact of increased fruit and vegetable production in various regions of Iowa and then the Upper Midwest as a whole (Swenson, 2008, 2009, 2011). In each study Swenson calculates out the economic multipliers for output, labor income, and jobs related to fruit and vegetable production, taking into account all direct, indirect and induced economic effects based on different scenarios. For example, one study calculates the economic multipliers of existing fruit and vegetable production in Southeast Iowa as comparison for increasing fruit and vegetable production of 22 fruits and vegetables taking into account acreage offsets in commodities such as corn and soybean (Swenson, 2009). Hinrichs (2003) gives further perspective to the state of food system localization in Iowa with an examination of its historically commodity based agriculture and efforts to diversify production and reinstate local markets. Though technically not completely a part of the Great Plains, the agricultural landscape of Iowa is similar to that of Kansas and this type of economic research gives

perspective to the value that developing local food systems can have on traditionally agricultural communities.

A few notable studies have been completed on aspects of the local food systems within Kansas, though none specific to Manhattan, Kansas. The Douglas County Food Policy Council (2011) completed an assessment for a tri-county area in Northeastern Kansas that supports the metropolitan area of the city of Lawrence, which is expected to experience large increases in population. The goal of the assessment was to analyze both production capacity and consumer demand in regards to local food with the intent to “identify benefits, challenges and opportunities for a successful and sustainable local food system” (Douglas County Food Policy Council, 2011, pp. 1). While the present study analyzes some of these same aspects, the focus is placed more on producer and institution perceptions of local food and selling to institutions within the context of Manhattan’s food system. The most similar study to our own objectives is from Peterson et al. (2010) that performed a survey of producers and buyers to evaluate the barriers of a sustainable food systems in Northeastern Kansas. This survey confirmed a gap that exists between producers' desire to supply local institutions and buyers' interest in purchasing local goods, specifically in regards to price and quantity. While Kansas producers are often willing to supply institutions, Peterson et al. (2010) determined the need for more research to explore the logistical constraints for them to access institutional markets, especially in regards to producer willingness to transport product and at what cost. While the present study addresses some of those constraints, we again wanted to direct producers to think specifically about those barriers within the context of institutions in Manhattan, Kansas.

Manhattan, Kansas: Current Food System

Manhattan, Kansas (MHK) is a city located in Northeast Kansas in the Great Plains region of the United States. The city population is 52,281 (U.S. Census Bureau, 2014) which is a 16.6% increase from the 2000 Census count of 44,831 (City of Manhattan, 2014). Additionally, the metro area of MHK totals about 135,400 people (Forbes, 2014). Major industries include education (Kansas State University), military defense (nearby Ft. Riley U.S. Army Base), and bio-sciences (newly erected National Bio- and Agro-Defense Facility). Forbes ranked MHK as the #3 Best Small Places for Business and Careers and has a projected annual job growth of

1.9%, which gives some confidence to the further development of business such as those related to food systems. Table 1.1 describes the baseline demographic data for MHK.

Metropolitan areas, or those with a central city population of 50,000 or more, are the primary drivers of local food systems as they have consistent demand as well as large potential for continued growth and innovation in fruit and vegetable production (Swenson, 2011). Manhattan and its metropolitan area offers exactly the type of demand that could support and foster growth in a local food system. Since farmers producing at a distance would be less likely to incur higher costs of transportation to sell to metropolitan areas (Swenson, 2011), it is important to pay attention to expansion of production proximal to metro areas, such as MHK. This may translate into the feasibility of using the urban and peri-urban landscape as well as conserving farmland within a certain distance of MHK. To that point, a strong vision of developing a local food system should include fostering rural-urban connections, linking together the needs of urban consumers and local farmers (Feenstra, 1997). With MHK being one of a few metropolitan areas within a mostly rural, agriculture based region, the opportunity is huge for fostering urban-rural connections to develop its local food economy while preserving the surrounding agricultural landscape.

The current agriculture surrounding MHK and the dominant agriculture to the state of Kansas in general, could be described as intensive commodity agriculture or what is known as an “agricultural hotspot” (Murdoch, 2000). This term refers to agricultural landscapes which are dominated by large-scale, commodity agriculture, thus, leaving little capacity for the development of specialty food markets and/or more localized food systems (Hinrichs, 2003; Murdoch, 2000). Often times, these types of farms are not interested in making a transition from commodity crops to products that could be readily marketed to local consumers (Schneider & Francis, 2005). However, there are producers willing to grow crops to sell to local markets and understanding how they prefer to function within a food system (i.e. direct-to-consumer vs. direct-to-institution markets) is important to its development.

The agricultural land within MHK’s food system is not only amenable to production of agronomic crops and livestock. Kansas is known for its deposits of rich, level stretches of productive topsoil that make the land ideal for fruits and vegetables as well. The Douglas County Food Policy Council (2011) affirmed the opportunity for these soils to be productive in their study of the food system and land use of Douglas, Jefferson, and Leavenworth Counties in

Kansas (counties that are included in the present study's survey area). Five crops that they found to be the most productive within this landscape of Northeastern Kansas included lettuce, potatoes, tomatoes, bell peppers, and onions. This production is seasonal, as fruit and vegetable crops are grown spring through fall, so the use of season extenders (e.g. high tunnels, greenhouses) would undoubtedly fuel more year-round abundance and growth in MHK's food system.

In terms of a direct-to-consumer market, MHK offers two summer farmers' markets – a Saturday morning and Wednesday evening market - that operate April-October. In 2011, a winter market was organized to offer sales of local food about one to two times a month between November and April. During the summer season, the market boasts 40-45 vendors on Saturday market and 10-15 vendors at the Wednesday evening market (Downtown Farmers' Market of Manhattan, Inc., 2014). This is the main direct-to-consumer market available to producers wanting to sell products within MHK. Given the population of MHK, the opportunity is large for a producer to develop a CSA program with individual consumers or with groups of employees at one of the many workplaces in MHK, namely Kansas State University.

While there has been great progress in farm-to-school initiatives at the national level, Kansas is still developing networks between local producers and school district food services. There are six school districts noted on the Kansas Department of Education's Farm to School program website that have developed various different types of school garden projects that are used in nutrition education, though none mention the actual sourcing of local products from local farmers – and none of these school districts are within MHK's metropolitan area (KSDE Farm to School, 2009). However, this could be changing as the Kansas Department of Agriculture was a USDA Farm to School grant recipient allowing for eight Kansas schools funds to enhance the sourcing of local products for nutrition programs in 2014 (National Farm to School Network, 2014). Interestingly, the KSDE Farm to School program does not have a definition for local but rather allows that judgment to be made by an individual school citing that “There is no requirement that local grown and locally raised products need to be within a certain area or distance” (KSDE Farm to School, 2009).

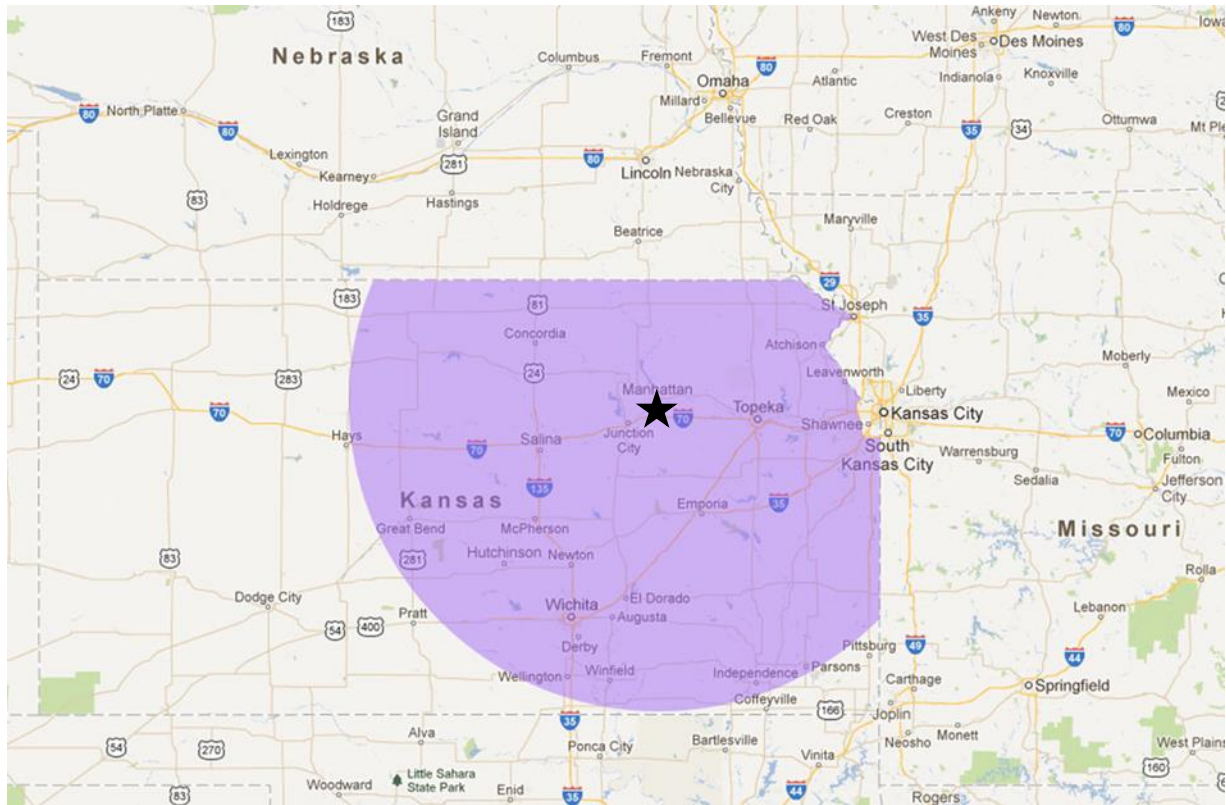
Study Area Defined

For the purposes of this study, we chose to utilize both distance and political boundaries to define the food system of Manhattan, Kansas (MHK). We chose a 150 mile radial distance from MHK within Kansas state boundaries, as we wanted to focus on Kansas producers participating in MHK's food system. Additionally, we excluded counties in the Kansas City Metropolitan area for two reasons: 1) we assumed producers in the Kansas City area already had sufficient local markets and 2) we were aware of another project performing a study involving producers in the Kansas City area at the same time. Figure 1.1 is a map that shows the extent of our study area.

Table 2.1 Demographic and socioeconomic data for Manhattan, Kansas (U.S. Census Bureau, 2010)

Population	52,281
Male	50.9%
Female	49.1%
Number of households	20,008
Average family size	2.82
<i>Race and ethnicity</i>	
White	83.5%
African American	5.5%
Native American	0.5%
Asian	5.1%
Pacific Islander	0.2%
Hispanic or Latino	5.8%
<i>Population age</i>	
Median age	23.8 years
< 18 years	15.3%
18 – 24 years	39.1%
25 – 44 years	24%
45 – 64 years	14.2%
65 + years	7.5%
<i>Socioeconomic</i>	
Median household income	\$40,650
Persons below poverty level	27.2%

Figure 1.1 Study Area (Map data: Google)



Chapter 3 - Evaluating Producer and Institution Definitions of Local Food in North Central Kansas

Introduction

To date, there has been little research on producer definitions or perceptions of the meaning of “local” food and “local food systems” - most research on this subject is directed toward consumer and institution perceptions (Peters, Bills, Wilkins, & Fick, 2009a; Lawless, Stevenson, Hendrickson, & Cropp, 1999; Hartmann Group, 2008). This is an important point as creating a common understanding among all participants in a local food system on how to define its boundaries will help guide its success. Consumers and institutions may make decisions about local purchasing with a 100 mile or regional demarcation in mind, but what if producers have a different take on local? How does that affect the robustness of that food system? In a region such as the Great Plains where the population and production of non-commodity crops is sparse, understanding how a producer defines local for themselves will help guide the resources they need to better access the markets within their definition. This could be especially true when understanding distance related barriers of marketing local food such as logistical costs, and transportation costs (Peterson, Selfa, & Janke, 2010; Visser, Trienekens, & van Beek, 2013). If food systems operated under producer-centric definitions of local food, the resource needs associated with building resilient food systems could possibly be better tailored towards creating more functional distribution pathways between farm and consumer.

This project was part of a larger study to evaluate the food system of Manhattan, Kansas (MHK) through understanding the types of Kansas producers within a 150 distance of MHK, their concerns for selling to institutional markets, and their resources needed to scale-up to sell to institutions. The objectives of this study were to understand Kansas producer perceptions of the meaning of “local” food systems. Additionally, we wanted to gain a sense of how potential institutional markets within MHK define “local” food in relation to their purchasing preferences.

Defining Local Food Systems

A food system at its most basic level includes the movement of food through production, processing, distribution, consumption and finally any resulting waste (Robles, 2013). Is a local food system defined differently? Generally speaking, the farmer plays the role of producer,

processor, marketer, and distributor in a local food system, with the majority of these farmers being small economically (<\$50,000) and located in or close to metropolitan counties (Martinez et al., 2010). Often times a local food system is defined based on the ideal that it is the counter point to a global food system (Hinrichs, 2003; Kloppenburg, Hendrickson, & Stevenson, 1996). Kloppenburg et al. (1996) sum this viewpoint up by ascertaining that "...self-reliant, locally or regionally based food systems comprised of diversified farms using sustainable practices to supply fresher, more nutritious foodstuffs to small-scale processors and consumers to whom producers are linked by the bonds of community as well as economy. The landscape is understood as part of that community and, as such, human activity is shaped to conform to knowledge and experience of what the natural characteristics of that place do or do not permit" (p. 34). Despite such references to community, economy, and environment, it remains that the term "local" has no generally accepted definition (Martinez et al., 2010). Despite the uncertainty, there are several different ways in which "local" food is commonly defined. These include distance, geo-political boundaries, food shed networks, and market typology.

Local as a Distance

One of the most common ways of defining local is through using discrete distances. The 2008 Food, Conservation, and Energy Act (2008 Farm Act) asserts that the longest distance a food can be transported and still be labeled as local is 400 miles and/or within state boundaries (Martinez et al., 2010). However, in a review of existing literature on the subject, distances were found by Campbell, Carlisle-Cummins, & Feenstra (2013) to range from 50 to 500 miles. One of the most common distances cited is a 100 mile radius from a certain location. This distance has been popularized by the local food movement (e.g. The 100 Mile Diet), popular literature (e.g. Michael Pollan, Barbara Kingsolver), and is widely used in local food systems studies (Rose, Serrano, Hosig, Haas, Reaves, & Nickols-Richardson, 2008) and is the most accepted distance by consumers (Peters et al., 2009a). For instance, 300 consumers in Wisconsin were surveyed to give their definition of local and 55% used "100 miles or less" as their preferred delineation for local food (Lawless, Stevenson, Hendrickson, & Cropp, 1999). In a more recent study by the Hartman Group (2008), 50% of the consumers they surveyed agreed that "local" meant a product had been produced within 100 miles. The aforementioned distances are traditionally used to define the local area in terms of a radial distance from a specific point, but this can also be done in terms of a driving or network distance (Linthicum & Beatley, 2007). In terms of a radial

distance (or “as the crow flies”), 100 miles would extend much further than would a network distance as most roads do not give a straight route – and many farms that may support a local food system are not along a major highway.

Local Defined Geo-Politically

Similar to distance, political definitions of local are also a common geographic way to define local. City, county, state, and even national boundaries may define what both consumers and retailers consider local (Edwards-Jones et al., 2008). This is reflected in that same survey by Lawless et al. (1999) in which 23% of Wisconsin consumers surveyed to define local defaulted to “produced within Wisconsin” and in the Hartman Group (2008) survey in which 37% of respondents used state boundaries to define local. Further, Darby, Batte, Ernst, & Roe (2008) found that consumers often default to state boundaries as a means to define local, especially if the only label used on a product is “produced nearby”, thus state boundaries become a natural geographic distinction for locally produced goods. Political distinctions such as state lines may become blurred when taking into consideration geographic regions such as New England or Northern California versus Southern California (Darby et al., 2008). Or in the case of the survey by Lawless et al. (1999) the Upper Midwest, which 11% of their survey respondents considered local.

Local as a “Food Shed”

Another geographic denotation of local foods is a food shed. A similar concept to the way in which water sheds operate, a food shed simply describes the geographic area that provides food to a given metropolitan area (Peters et al., 2009a). Traditionally, the idea of the food shed was used on both a regional as well as global scale in order to encompass all the locations from which a city receives its food supply (Hedden, 1929). In recent years, the food shed is used as a framework to describe the way in which food systems operate through a more localized supply structure (Getz, 1991) and often includes social and cultural context (Feenstra, 1997). Taken further, the food shed concept is often used to highlight departures taken by alternative food networks in opposition to more globalized systems which may have deleterious social and environmental effects (Kloppenburg et al., 1996). At any rate, the food shed model has been used as an appropriate way to conceptualize the strengths and weaknesses of a more localized food system.

Local Defined by Market Typology

Local food systems often come with many social implications that stem from the idea that there is something relational occurring between consumer and producer during the transaction process. As Hand & Martinez (2010) put it, “proximity [of local foods] is defined in terms of social distance, rather than geographic distance” (p. 2). Some studies have shown that produce will be defined as local if the consumer knew the farmer who grew it and/or delivered it to them (Milestad, Westberg, Geber, & Bjorklund 2010) or how it was harvested (Zepeda & Reid, 2004). These research findings point to the idea of direct-to-consumer marketing being an important element of how consumers might define local food or a local food system.

These findings are further reflected in the increase in direct marketing outlets utilized by farmers. These outlets include CSA (community supported agriculture) arrangements, farmers’ markets, pick-your-own, farm stands, community gardening, on-farm stores (Martinez et al., 2010; Lawless et al., 1999; Low & Vogel, 2011) and more recently in urban areas, mobile vendors (Public Health Law and Policy, 2009). In fact, direct-to-consumer sales of agricultural products are a fast growing portion of all agricultural sales as they increased by \$399 million (49 percent) from 2002 to 2007, and by \$660 million (120 percent) from 1997 to 2007 (Martinez et al., 2010). Most of the farms participating in these types of markets are small, as 81% of producers selling to direct-to-consumer markets grossed less than \$50,000 in 2008 (Low & Vogel, 2011). However, the size of farms participating in direct-to-consumer sales of fruits, vegetables, and beef are increasingly mid-sized farms grossing \$50,000 a year or more (Martinez et al., 2010), pointing to the idea that larger farms are taking advantage of local marketing.

Previous Research

As the previous section shows, most definitions of local foods are developed by the last several actors within a food system – distributors, institutions, and consumers. Little research has focused on how producers perceive the definition and implications of local food and local food systems. The research that has been completed on the subject, has found that producers hold similar ideas of “local”, defining it mostly in terms of distance or geo-political boundaries. Schneider & Francis (2005) performed a mail-out questionnaire with farmers and consumers in Washington County, Nebraska to understand the potential for increasing the amount of food grown and sold locally. The researchers defined local food for the survey participants as being

“grown on a local family farm or made by a local company (Local = Washington County or nearby areas” (p. 254). The mail-out survey had 37% response rate with a total usable N of 168. Within their defined “local” area, they concluded that consumers were very interested in purchasing local products while farmers were less enthusiastic to supply local markets – both direct and institutional. Perhaps if the defined area had been expanded, they would have found more farmers interested in growing food for Washington County consumers and institutions.

A study most similar to the current study was researched by Peterson, Selfa, & Janke (2010). They administered a mail-out survey to farmers and an on-line survey of institutions within Northeastern Kansas to understand barriers and opportunities for local farmers to supply institutions within the area. Their survey instruments also measured attitudes and definitions of local food. They defined their survey area by utilizing lists of farmers from growers associations for farmers within the region utilizing alternative marketing strategies. Out of the 1,669 producer surveys mailed, they received 192 usable surveys back for a response rate of 14.7%. They targeted institutional buyers located within 10 counties in northeastern Kansas, which included school districts, university dining, daycare centers, senior and group housing, hospitals and restaurants – amounting to 121 institutions. The on-line survey of institutions provided a response rate of 29.8%. Between the producer and institution survey, Peterson et al. (2010) found that 80% of all respondents considered 100 mile radius to be local. Producers and institutions also favored county and state boundaries, as well as having a market within a one hour drive.

Manhattan, Kansas – Current Food System

Manhattan, Kansas (MHK) is a city located in Northeast Kansas in the Great Plains region of the United States. The city population is 52,281 (U.S. Census Bureau, 2014) which is a 16.6% increase from the 2000 Census count of 44,831 (City of Manhattan, 2014). Additionally, the metro area of MHK totals about 135,400 people (Forbes, 2014). Major industries include education (Kansas State University), military defense (nearby Ft. Riley U.S. Army Base), and bio-sciences (newly erected National Bio- and Agro-Defense Facility). Forbes ranked MHK as the #3 Best Small Places for Business and Careers and has a projected annual job growth of 1.9%, which gives some confidence to the further development of business such as those related to food systems.

Metropolitan areas, or those with a central city population of 50,000 or more, are the primary drivers of local food systems as they have consistent demand as well as large potential for continued growth and innovation in fruit and vegetable production (Swenson, 2011). Manhattan and its metropolitan area offers exactly the type of demand that could support and foster growth in a local food system. Since farmers producing at a distance would be less likely to incur higher costs of transportation to sell to metropolitan areas (Swenson, 2011), it is important to pay attention to expansion of production proximal to metro areas, such as MHK. This may translate into the feasibility of using the urban and peri-urban landscape as well as conserving farmland within a certain distance of MHK. To that point, a strong vision of developing a local food system should include fostering rural-urban connections, linking together the needs of urban consumers and local farmers (Feenstra, 1997). With MHK being one of a few metropolitan areas within a mostly rural, agriculture based region, the opportunity is huge for fostering urban-rural connections to develop its local food economy while preserving the surrounding agricultural landscape.

The current agriculture surrounding MHK and the dominant agriculture to the state of Kansas in general, could be described as intensive commodity agriculture or what is known as an “agricultural hotspot” (Murdoch, 2000). This term refers to agricultural landscapes which are dominated by large-scale, commodity agriculture, thus, leaving little capacity for the development of specialty food markets and/or more localized food systems (Hinrichs, 2003; Murdoch, 2000). Often times, these types of farms are not interested in making a transition from commodity crops to products that could be readily marketed to local consumers (Schneider and Francis, 2005). However, there are producers willing to grow crops to sell to local markets and understanding how they prefer to function within a food system (i.e. direct-to-consumer vs. direct-to-institution markets) is important to its development.

In terms of a direct-to-consumer market, MHK offers two summer farmers’ markets – a Saturday morning and Wednesday evening market - that operate April-October. In 2011, a winter market was organized to offer sales of local food about once a month between November and April. During the summer season, the market boasts 40-45 vendors on Saturday market and 10-15 vendors at the Wednesday evening market (Downtown Farmer’s Market of Manhattan, Inc., 2014).

Applied Research Methods

Producer Survey

In December 2013, 162 fruit and vegetable farms within Kansas and within a 150 mile driving distance of Manhattan, Kansas (MHK) were identified through on-line databases (ourlocalfoodks.org, localharvest.org, kawrivervalley.org) and through a list of Manhattan Farmer's Market vendors. Farms whose addresses were located in the nine counties of the Kansas City Metropolitan area were excluded for two reasons: 1) we assumed producers in the Kansas City area already had sufficient markets and 2) we were aware of another project surveying producers in the Kansas City area at the same time. A written producer survey instrument was developed in January 2013.

The survey was mailed out to the 162 farms in early February 2013, following the Tailored Design Method (Dillman, Smyth, & Christian, 2009). This method prescribes a five-contact system to gain at least a 40% return-rate on a mail-out survey. These five-contacts included the following timeline: Day 1) pre-notice letter, Days 3-5) questionnaire/survey mailing with token incentive, Days 10-12) thank you/reminder postcard, Days 21-28) replacement questionnaire/survey for non-respondents, Days 21-28) final contact such as follow-up phone call or email. Our survey included an initial token incentive (a packet of seeds), and farms that returned a completed survey and opted to participate, were put into a drawing for gift cards. Our survey system followed the entire procedure with the exception of the final contact as we had reached a satisfactory return rate after 4 weeks and lacked a consistent way to contact farmers. Of the 162 surveys, 16 were returned as undeliverable giving us an adjusted starting sample of 146. Ninety-two usable surveys were returned giving us a response rate of 63%.

The written survey was titled "Kansas Farmer Survey: A Survey to Evaluate the Perceptions of Local Food Systems and the Barriers of Marketing to Institutions of Farmer's Within a 150 Mile Driving Distance of Manhattan, KS". Institutions were defined for the survey participants as retail grocers, schools, and hospitals. The survey measured five themes: 1) perceptions of local food and concerns for selling to institutions, 2) marketing and farm operations, 3) selling to institutions in Manhattan, KS, 4) farm characteristics, and 5) demographic data. The first survey theme utilized open-ended, multiple choice, and Likert-type questions to explore producer definitions of local food systems, concerns for selling to

institutions, selling under contract with institutions, and preference for selling to MHK institutions. The second survey theme utilized open-ended and multiple choice questions to explore producer usage of direct and institutional markets, methods of marketing, and the types of farm activities completed during a growing season. The third survey theme utilized a Likert-type scale to measure the importance of certain resources producers might need to scale-up their operation to meet the institutional demand of markets in MHK. The fourth theme utilized multiple choice and open-ended questions to understand the farm scale operated by producer respondents and the type of products produced. The fifth and final theme utilized multiple-choice and open-ended questions to obtain demographic information describing the survey respondent. Responses from Likert-type and multiple choice questions were coded, which means responses were transformed into a standardized form for easy and consistent analysis (Babbie, 2010). Written responses to open-ended questions were coded for manifest and/or latent content - i.e. concrete terms within a response and/or underlying meanings of a response (Babbie, 2010, p. 338) - to uncover common characteristics survey respondents utilized to describe the themes being examined. This coding process was achieved through QSR NVivo 10 coding software (NVivo Version 10.0200.0, QSR International Pty Ltd 1999-2012, Doncaster, Victoria, Australia). Once coded, descriptive statistics were performed on the survey themes using Microsoft® Excel® 2013 (15.0.4605.1000). Questions for which a producer respondent did not answer completely or fill out correctly were not included in the analysis for that particular question.

The scope of the present study focused on perceptions of local food through an open-ended and a multiple choice question. Unlike a survey study completed in Washington County, Nebraska to assess farmer opinions of local food (Schneider & Francis, 2005), our survey did not include a statement pre-defining local for the producer respondents. Besides the title of the survey itself, we did not provide any context for the type of definitions of local we were looking for nor did we clarify common terms associated with local food systems. We simply wanted to assess the baseline perceptions of local food held by producers in our survey area.

Two of the other themes measured by the survey asked questions that indirectly related to the idea of local distance. Both questions were Likert-type scales. The first scale measured the level of concern for certain statements regarding selling to institutions such as retail grocers, schools, and hospitals. The statement from that question which we will consider in this study is

“Costs associated with transportation for delivery (time, fuel)”. The second scale addressed the importance of obtaining resources needed to scale-up production to meet the supply needs of institutions in MHK. The resource which we will consider in this study is a larger capacity transportation vehicle. Overall, we felt like the data for these two survey items provide additional perspective to how producers in our survey area might relate local distance to their concerns for selling to larger markets and the resources needed to do so.

Along those same lines, our survey asked respondents to identify as being current sellers within MHK markets or not. It also asked if they would like to expand to markets in MHK markets or not. For those producers who indicated that they do not sell in MHK and/or would not like to expand to markets there, they had the opportunity to explain why in an open-ended question. This question asked two things: 1) where they currently sell their products and 2) why they are not interested in expanding to markets in MHK. We wanted to use these responses to determine the strength of MHK’s food systems and see how much distance was a factor for producers in determining where to sell their products.

Institutional Buyer Interviews

Throughout March and April 2013, personal interviews were conducted with three types of institutions in and around Manhattan, KS (MHK) – hospitals, grocery stores, and school dining services. Interviewees were first contacted by phone and then met in person to be interviewed. The interviews were semi-structured around a script developed for each institution type and each was recorded.

Produce managers of 6 retail grocery stores in MHK were contacted to be interviewed. Guptill & Wilkins (2002) developed categories to describe the different types of grocery stores. These grocery store types include:

- Hyperstore: usually a chain grocery store with 100,000 square feet and \$12 million in annual sales of both food – featuring products from major manufacturers – and non-food offerings and services
- Conventional supermarket: can be a part of a chain (>10 stores) or be independently owned (< 10 stores) and sells less than \$12 million in annual sales of food products, mostly from major manufacturers

- “Green” grocery store: a cooperative, proprietorship, partnership, or corporation that features specialty, natural, and organic food and non-food products with a limited number of products from conventional food manufacturers
- Discount grocery store: can be a part of a chain (>10 stores) or be independently owned (< 10 stores) and sells a limited number of items that are priced low based on offerings from overstocks, damaged goods, and traditionally cheap foods

We also included our own category of “Other” to encompass several ethnic food stores that exist in MHK. Utilizing these categories, Table 3.1 outlines the types of grocery stores found in MHK and the ones that our interview included. While MHK has examples of all types of grocery stores we chose to interview stores we felt that local producers would be most apt to sell. At each store, produce managers were interviewed, save one of the independent “green” grocery stores in which case the owner of the store was interviewed. One conventional supermarket denied an interview, but directed us to the corporate office regarding their purchasing policies for local food.

Food service managers were interviewed at three school districts within and nearby MHK. To give a sense of their size, Table 4.2 shows the number of elementary and secondary schools within these districts and their student enrollment for the 2013-2014 academic year. The food service purchaser for Kansas State University Dining Services was also interviewed. Dining services at the university includes three dining centers that serve 5000 students that live in campus housing plus visitors, and several retail food outlets such as “convenience stores”, a restaurant, and a bakery/coffee shop (Dept. of Housing and Dining Services, 2014). Finally, the food service manager at Manhattan’s main hospital, Mercy Regional, was also interviewed. Hospital food service operates a main cafeteria for patients, staff, and visitors as well as patient food preparation services. In all settings, grocery stores, schools, and the hospital, no one declined being interviewed.

These interviews had the objective of understanding institutional perceptions of local food, purchasing protocols, concerns with purchasing produce locally, and preferences for purchasing local products. Recordings of the interviews were transcribed, and the transcriptions were coded for manifest and/or latent content - i.e. concrete terms within a response and/or underlying meanings of a response (Babbie, 2010, pp 338) - to uncover common themes interviewees utilized to describe the objectives being examined. This coding process was

achieved through QSR NVivo 10 coding software (NVivo Version 10.0200.0, QSR International Pty Ltd 1999-2012, Doncaster, Victoria, Australia). The objective that we will focus on in this study is institutional perceptions of local food.

Results

Producer Demographics and Farm Characteristics

Table 3.3 outlines the demographics and farm characteristics for the producers who responded to our survey and is compared against USDA 2012 Census of Agriculture data for Kansas. Most all of our demographics are similar to the 2012 Census of Ag data for Kansas, with the exception of gender. Our survey instrument did not explicitly require the primary operator of the farm to fill out the survey, whereas the Census of Agriculture does. As a result, we attribute this as reason for 55% of our survey respondents being women. We cannot say with certainty that they are or are not the primary operator of the farm. Our survey respondents have also spent a little less time on their current operation, with 50% reporting being present on their current farm for 10 years or less. In terms of acreage, the farms in our survey are slightly smaller in size with a half of all farms in our survey reporting operating on 14 acres or less. Also, it is interesting to note that the total acreage reported in our survey was 15,009 acres, which is only 0.03% of 46.3 million acres of Kansas farmland reported on through the Census of Agriculture. So not only are the farms in our survey small, but they represent a fairly small segment of Kansas agriculture at large. Furthermore, these farms are small in the economic sense with 75% reporting 2012 gross sales of less than \$50,000, with 1 in 3 farms grossing less than \$2500.

Table 3.4 outlines the types of producers represented by our survey, the top three products each producer type produced, and the direct and institutional markets utilized in 2012. Specialty producers are those that identified their operation as only producing fresh vegetables, fresh fruit, herbs, fruit and/or vegetables for processing, ornamental plants, and/or honey. This definition is in consensus with the USDA definition of specialty crops (USDA-AMS, 2013). Non-Specialty Producers were defined as producing no specialty crops per the USDA-AMS definition of a specialty crop. In effect, NSPs are those growing grain crops, producing eggs/dairy, and/or raising livestock for meat such as beef, poultry, pork, and/or lamb/goat. All other respondents not classified as Specialty or Non-Specialty Producers were Diversified Growers. These producers usually produced a mix of product types such as fresh vegetables,

eggs, and a value-added product and they represented 50% of our survey respondents. Overall, specialty crops were the most popular crops grown by our producer respondents (Figure 3.1). Producers also favored direct-to-consumer markets with 65% of producers utilizing farmers markets', and on average, obtaining 50% of their total sales from that outlet (Table 3.4). Of the institutional markets, grocery stores were most utilized but accounted for a smaller percentage of total farm sales (on average only 16%).

In summary, it appears that the farms represented by our survey are small-scale, mostly diversified in their product offerings, and reliant on direct-to-consumer markets.

Perceptions of Local Food and Local Food Systems

Of the 92 surveys, 81 producers wrote a response to an open-ended question asking them to define a "local food system". Responses were open-coded for common themes within QSR NVivo 10 coding software (Table 3.5). Within these responses, 23 producers gave vague, ambiguous descriptions of local food or simply repeated the question in their response. For example, one producer wrote: "A system where most of the food is grown locally." This sort of response is not a complete loss as it could be suggestive of the confusion these producers' have in defining local food.

Twenty-seven producers mentioned a discrete distance in their response such as a radius of 20, 50, 100, or 150 miles. Another 13 producers utilized some other way to define local "distance" such as with driving time (example: "Food that is raised within a 4 hour drive.") or using geo-political definition such as county, region, or state boundaries – the most common being grown in Kansas or in neighboring states.

Eleven responses referred to the utilization of direct-to-consumer marketing strategies such as farmer's markets, as being indicative of local food. Two examples of this type of response are: "It is food produced in the area you live. It could be in a "swapping", a farmer's market, or a co-op." and "A farmer's market – food you buy directly from the grower." An additional 8 producers mentioned selling to local institutions such as restaurants and grocery stores as part of their definition of local food. No producers mentioned other institution types such as school districts, university dining services, hospitals, or nursing homes.

Five producers referred to the community aspect of local food systems in that consumers know who their farmer is and have developed a relationship with them. To this effect, one

producer wrote: “Local foods are grown by producers you can get to know...A great deal of local produce is sold direct to local people.” Another producer wrote: “Local food means people you can physically meet. I don’t really have a distance. I should be able to easily identify the location of the producer.” Nine of the producer responses approached the “system” aspect of a local food system mentioning steps that may come in between producer and consumer. A response representative of this sentiment reads: “A food system that is based on local production and processing of food. It includes producers and the consumer. It can also include those who market the food if not done directly by the producer.”

Nine producers referred to the type of production and quality of the product to be descriptive of a local food system. Examples of this type of response were: “Food that is produced in a sustainable manner with emphasis on quality not price.” and “Food nearby (less than 200 miles) that is grown on small farms utilizing sustainable agriculture practices – often and preferably utilizing organic farming techniques without chemicals or GMO products.” Some other themes that appeared less often in producer responses but are no less important include local as a reaction to commercial, long-distance food systems, local food being more supportive of local economies, reducing energy use, and local food as being the most nutritious option. These sort of non-distance views of local harken to the difficulty of giving a concise definition of local food or a local food system.

It is important to note that the most common response among all producers included more than one way of defining local food. Twelve producers utilized a distance as well as another definition to describe the meaning of local. An example of this type of response is: “Local food definitions are difficult to put into words - for me personally it involves a physical definition of my local area (probably 50 miles or less). Combined with a knowledge of the farm/land where the food was nourished and the caretakers of the land and the food.” Another nine producers did not include a distance in their definition of local food but utilized more than one characteristic to describe a local food system. An example of this type of response is: “Food that is produced in a sustainable manner with an emphasis on quality not price. That is available to consumers in the county area when in season.”

Perception of Local Distance

In addition to asking producers to define a local food system in their own words, a multiple-choice question had them choose a distance that would define a food as local or not. A total of 90 producers responded to this question. Producers could choose from the distances of 25 miles or less, 50 miles or less, 75 miles or less, 100 miles or less, 150 miles or less, or 150 miles or more. Since we defined our survey area as a 150 mile distance from MHK within Kansas borders, we kept our distances within 150 miles. Figure 3.2 shows the percentage of producers that chose which distance they perceived to represent a “local” distance. The majority of producers chose 100 miles or less (36%). Thirty-nine percent of producers chose distances that were less than 100 miles, 21% choosing 50 miles or less.

Institution Perceptions of Local Food

Table 3.6 summarizes how the different institutions we interviewed defined local food and the percentage that reported they had purchased locally – by their standards – in the past. At least one interview within each institution category mentioned distance as part of their definition of local (with the exception of the hospital). Using geo-political boundaries such as state boundaries or the region of the Great Plains was also mentioned. Grocery stores also held the attitude that local food was fresher and of higher quality than other sources.

One response worth highlighting is an attitude towards local distance given by a school district food services director. In regards to local distance they said: “I guess the distance would be up to the farmer, if it was worth it for them to travel the distance to our school.” This is a poignant response for two reasons. First, it points to the idea that some credence should be given for the producer’s perspective to be considered when defining what is local food. Second, it reflects the idea that producers still incur most of the logistical and transportation costs when it comes to participating in direct-to-institution markets (Izumi, Wright, & Hamm, 2010; Gregoire & Strohbehm, 2002; Peterson et al., 2010) providing a significant barrier for developing this aspect of local food markets.

Local Distance and Concerns for Selling to Institutions and Resource Needs

The survey asked producers to rate their concern for selling to institutions such as school dining services, grocery stores, and hospitals. There were 15 statements regarding different aspects of production, marketing, packaging and transportation, institutional purchasing policy,

and certifications. Rating was completed as a 4-point Likert scale with 1 indicating the most concern and 4 indicating no concern. An additional column labeled “N/A” was available for producers to mark if they felt like they had no experience with a statement or if it did not apply to their operation. Of the 92 respondents, 86 producers gave usable responses to this question.

One of the concern statements was “Costs associated with transportation for delivery (time, fuel)”, which indirectly relates to the distance aspect of definitions for local food. Fifty-six percent of All Producers (n=86) indicated highest concern for this statement, ranking it as the #3 overall top concern out of 11 given concerns. (Highest concern was calculated by totaling the number of “Most Concern” and “Some Concern” ratings, the two highest concern ratings on the scale.) This level of concern was consistent regardless which “local” distance a producer had chosen.

Another aspect of the survey was asking producers to rate the importance of obtaining certain resources they might need to scale-up their production to meet the supply needs of institutions in Manhattan, Kansas. The producers rated resources using a 4-point Likert type scale with 1=Very Important and 4=Not Important. To determine resources that were of high importance the ratings of “Very Important” and “Somewhat Important” were totaled for each resource. To determine the resources that were of low importance, the ratings of “Slightly Important” and “Not Important” were totaled for each resource. One of the resources rated was a larger capacity transportation vehicle – a resource that indirectly relates to the distance aspect of local food. Surprisingly, only 37% of All Producers (n=57) rated this resource as highly important. This level of importance was fairly consistent regardless of which “local” distance a producer had chosen.

Distance as a Barrier to Expanding to Markets in Manhattan, Kansas

The survey instrument asked producers whether or not they currently sold agricultural products in MHK and/or if they would like to expand to markets in MHK. Twenty-one producers identified as currently selling products in MHK while 71 identified as not selling products in MHK. Thirty producers identified as wanting to expand to markets in MHK and 60 identified as not wanting to expand to markets in MHK. Figure 3.3 outlines these responses as a flow chart.

For those producers who indicated that they do not sell in MHK and/or would not like to expand to markets there, they had the opportunity to explain why in an open-ended question.

This question asked two things: 1) where they currently sell their products and 2) why they are not interested in expanding to markets in MHK. Sixty-six producers wrote responses to these questions. Table 3.7 summarizes themes that arose from these responses regarding the reasons for not wanting to sell to markets in MHK. The majority of these responses referenced distance or costs associated with delivery as being the barrier that prevents them from expanding to markets in MHK. The second most prevalent reason was being satisfied with their current markets, whether they were direct-to-consumer or institutional markets. These producers also mentioned that pricing and competition was an issue within MHK markets. Further, they simply did not produce enough to meet the needs of both their current markets and possible markets in MHK.

Discussion

Despite the title of our survey, which defined our survey area as a 150 miles radius from Manhattan, Kansas (MHK), most producer respondents did not choose 150 miles or less as their defining distance for local food. The majority of producers chose the 100 mile or less demarcation. This is consistent with results found by Peterson et al. (2010) who in a survey of Kansas farmers and institutional buyers, found that roughly 80% of their producer and institutional respondents considered a 100 mile radius to define the market area for local food. This points to the pervasiveness of the popularized 100 mile distance for local food found in popular literature (Mackinnon & Smith, 2007; Martinez et al., 2010), food systems research, (Rose et al, 2008) and in consumer research (Peters et al., 2009a; Lawless et al., 1999; Hartmann Group, 2008).

Our producer respondents were also very much aware of other attributes associated with local food systems. In their open-ended responses, many referenced direct-to-consumer markets, consumers having a relationship with their farmer, and farmers utilizing sustainable or organic production practices. Many of these references were made in conjunction with a mile-based definition, pointing to their cognizance of both local as defined spatially as well as qualitatively. However, it remains that 1 in 4 farmers gave ambiguous definitions of local food systems. Perhaps defining a food system is not necessary for these producers, but in order to approach the development of food systems understanding the context in which producers are willing to operate gives a basis for which types of resources and concerns should be addressed first.

While we asked producers to define local food, we did not specifically ask them to tell us how far they would be willing to transport product to a market. MHK is one of a few metropolitan areas in Kansas and has the opportunity to provide producers within our survey area both direct-to-consumer and direct-to-institution market opportunities. That being said, with producers utilizing mostly direct-to-consumer markets, it may not be worth it for them to travel a long distance to sell at a farmers' market or make CSA deliveries in MHK once a week. This seems especially likely due to 76% of the producers having grossed less than \$50,000 in 2012 and primarily selling to direct markets which do not always have the greatest profit potential (Hinrichs, 2003; Low & Vogel, 2011). Further, those producers that did not sell in MHK and were not likely to expand to markets there, reported that they are satisfied with their current markets (direct-to-consumer and/or institutional) and did not see the cost effectiveness of trying to reach MHK markets.

Institutional perceptions of local food touched on most aspects of commonly used definitions for local food. Unlike the findings of Peterson et al. (2010), the institutions we interviewed did not once mention the 100 mile demarcation commonly associated with local food distance. However, like the study by Peterson et al., (2010) they still favored using distances to define local as well as political boundaries. This also was the result of a study by Dunne, Chambers, Giombolini, & Schlegel (2010) that interviewed grocery stores in the Willamette Valley of Oregon and found that they defined local by distance, political boundaries, geographic regions, and personal connections. Several grocery stores also mentioned the freshness of local food as being a unique characteristic. This perception carries some significance in that these institutions have found an intrinsic value to local food worth promoting.

In light of their overall high concern for costs associated with transporting products to institutional markets, producers appear to be cognizant of the fact that a longer distance to market could mean high costs and less profit for them. This is especially apparent with producers who identified as not selling in MHK and not likely to sell to markets there, largely due to distance and the costs associated with transportation. This finding is consistent with the study by Peterson et al. (2010) that reported producers were often constrained by transportation and logistical costs when considering selling to local markets and institutions.

Conclusions

The goal of this study, which was within a larger study evaluating the food system of Manhattan, Kansas (MHK), was to simply evaluate the perceptions of local food held by producers and institutions. These perceptions may seem simple, but they speak volumes as to the state of MHK's food system development. Whether producers and institutions perceived local as a distance or as a qualitative attribute, it behooves the MHK community to further promote a more localized food system with these preferred definitions in mind. Moreover, further research to understand consumer perceptions in MHK would effectively bring stakeholders together to work within the same context of local.

Perhaps in moving forward in food systems research regarding MHK's food system – or a metropolitan area of similar size – focus should be placed on giving producers the resources they need to be competitive in markets within their defined areas while retaining the qualitative aspects of local they identify with. If distance is a producer's main association with local, then improving the logistical infrastructure and distribution pathways may be in order. For some producers, developing their marketing to connect to consumers or advancing their knowledge of sustainable practices to improve their production will be more needed. This same idea translates to the institutions – if they consider local to be 40 miles from their store in MHK, what can they contribute to ensure producers are able to transport their product that distance in the most cost-effective manner? Collectively, as a local food system is to truly operate with local resources then the community should explore aspects of that system that are missing. What processors, distributors, marketing outlets, and waste management stakeholders are yet to be involved? Enacting change at the food system level begins by defining it, but it is propelled by the involvement of all stakeholders within that system.

Table 3.1 Number of food retailers in Manhattan, Kansas (MHK) and the number of interviews completed in 2013 regarding perceptions of MHK’s local food system.

Grocery Store Type		Number of Locations in MHK	Number of Interviews
Hyperstores		2	0
Conventional Supermarkets	Chain	3	2
	Independent	2	2
“Green” Grocery Store	Chain	0	0
	Independent	3	2
Discount Grocery Store	Chain	1	0
	Independent	0	0
Ethnic Food Grocery Store		3	0

Table 3.2 School districts in and around Manhattan, Kansas metropolitan area that were interviewed in 2013 regarding perceptions of MHK’s local food system.

School district	# Elementary schools	# Secondary schools	Total student enrollment 2013-2014
Manhattan-Ogden USD 383	9	3	6100
Rock Creek USD 323	2	1	900
Riley County USD 378	1	1	705

Table 3.3 Producer demographic data and farm characteristics (N = 92), from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS, compared against USDA 2012 Census of Agriculture data for Kansas.

	Producer respondents	Kansas	
<i>Gender, Age, and Education level</i>			
Female	55%	11%	
Male	45%	89%	
Average Age	54	58.2	
Undergraduate degree or higher	63%	n/a	
<i>Race and ethnicity</i>			
Hispanic/Latino	2%	1%	
American Indian or Alaska Native	1%	0.6%	
Asian	0%	0.1%	
Black or African American	1%	0.3%	
Native Hawaiian or Other Pacific Islander	0%	0.03%	
White	93%	99%	
More than one race reported	5%	0.4%	
<i>Number of years on present farm</i>			
2 years or less	7%	3%	
3 to 4 years	20%	5%	
5 to 9 years	23%	12%	
10+ years	50%	80%	
<i>Summary of Acreage (N=87)^y</i>			
Average # of total acres	172.5	747	
Median # of total acres	14	200	
Total Acreage in survey area	15009.30	46,137,295	
<i>2012 Gross sales (N=84)^u</i>			
Small-scale: < \$50,000		75%	86%
< \$2,500	29%		
\$2,500-9,999	28%		
\$10,000-19,000	8%		
\$20,000-49,999	10%		
Mid-size: \$50,000- \$249,000		17%	14%
Large scale: \$250,000 or more		7%	--

^yThere were five non-respondents to the survey question for which this data was compiled.

^uThere were eight non-respondents to the survey question for which this data was compiled.

Table 3.4 Farm characteristics of survey respondents by acreage, producer type, crops produced, and markets utilized in 2012, from a survey of Kansas producers found within a 150 miles distance of Manhattan, KS.

<i>Producer type^z (N=92)</i>	<i>% Respondents</i>	<i>Top Three Crops</i>	
Specialty Crop Producer	26%	#1. Fresh vegetables	#2. Fresh fruit
		#3. Herbs	
		#1. Pork / Beef (tie)	#2. Eggs
Non-Specialty Crop Producer	24%	#3. Poultry	
		#1. Fresh vegetables	#2. Eggs
Diversified Producer	50%	#3. Fresh fruit	
<i>Top three direct markets utilized in 2012 (N=68^y)</i>			
	#1. Farmers' market	#2. Farm stand	#3. On-line sales
% Producers that utilized market	65%	32%	29%
Average % of total farm sales from this market	50.3%	32%	27.5%
<i>Top three institutional markets utilized in 2012 (N=68^y)</i>			
	#1. Grocery store	#2. Restaurant	#3. Wholesale
% Producers that utilized market	40%	31%	11%
Average % of total farm sales from this market	16.1%	13.7%	36.1%

^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

^yThere were 24 non-respondents to the survey question for which this data was compiled.

Table 3.5 Summary of common themes attributed by producer survey respondents (n=92) through an open-ended question asking them to define a “local” food system, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

Theme regarding a characteristic of a “local” food system		N
By road miles and/or driving time (e.g. “2 hour drive”)		27
Ambiguous response		23
Market typology	Direct-to-consumer	11
	Direct-to-institution	8
Other themes		15
Geo-political definition and/or driving time		13
Road miles + Other definition		12
No response		11
Production practices (sustainable, organic) and/or product quality		9
Involvement of whole food system		9
More than one definition (other than road miles)		9
Knowing the farmer		5

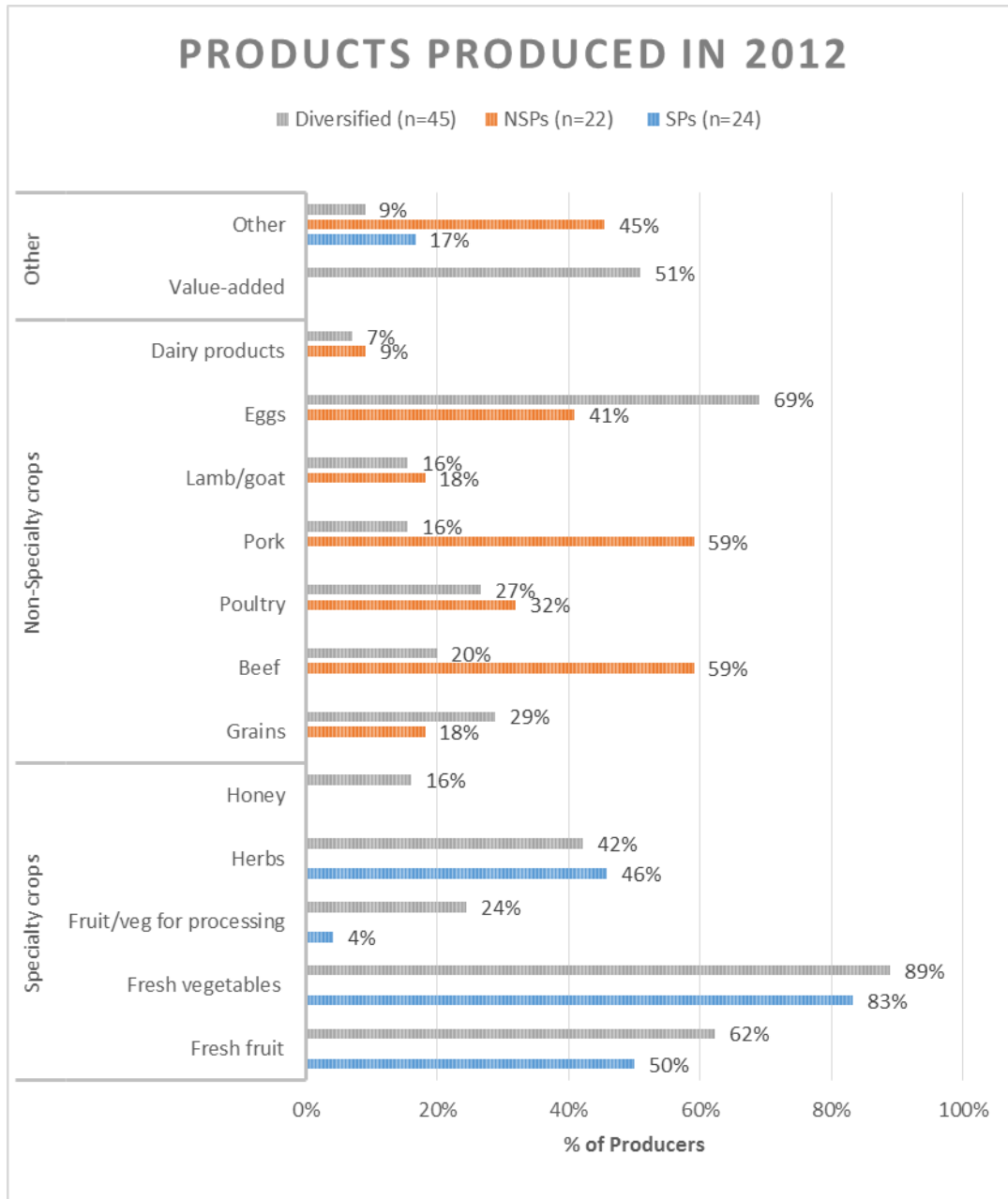
Table 3.6 Summary of perspectives of local food held by produce managers and food purchasers of institutions in Manhattan, Kansas (MHK), and the percentage of them that had sourced locally in the past, from interviews performed in 2013 regarding institutional perceptions of MHK’s local food system.

Institution Type	Definitions of Local	% Interviewees that had sourced locally
Conventional supermarkets	- 30-40 miles - Kansas grown - Mid-West/Great Plains grown - Freshness of product	100%
“Green” grocery store	- 60 miles - As little transportation as possible - High quality produce	100%
School Districts and University Dining	- 50-100 miles - Kansas grown - Defined by farmer	75%
Hospital	- Kansas and bordering states	0%

Table 3.7 Summary of responses to open-ended question on why some producer respondents are not interested in expanding to markets in Manhattan, Kansas (MHK), from a survey of Kansas producers found within a 150 mile distance of MHK.

Reason for not wanting to expand to markets in MHK	N
Distance related (e.g. too far)	30
Cost to deliver to MHK too high (e.g. fuel cost, time, cost effectiveness)	11
Satisfied with current direct and/or institutional market	12
Harder to sell products at a fair price in MHK or too much competition	6
Not enough product to sell	4
Personal or family reasons	3

Figure 3.1 Products produced in 2012 by Diversified Producers, Non-Specialty Producers (NSPs), and Specialty Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

Figure 3.2 Producer survey respondents (n=92) perception of local food definition when given distances, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

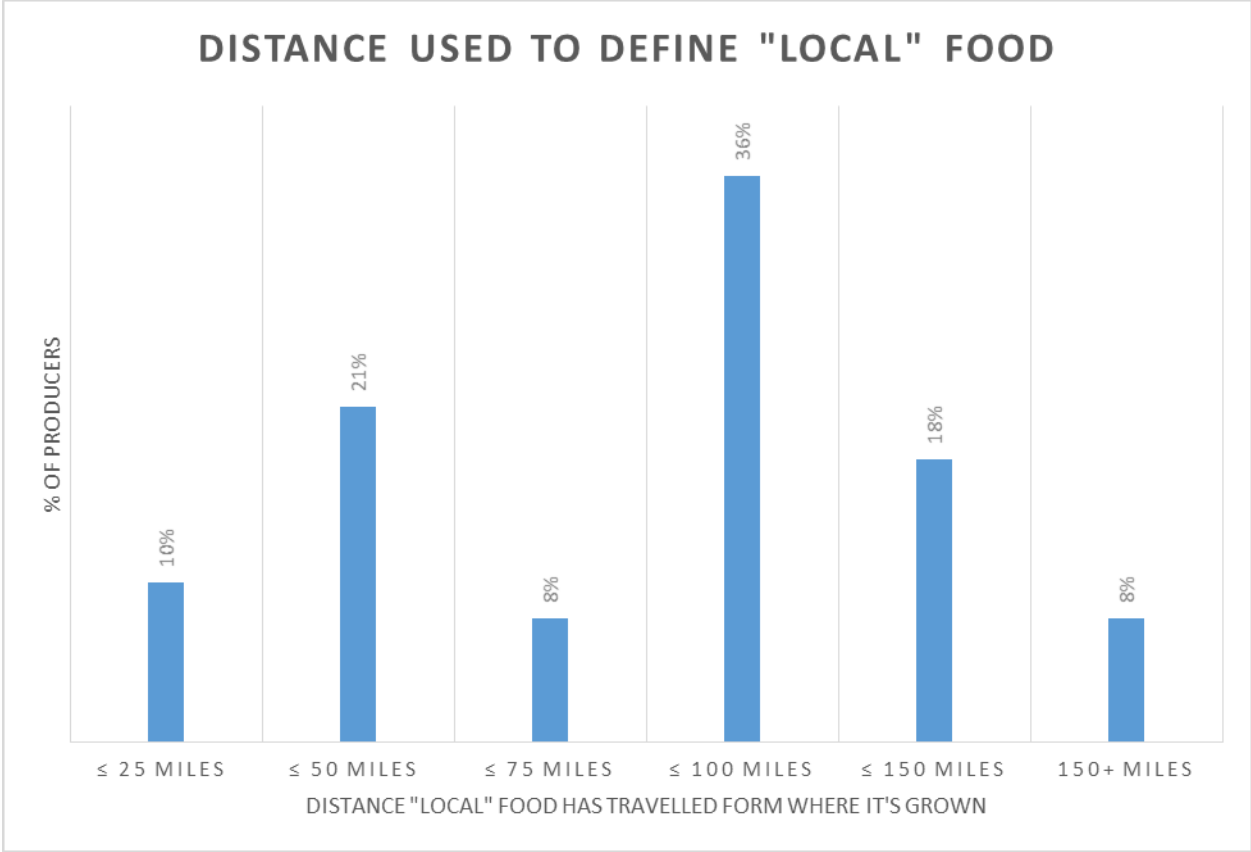
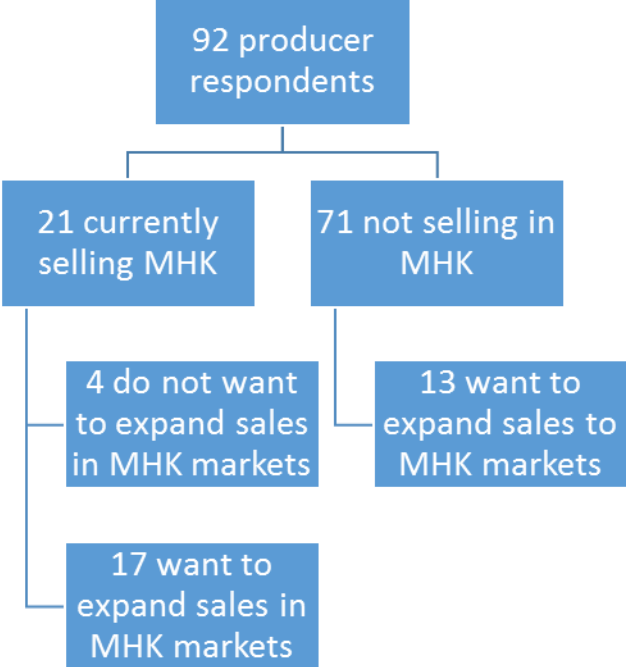


Figure 3.3 Outline of the number of producer respondents selling or not selling in Manhattan, Kansas (MHK) during 2012, from a survey of Kansas producers found within a 150 mile distance of MHK.



Chapter 4 - Evaluating Producer and Institution Perspectives of the Local Food System of Manhattan, Kansas: Concerns and Opportunities for Direct-to-Institution Marketing

Introduction

Agriculture is a driving industry for most areas of the United States, and the Great Plains region is no exception. In Kansas, agriculture is the primary industry and is in the USDA 2012 Census of Agriculture's Top 10 states of total agricultural sales, total crop sales, and total livestock sales (USDA-NASS, 2014). Despite the thriving agricultural industry, little research has been reported on the local food systems supporting the Kansas communities. What are the characteristics of a local food system within the fabric of an agriculturally rich state? Farming operations that cater to local markets are often small scale, producing specialty crops, meats, eggs and dairy for direct-to-consumer markets in and around metropolitan counties (Martinez et al., 2010). With this in mind, the goal of this study was to evaluate the characteristics and perceptions of the local food system supporting Manhattan, Kansas – a metropolitan area located in North Central Kansas. Specifically, we wanted to understand the producer's view of expanding beyond the typical direct markets into institutional markets such as school districts, university dining services, grocery stores, and hospital food services. The objectives of this study were 1) understand producer perceptions of selling to institutions in Manhattan, Kansas 2) identify resources needed by producers to access institutional markets, and 3) understand the preferences of local institutions in local purchasing.

Local Food Market Typologies: Direct-to-Consumer vs. Direct-to-Institution

Market types that are often most associated with local food are direct-to-consumer markets. These markets include farmers' markets, roadside stands, on-farm sales, and community supported agriculture (CSA) arrangements (Low & Vogel, 2011; Martinez et al., 2010). A study on these types of markets by the USDA-ERS found that small farms (those grossing less than \$50,000 in annual sales) are more likely to rely on these direct-to-consumer markets, averaging \$6,737 in direct-to-consumer sales per farm in 2008 (Low & Vogel, 2011). Moreover, average direct sales account for over 35% of a small farm's total farm sales (Martinez

et al., 2010). This is likely due to the fact that small, local farms do not produce the volume of product necessary to supply large wholesalers and/or institutions (Low & Vogel, 2011). As a result, these types of markets are indicative of food system localization as such movements often begin with small producers initiating direct marketing strategies (LaTrobe & Acott, 2000). Beyond economic size, Starr et al. (2003) found in a study of direct marketing in Colorado, that as the farm size decreases, the farmers become more likely to be engaging in sustainable farming practices.

Limitations of Direct-to-Consumer

One of the main disadvantages of direct-to-consumer markets is scale, which leads to limiting economic stability for participating farmers. Hinrichs (2003) makes note of this within Iowa direct markets, specifically rural farmers' markets, which have limited capacity to support rural producers wishing to transition from commodity agriculture to specialty markets. Unless they are located in thriving urban areas, farmers' markets are not substantive enough to support rural farms, which may have to rely on limited rural channels if they cannot feasibly access urban markets (Hinrichs, 2003). This finding also translates to CSA arrangements which also have economic limits for producers. Although they provide valuable means for developing relationships between farmer and consumer, CSA farms often require the producer to significantly subsidize their income with commodity products also produced on-farm or with off-farm income (Hinrichs, 2003). In the end, direct-to-consumer markets are positive tools for food system development to refocus the connection between farmers and consumers. To make specialty farms viable within the same landscape of conventional commodity agriculture, where urban markets may be limited, it will be important to foster both direct-to-consumer markets and a transition to direct-to-institution markets.

Direct-to-Institution

While direct marketing strategies seem implicit to the definition of local food systems, with growing consumer demand and increasing difficulty in coordinating local distribution, there is a need for local and regional food systems to extend into existing supply channels and larger institutions (Hinrichs, 2003; Bloom & Hinrichs, 2010). Direct-to-institution or farm-to-institution is a concept in which locally and regionally produced farm products are sold to public and private institutions such as cafeterias in schools, universities, hospitals, and prisons, retail

grocery stores, and restaurants (Harris, Lott, Lakins, Bowden, & Kimmons, 2012; Martinez et al., 2010). Other aspects of farm-to-institution may include educational programming on local food systems, nutrition, and/or cooking on the part of the institution with some activities extending to on-site farmer's markets or community supported agriculture produce box deliveries (Harris et al., 2012). Many producers want to stabilize their cash flow by scaling up their production to meet the demands of both their direct-to-consumer markets as well as the aforementioned institutional markets (Low & Vogel, 2011). Further, with the consumer demand for local foods, retailers are beginning to recognize the large market potential for sourcing products locally (Dunne, Chambers, Giombolini, & Schlegel, 2010).

Recently, there has been an increasing trend in the development of farm-to-school networks across the United States. The USDA-FNS Farm to School Census (2012) reports that during the 2011-2012 school year, 3,812 school districts containing approximately 38,629 schools in all 50 states were purchasing local food and teaching children about food sources. The overall goal of farm-to-school programs is to purchase food products from local producers in order to improve the quality of meals and to promote the increased consumption of fruits and vegetables (Harris et al., 2013). Other activities include the promotion of food-related curriculum and activities in schools such as school gardens, nutrition and culinary education, and visits to local farms and farmers markets (National Farm to School Network, 2011; Izumi, Wright, & Hamm, 2010). The National Farm to School Network (2011) reports some of the benefits of farm-to-school include increasing children's knowledge of agricultural food systems, nutrition, and the environment, increasing consumption of fruits and vegetables in children, supporting local economic development, increasing market opportunities for producers and processors, and promotion of food security.

Given the types of institutional markets, what are the characteristics of the local producers that are able to sell to them? In the eyes of retail grocery stores, local producers are considered to be small-to-medium size producers who supply mostly fresh fruits and vegetables (Abatekassa & Peterson, 2011). However, according to data based in the 2008 Agricultural Resource Management Survey, large local food sales farms (sales of \$250,000 or more) supplied 92.9% of local food sales to institutions whereas small and mid-sized local food sales farms only accounted for 3.5% and 3.6% respectively (Low & Vogel, 2011).

Barriers of Direct-to-Institution

Supplying institutions with local products is not a simple task, as each may come with their own set of regulations and/or purchasing preferences. Barriers cited include discrepancies in product price and quantity, seasonality of local product, lack of infrastructure to handle local food products, lack of skilled labor for food preparation, logistical costs, food liability and safety, and the amount of time devoted to marketing local product on the part of the producer and institution (Abatekassa & Peterson, 2011; Dunne et al., 2010; Harris et al., 2012; Visser, Trienekens, & van Beek, 2013). Addressing these barriers will ultimately require increased communication among local producers and institutions.

Previous Food Systems Research

A few notable studies have been completed on aspects of the local food systems within Kansas, though none specific to Manhattan, Kansas. The Douglas County Food Policy Council (2011) completed an assessment for a tri-county area in Northeastern Kansas that supports the metropolitan area of the city of Lawrence, which is expected to experience large increases in population. The goal of the assessment was to analyze both production capacity and consumer demand in regards to local food with the intent to “identify benefits, challenges and opportunities for a successful and sustainable local food system” (Douglas County Food Policy Council, 2011, pp. 1). While the present study analyzes some of these same aspects, the focus is placed more on producer and institution perceptions of local food and selling to institutions within the context of Manhattan’s food system. The most similar study to our own objectives is from Peterson, Selfa, & Janke (2010) surveyed producers and buyers to evaluate the barriers of a sustainable food system in Northeastern Kansas. This survey found a gap that exists between producers' desire to supply local institutions and buyers' interest in purchasing local goods, specifically in regards to price and quantity. While Kansas producers are often willing to supply institutions, Peterson et al. (2010) determined the need for more research to explore the logistical constraints for them to access institutional markets, especially in regards to producer willingness to transport product and at what cost. While the present study addresses some of those constraints, we again wanted to direct producers to think specifically about those barriers within the context of institutions in Manhattan, Kansas.

Manhattan, Kansas: Current Food System

Manhattan, Kansas (MHK) is a city located in Northeast Kansas in the Great Plains region of the United States. The city population is 52,281 (U.S. Census Bureau, 2014) which is a 16.6% increase from the 2000 Census count of 44,831 (City of Manhattan, 2014). Additionally, the metro area of MHK totals about 135,400 people (Forbes, 2014). Major industries include education (Kansas State University), military defense (nearby Ft. Riley U.S. Army Base), and bio-sciences (newly erected National Bio- and Agro-Defense Facility). Forbes ranked MHK as the #3 Best Small Places for Business and Careers and has a projected annual job growth of 1.9%, which gives some confidence to the further development of business such as those related to food systems.

Metropolitan areas, or those with a central city population of 50,000 or more, are the primary drivers of local food systems as they have consistent demand as well as large potential for continued growth and innovation in fruit and vegetable production (Swenson, 2011). MHK and its metropolitan area offers exactly the type of demand that could support and foster growth in a local food system. Since farmers producing at a distance would be less likely to incur higher costs of transportation to sell to metropolitan areas (Swenson, 2011), it is important to pay attention to expansion of production proximal to metro areas, such as MHK. This may translate into the feasibility of using the urban and peri-urban landscape as well as conserving farmland within a certain distance of MHK. To that point, a strong vision of developing a local food system should include fostering rural-urban connections, linking together the needs of urban consumers and local farmers (Feenstra, 1997). With MHK being one of a few metropolitan areas within a mostly rural, agriculture based region, the opportunity is great for fostering urban-rural connections to develop its local food economy while preserving the surrounding agricultural landscape.

The current agriculture surrounding MHK and the dominant agriculture to the state of Kansas in general, could be described as intensive commodity agriculture or what is known as an “agricultural hotspot” (Murdoch, 2000). This term refers to agricultural landscapes which are dominated by large-scale, commodity agriculture, thus, leaving little capacity for the development of specialty food markets and/or more localized food systems (Hinrichs, 2003; Murdoch, 2000). Often times, these types of farms are not interested in making a transition from commodity crops to products that could be readily marketed to local consumers (Schneider and

Francis, 2005). However, there are producers willing to grow crops to sell to local markets and understanding how they prefer to function within a food system (i.e. direct-to-consumer vs. direct-to-institution markets) is important to its development.

In terms of a direct-to-consumer market, MHK offers two summer farmers' markets – a Saturday morning and Wednesday evening market - that operate April-October. In 2011, a winter market was organized to offer sales of local food about once a month between November and April. During the summer season, the market boasts 40-45 vendors on Saturday market and 10-15 vendors at the Wednesday evening market (Downtown Farmer's Market of Manhattan, Inc., 2014). This is the main direct-to-consumer market available to producers wanting to sell products within MHK. Given the population of MHK, the opportunity is large for a producer to develop a CSA program with individual consumers or with groups of employees at one of the many workplaces in MHK, namely Kansas State University.

While there has been great progress in farm-to-school initiatives at the national level, Kansas is still developing networks between local producers and school district food services. There are six school districts noted on the Kansas Department of Education's Farm to School program website that have developed various different types of school garden projects that are used in nutrition education, though none mention the actual sourcing of local products from local farmers – and none of these school districts are within MHK's metropolitan area (KSDE Farm to School, 2009). However, this could be changing as the Kansas Department of Agriculture was a USDA Farm to School grant recipient allowing for eight Kansas schools funds to enhance the sourcing of local products for nutrition programs in 2014 (National Farm to School Network, 2014). Interestingly, the KSDE Farm to School program does not have a definition for local but rather allows that judgment to be made by an individual school citing that “There is no requirement that local grown and locally raised products need to be within a certain area or distance” (KSDE Farm to School, 2009).

Applied Research Methods

Producer Survey

In December 2013, 162 fruit and vegetable farms within Kansas and within a 150 mile driving distance of Manhattan, Kansas (MHK) were identified through on-line databases (ourlocalfoodks.org, localharvest.org, kawrivervalley.org) and through a list of Manhattan

Farmer's Market vendors. Farms whose addresses were located in the nine counties of the Kansas City Metropolitan area were excluded for two reasons: 1) we assumed producers in the Kansas City area already had sufficient markets and 2) we were aware of another project surveying producers in the Kansas City area at the same time. A written producer survey instrument was developed in January 2013.

The survey was mailed out to the 162 farms in early February 2013, following the Tailored Design Method (Dillman, Smyth, & Christian, 2009). This method prescribes a five-contact system to gain at least a 40% return-rate on a mail-out survey. These five-contacts included the following timeline: Day 1) pre-notice letter, Days 3-5) questionnaire/survey mailing with token incentive, Days 10-12) thank you/reminder postcard, Days 21-28) replacement questionnaire/survey for non-respondents, Days 21-28) final contact such as follow-up phone call or email. Our survey included an initial token incentive (a packet of seeds), and farms that returned a completed survey and opted to participate, were put into a drawing for gift cards. Our survey system followed the entire procedure with the exception of the final contact as we had reached a satisfactory return rate after 4 weeks and lacked a consistent way to contact farmers. Of the 162 surveys, 16 were returned as undeliverable giving us an adjusted starting sample of 146. Ninety-two usable surveys were returned giving us a response rate of 63%.

The written survey was titled "Kansas Farmer Survey: A survey to evaluate the perceptions of local food systems and the barriers of marketing to institutions of farmer's within a 150 mile driving distance of Manhattan, KS". Institutions were defined for the survey participants as retail grocers, schools, and hospitals. The survey measured five themes: 1) perceptions of local food and concerns for selling to institutions, 2) marketing and farm operations, 3) selling to institutions in Manhattan, KS, 4) farm characteristics, and 5) demographic data. The first survey theme utilized open-ended, multiple choice, and Likert-type questions to explore producer definitions of local food systems, concerns for selling to institutions, selling under contract with institutions, and preference for selling to MHK institutions. The second survey theme utilized open-ended and multiple choice questions to explore producer usage of direct and institutional markets, methods of marketing, and the types of farm activities completed during a growing season. The third survey theme utilized a Likert-type scale to measure the importance of certain resources producers might need to scale-up their operation to meet the institutional demand of markets in MHK. The fourth theme utilized

multiple choice and open-ended questions to understand the farm scale operated by producer respondents and the type of products produced. The fifth and final theme utilized multiple-choice and open-ended questions to obtain demographic information describing the survey respondent. Responses from Likert-type and multiple choice questions were coded, which means responses were transformed into a standardized form for easy and consistent analysis (Babbie, 2010). Written responses to open-ended questions were coded for manifest and/or latent content - i.e. concrete terms within a response and/or underlying meanings of a response (Babbie, 2010) - to uncover common characteristics survey respondents utilized to describe the themes being examined. This coding process was achieved through QSR NVivo 10 coding software (NVivo Version 10.0200.0, QSR International Pty Ltd 1999-2012, Doncaster, Victoria, Australia). Once coded, descriptive statistics were performed on the survey themes using Microsoft® Excel® 2013 (15.0.4605.1000). Questions for which a producer respondent did not answer completely or fill out correctly were not included in the analysis for that particular question.

Institutional Buyer Interviews

Throughout March and April 2013, personal interviews were conducted with the produce managers of the retail grocery stores in Manhattan, Kansas (MHK). Guptill & Wilkins (2002) developed categories to describe the different types of grocery stores. These grocery store types include:

- Hyperstore: usually a chain grocery store with 100,000 square feet and \$12 million in annual sales of both food – featuring products from major manufacturers – and non-food offerings and services
- Conventional supermarket: can be a part of a chain (>10 stores) or be independently owned (< 10 stores) and sells less than \$12 million in annual sales of food products, mostly from major manufacturers
- “Green” grocery store: a cooperative, proprietorship, partnership, or corporation that features specialty, natural, and organic food and non-food products with a limited number of products from conventional food manufacturers
- Discount grocery store: can be a part of a chain (>10 stores) or be independently owned (< 10 stores) and sells a limited number of items that are priced low based on offerings from overstocks, damaged goods, and traditionally cheap foods

We also included our own category of “Other” to encompass several ethnic food stores that exist in MHK. Utilizing these categories, Table 3.1 outlines the types of grocery stores found in MHK and the ones that our interview included. While MHK has examples of all types of grocery stores we chose to interview stores we felt that local producers would be most apt to sell. At each store, produce managers were interviewed, save one of the independent “green” grocery stores in which case the owner of the store was interviewed. One conventional supermarket denied an interview, but directed us to the corporate office regarding their purchasing policies for local food.

Food service managers were interviewed at three school districts within and nearby MHK. Table 4.2 outlines the number of elementary and secondary schools within these districts and their total student enrollment for the 2013-2014 academic year. The food service purchaser for Kansas State University Dining Services was also interviewed. Dining services at the university includes three dining centers that serve 5000 students that live in campus housing plus visitors, and several retail food outlets such as “convenience stores”, a restaurant, and a bakery/coffee shop (Dept. of Housing and Dining Services, 2014). Finally, the food service manager at Manhattan’s main hospital, Mercy Regional, was also interviewed. Hospital food service operates a main cafeteria for patients, staff, and visitors as well as patient food preparation services.

These interviews were semi-structured and had the objective of understanding institutional perceptions of local food, purchasing protocols, concerns with purchasing produce locally, and preferences for purchasing local products. The interviews were recorded, transcribed, and common themes were identified using QSR NVivo 10 coding software (NVivo Version 10.0200.0, QSR International Pty Ltd 1999-2012, Doncaster, Victoria, Australia).

Results and Discussion

Characterization of Producer Types

After completing initial coding and review of survey data, we established three post-hoc categories of producers to help guide our analysis of perceptions of selling to institutions and resource needs for selling to institutions. Based on the types of products being produced by a survey respondent, we developed categories of Specialty Producers (SPs), Non-Specialty Producers (NSPs), and All Producers (APs). Specialty producers (n=24) are those that identified

their operation as only producing fresh vegetables, fresh fruit, herbs, fruit and/or vegetables for processing, ornamental plants, and/or honey. This definition is in consensus with the USDA definition of specialty crops (USDA-AMS, 2013). Non-Specialty Producers (n=22) were defined as producing no specialty crops per the USDA-AMS definition of a specialty crop. In effect, NSPs are those growing grain crops, producing eggs/dairy, and/or raising livestock for meat such as beef, poultry, pork, and/or lamb/goat. As a note, our definitions of both SPs and NSPs do not include any producers that identified as growing a specialty or non-specialty crop and value-added products. In effect, producers that identified themselves as producing specialty crops, non-specialty crops, and/or value-added crops were considered diversified producers. These more diversified producer types were included in the All Producers (n=92) category, which included all producer respondents (even those identified as SPs and NSPs). In regard to respondents that were more diversified (i.e. not able to be classified as SPs or NSPs), it was simply not possible to determine which aspect of their production they had in mind when answering survey questions regarding selling to institutions. An example of this type of producer is one that identified as producing fresh vegetables, value-added products, and eggs. While this type of producer is extremely valuable to a local food system, their diverse focus in their production makes it difficult to ascertain their point of view as being different from either SPs or NSPs in regards to selling to institutions. The need for clarity in our survey analysis demanded that we focus on comparing SPs and NSPs, with the AP category providing a general basis for comparison.

Comparisons were made by producer category regarding production trends and demographics within the agricultural landscape of local food systems, producer concerns for selling to institutions, and resources needed to scale-up production to meet the demand of institutional markets in Manhattan, Kansas (MHK).

Producer Demographics and Farm Characteristics

Most of the demographic information obtained from the survey is similar to USDA 2012 Ag Census demographic data for Kansas and for the United States (Table 4.3). Average age, ethnicity and race, and years on present farm are similar across producer categories and with the Kansas and United States 2012 Census of Agriculture data. The number of female respondents to our survey varied from the 2012 Census of Agriculture numbers for Kansas and the United States. Half or more of our respondents were female across SPs, NSPs, and All Producers. This

statistic is much higher than the percentage of female primary operators in Kansas and the U.S., which are 11% and 14% respectively. The U.S. Ag Census reports on the primary operator of the farm. We did not specifically ask that the primary operator complete our survey which is a likely explanation for this difference.

In comparing the SPs and NSPs only, it appears that SPs are slightly more diverse in the categories of race and ethnicity. Our survey asked a question about the producer's level of education, for which we have not found 2012 Census of Agriculture data to compare our data with. It appears that all producer groups are fairly well educated with SPs having a higher percentage of producers with an undergraduate degree or higher (this statistic included technical degrees, some post-graduate work, and post-graduate degrees).

Another interesting comparison within the demographic data is the number of years producers have been present on their farming operation. Most SPs have been on their operation 10 years or less while most NSPs have been on their farm operation 10 years or more. Out of all survey respondents, 50% have been on their current operation 10 years or less with the other 50% being on their land 10 or more years. In the 2012 Census of Agriculture data, an overwhelming majority of Kansas producers and producers nationwide have spent 10 or more years on their operation. This reflects the ongoing trend in agriculture of producers getting older with a small minority of young farmers beginning new operations. This simple fact could be detrimental to the growth of farm-to-institution efforts as current farmers are close to retirement, limiting their capacity to scale-up to fulfill the needs of institutional markets. At the same time, there are too few new producers, especially specialty crop producers, to propel the development of farm-to-institution in local food systems. The next section speaks more to this trend as we evaluate characteristics of the land and farming operation.

Production Trends

The crops produced within our survey area are quite diverse within the categories of specialty crops, non-specialty crops, and other/value-added (Figure 4.1). The other/value-added category contains value-added products such as jams and jellies, as well as things like agri-tourism and crops not given as options such as tree nuts, rabbit fryers, and venison to name a few. Overall, the products most grown by All Producers are fresh vegetables, eggs, and fresh fruit respectively.

Most of the producers in our survey area produce specialty crops. This is mostly likely a function of the way in which we initially located these farms through on-line databases that cater to small-scale food producers, which are often times producing some type of specialty crop (Low & Vogel, 2011). Not surprisingly, SPs grow a larger percentage of the specialty crops when compared to APs and NSPs grow a larger percentage of non-specialty crops as compared to APs.

Overall, 48% of producers surveyed are producing 3 to 5 products on their farm and nearly 20% are producing 6 or more products (Figure 4.2). Nearly half of All Producers produced 3 to 5 different types of crops. A common example of this type of producer is one producing fresh fruit or vegetables, a meat product and/or eggs, and a value-added product. Even with 48% of All Producers producing 3 to 5 products, a full one-fifth of APs are specializing in one product type. There is an even larger percentage of SPs and NSPs producing only one product type, 42% and 45% respectively, and over half of each group are producing only 1 or 2 crop types. Crop diversity can be an important tool for small-acreage growers to manage the inherent financial risk in raising crops for profit. That being said, it can be important to the development of local food systems for farmers to specialize in one or two product types in order to meet the volume demands of institutions.

It is also important to recognize that even though a majority of SPs reported producing only 1 or 2 product types, those product types themselves are extremely diverse and labor intensive. For instance, a SP may have reported only producing fresh vegetables, but within that category they may be producing 10 or more different types of vegetables each with their own unique seasonality and set of production requirements.

Farm Size and Economics

Even though many of these farms are diverse in their production, they are doing so on small acreages. This finding is consistent to that of Starr et al. (2003) which found in a survey of Colorado farms, the smaller the farm the more product types they are producing and with greater emphasis placed on sustainable production practices. Figure 4.3 shows the amount of total acres per farm, which was calculated by totaling the number of acres in production and in pasture reported by survey respondents. As the figure shows, most producers are operating on 1 to 9 acres of land. The percentage of SPs operating on 1 to 9 acres is much higher than NSPs, which makes sense as most of our NSPs have larger parcels of land for grazing animals and/or producing grain crops.

Table 4.4 further summarizes the amount of land SPs, NSPs, and APs have in production, pasture, and total acres. Overall, acreage for APs shows that farms in our survey area are mostly small in scale. Data for Kansas from the 2012 Census of Agriculture was available for comparison with some of our total acreage values. As the table shows, the median farm size of producer respondents in our survey area is much smaller than the median for all Kansas farmers – 14 acres for APs compared to 100 acres for all of Kansas. Additionally, the total acreage described by the respondents of our survey is 15,009 acres which represents only 0.03% of the total acreage of farmland reported for Kansas in 2012. This means that a very small portion of agricultural land in Kansas is producing the types of crops able to feed consumers in Manhattan’s food system.

Another way in which we are able to understand the “smallness” of the producer respondents, is in their gross sales for 2012 (Table 4.5). Producers in every category are overwhelmingly small-scale with 65% of both SPs and NSPs grossing less than \$50,000 in 2012. Further, 76% of all producer respondents grossed less than \$50,000 in 2012 which is on trend with the 2012 Census of Agriculture economic classes defined for both Kansas and the United States at large.

To gain a sense of how small the producers are in our survey area, of the 76% of All Producers that grossed less than \$50,000, 75% of them grossed less than \$10,000 in 2012. Moreover, about one-third of SPs and NSPs grossed less than \$2500 in 2012. These percentages are somewhat shocking but not altogether unexpected considering the small acreages on which producers are growing.

Table 4.6 shows the percentage that farm sales contributed to a producer’s total household income in 2012 giving even more perspective on the economic condition of the producers in our survey area. The overwhelming majority of producers in each category reported obtaining 0 to 19% of their total household income from their farm sales. This result along with the total gross sales of our producer respondents leads us to believe that these farmers are not full-time producers and may be farming seasonally or as a hobby for extra income. However, without a clarifying question about whether or not they are receiving off-farm income and/or if they are farming full-time we cannot say with certainty that this is the case. We can say with certainty that no matter the product being produced, these farms are small in economic size,

which may provide a challenge for developing robust farm-to-institution sales in the present local food system.

Farm Products and Markets

Despite the small size of these farms, they are producing diverse products that have the potential to be profitable. To gain a sense of what is being produced in our survey area as well as what producers have found profitable, we asked them to list their top 5 most profitable crops produced in 2012 (Table 4.7).

To speak to the diversity of crops being produced by SPs, even though we have only highlighted the Top 5 most profitable, a total of 59 different crop types were named by survey respondents. For instance, within the category of salad greens, 5 different types of salad greens were named. It is important to recognize the diversity of crops being produced within this food system to show that there is an opportunity for expansion. Also, the sheer fact that a wide range of specialty crops are capable of being grown in Kansas is a positive message for institutions looking to source those types of products locally.

The expansion of the products being grown in the survey area could come in the form of the number of acres devoted to specialty crops and small-scale livestock as well as the development of local markets – both direct-to-consumer and direct-to-institution. Direct-to-consumer markets are those where transactions are carried out directly between farmer(s) and consumers (Martinez et al., 2010). Direct-to-institution markets are those transactions that occur between farmer(s) and restaurants, retail stores, and institutions such as government entities, hospitals, and schools (Martinez et al., 2010). Figures 4.4 and Figure 4.5 show the markets utilized by producers in 2012. “Wholesale” and “Grower’s Co-op” were included with institutional markets, even though they are actually intermediaries in distribution that most often serve institutional markets.

Overall, producers utilized farmers’ markets, grocery stores, and restaurants most often. Three-fourths of SPs favored farmers’ markets while only a little over a third of NSPs utilized this outlet. One quarter of SPs utilized farm stands and/or u-pick sales, direct markets that were used less by NSPs. Surprisingly, 53% of NSPs utilized on-line sales – a percentage that was much higher than percentages for both SPs and APs. On-line sales are an interesting type of direct-to-consumer market, as it cannot be guaranteed that the consumer is actually local to the producer (Martinez et al., 2010). In terms of the percentage of total sales, on average, farmers’

market sales accounted for half of all farm sales by All Producers in 2012 (Figure 4.6). In general, direct-to-consumer outlets provided a greater percentage of total farm sales than did institutional markets. Wholesale markets are a slight exception in that they accounted for over half of the total farm sales, on average, for SPs. Only 25% of SPs (or 4 farms) reported utilizing wholesale markets, but it appears that they are quite lucrative for those farms as compared to other institutional markets and even farmers' markets, the most popular marketing outlet among all survey respondents.

With a high reliance on direct-to-consumer markets for farm sales, it could be difficult for producers in our survey area to find the time to scale-up and sell to institutional markets. Martinez et al., (2010) perfectly alludes to this idea in their publication about local food systems: "The incentive of small farmers to expand and become more efficient is diminished as more time is spent off-farm performing additional entrepreneurial activities such as marketing and farmers' markets." (p. 23)

Altogether, the farms being operated in our survey area are small in scale by both economic and acreage standards and diverse in their product offerings for direct-to-consumer markets, with a focus on fruits and vegetables. This is consistent with the characteristics for local food suppliers outlined by Martinez et al., (2010) that ascertained these producers as being small scale, producing mostly fresh produce versus livestock and other crops, and utilizing mostly direct markets. In comparison to comparable data on Kansas and the United States, the scope of our survey is small but not wholly insignificant. The sheer "smallness" of the operations and producers represented in our survey speak volumes to the nascence of developing local food systems that maintain a level of diversity able to support the needs of direct and institutional markets.

Producer Concerns for Selling to Institutions

To gain an understanding of all producers' perceptions of selling to institutions, we asked them to rate their level of concern for statements regarding different aspects of production, marketing, packaging and transportation, institutional purchasing policy, and certifications. Rating was completed as a 4-point Likert scale with 1 indicating the most concern and 4 indicating no concern. An additional column labeled "N/A" was available for producers to mark if they felt like they had no experience with a statement or if it did not apply to their operation.

Of the usable responses received for this question, 86 were categorized as All Producers (APs) with 23 of those responses being Specialty Producers (SPs) and 19 being Non-Specialty Producers (NSPs). Figure 4.7 shows the 15 concern statements and how All Producers rated them on the scale. The following section discusses differences in concerns among our producer groups more thoroughly.

Comparison among Producer Groups on Concerns for Selling to Institutions

To get a clearer idea of the respondent's highest concerns, we looked at statements that received the highest number of both "Most Concern" and "Some Concern" (the top concern level options from the 4-point scale) – what we consider to be primary and secondary concern respectively. Adding these two rating categories together was termed "Highest Concern", which are summarized for all producer groups in Table 4.8. Even though we have summarized the top three concerns, the top three did not stand out dramatically from the other statements as there are many other concerns for which at least one-third or more of the respondents felt primary and/or secondary concern. For instance, "Do not produce year-round to meet demand" is a concern statement that was a primary and/or secondary concern for 53% of All Producers. Even though this barely missed the top three distinctions, the fact that it elicited high concern for over half of the respondents makes it important to consider.

To determine which statements were of least concern to producers, we added together the "Some Concern" and "No Concern" ratings for each category. Adding these two rating categories together gives us what we consider to be the "Lowest Concern". The top three statements for both the "Lowest Concern" and "N/A" are also summarized in Table 4.8. It is worthwhile to note that even though concern categories were marked by nearly 50% or more of respondents as having little to no concern, many of those same statements elicited high concern with at least one-third or more of respondents. Further, many statements that provided high concern for a majority of producers also elicited low concern for at least one-third of producers.

As a result of concern statements often being split between high concern and low concern, overall concern scores were calculated for each statement and category to see if there was a difference between categories as a whole rather than single concern statements. Concern scores were calculated by taking the mode for the number of ratings assigned to each concern statement by the respondents and then reverse coded giving scores of 0 through 4 (0 representing

no experience or N/A to 4 representing primary concern). Figure 4.8 shows the scores per statement for all producer groups – the higher the score the greater the level of concern assigned by the respondents. Given these concern scores, concern statements for which all producer types felt the highest concern (score of 4) were “Do not produce year-round to meet demand” and “Institutions demand too low of a price for product”.

To concentrate the scores further and give an overall picture of producer concerns, Table 4.9 shows which concern categories received the highest and lowest scores. The higher the concern score, the greater the overall concern for that category (0 representing no experience/none applicable to 4 representing primary concern). This scoring reveals that concerns related to Production/Farm Scale, Packaging and Transport, and Institution Based Issues provided all producers types with the most concern. The Certifications and Marketing concern categories provided the least amount of concern for all producer types.

In considering each of our producer types, we see that they share many of the same concerns for selling to institutions such as schools, hospitals, and retail grocery stores. Based on the category concern scores, both SPs and NSPs, as well as All Producers, rated Production/Farm Scale as providing the highest concern. The statements that prompted the most concern among producer groups in this category are “Do not produce year-round to meet demand” and “Production quantities are too small”. SPs had slightly higher concern with Institution Based Issues than NSPs, though both groups had high concern for two statements within this category: “Institutions demand too low of a price for product” and “Buyers don’t guarantee advanced purchases of product”. Likewise, NSPs rated Packaging & Transport with slightly higher concern than SPs, though both producer groups rated the two statements in this category with mostly primary and secondary concern. The categories of Certifications and Marketing received the lowest concern scores across all producer types.

While the similarities between groups are mostly seen with concern categories, some notable and interesting differences occurred between SPs and NSPs on how they rated certain concern statements. Within the category Production/Farm Scale concerns, 57% of SPs had the most concern for the statement “Do not produce year-round to meet demand”, while only 37% of NSPs had primary and/or secondary concern for the same statement. This could be due to the fact that SPs are the producers that grow fresh fruits, vegetables, and honey so they are most limited by seasonality. The NSPs proved to be mostly meat and/or dairy producers so their

production capabilities are not as limited by the time of year. Along the same lines, SPs had slightly higher concern for the statement “Lack on-farm labor to help meet demand” with 43% of them rating it with primary and/or secondary concern, while only 32% of NSPs rated it with highest concern. This could be due to the fact that fresh fruit and vegetable production requires more labor in many cases than does meat and/or dairy production.

While both SPs and NSPs had low overall concern scores for the Marketing category, there are still some interesting observations between the groups on two concern statements. For the statement, “Not sure how to contact institutions”, 26% of SPs had the highest concern and an additional 35% of SPs had no experience and/or felt like the statement did not apply to their operation. For NSPs, 11% rated this same statement with primary and/or secondary concern while 47% had no experience and/or felt like the statement did not apply to their operation. There are a few different possibilities to explain why a large percentage of producers in each group felt they had no experience with the statement and why SPs felt higher concern than did NSPs. Most SPs are small in scale and may be most reliant on their direct forms of marketing such as farmer’s markets, CSAs or other forms of direct-to-consumer sales. They may not see the necessity of contacting institutions to market their products if they are already doing well with direct sales and/or only have the capacity to fulfill their direct sales. This possibility is interesting considering how producer groups responded to the statement “Not enough local buyers or local interest” within the Marketing category. Fifty-seven percent of SPs and 53% of NSPs had the least concern for this statement. So even though NSPs have no experience or didn’t feel like they had experience or a need to contact institutions with their current operation, they are not concerned with the level of local interest in purchasing locally. That being said, 30% and 42% of SPs and NSPs, respectively, rated “Not enough local buyers or local interest” with the highest concern. So even though many producers are not concerned with the level of local purchasing, there are still a considerable number of producers who feel the opposite.

This dichotomy is even more interesting considering that one of the highest concerns for all producer groups was having production quantities that are too small to sell to institutions. It appears then that our producer respondents understand that selling to institutions may require them to scale up their production capacity to produce larger quantities, but that they may be unwilling because of a perception they have that there is not enough local interest. Or from the opposing angle, they may not be concerned with the robustness of local markets if they have

found success in direct-to-consumer markets, though they lack the quantity to participate in institutional markets. This could be especially true for SPs since compared to NSPs, they mostly sell direct-to-consumer, a marketing strategy that is indicative of small-scale specialty producers (Martinez et al., 2010). Being in closer contact to consumers brings the SPs closer to the groundswell of local food fervor in communities. They may believe that this fervor has value that is translatable into direct-to-institution markets which may or may not be the case for Manhattan institutions or other institutions within our study area.

One category which generally elicited high concern for all producer groups was Institutional Based Concerns. The statement “Institutions demand too low of a price for product” was especially problematic for SPs for which 78% regarded it with the highest concern (58% of NSPs also had highest concern for this statement). In conjunction with the concerns or lack of concern for the Marketing category, such high concerns, based on the institutional side of the food system, provides a basis for much curiosity. What is giving these producers such high concern? Is it perception or experience? For example, out of the 24 producers that we identified as Specialty Producers, 18 responded to a question regarding their 2012 marketing outlets. Twelve producers (66%) of the 18 reported that they sold to farmer’s markets during 2012 while only 6 (33%) reported that they sold to grocery stores (Figure 4.4 and 4.5). Only 5 (28%) of these SPs reported that they sold their product to more than one institution. So how is it that 78% of the SPs (or 18 individual producers) can have such high concern for institutional pricing when not even half of them even sold to an institution in 2012? This same query could be extended to all the Institutional Based concern statements for which both SPs and NSPs regarded with high primary and/or secondary concern.

Resource Needs for Producers to Scale-Up Production to Sell to MHK Institutions

The survey instrument was designed to capture producers that are selling to markets in Manhattan, Kansas (MHK) and/or would like to expand to markets in MHK, with an emphasis on its institutions such as school districts, university dining, retail grocery stores, and hospitals. While we wanted to understand the concerns of selling to institutions of all producer respondents in our survey area, we specifically wanted to understand the needs of producers wanting to sell to MHK institutions and markets. We feel that MHK is a good representative community of metropolitan areas with populations between 50,000 and 100,000 people. To that point, the

concerns for selling to institutions exhibited by our respondents as well as the following resources needed by these producers is surely translatable to food systems of similar size and scope to MHK. To assess the resource needs of producers to scale-up production to sell to MHK institutions, we provided a list of eleven different resources often needed by small producers to scale-up production and asked them to rate their importance on a 4-point scale.

For this section we defined another producer group separate from those producer types utilized in the section regarding concerns for selling to institutions. In the survey, we asked producers to rate the likelihood that they would scale up their production to meet the needs of an institutional buyer that had expressed interest in purchasing local products. Of the 89 responses to this question, 61% said they would be either “Very likely” or “Somewhat likely” to scale-up their production. We also asked farmers to identify whether or not they currently sell in MHK and if they would like to expand to markets in MHK. Of the 61% of respondents that would be likely to scale-up, 41% identified as wanting to expand to markets in MHK. Table 4.10 further summarizes the characteristics of these producers we determined to be most likely to scale-up to support the needs of institutional markets in MHK. As a result, we utilized this producer group to understand the resources needed for farmers to scale-up their production to meet the needs of MHK institutions.

Of the 22 producers identified as wanting to expand to markets in MHK and being likely to scale-up their production to meet institutional demand, 21 answered the question regarding resource needs. The top three resources producers rated as “Very Important” are increased on-farm storage, increased farm infrastructure, and more land (Figure 4.9). Increased on-farm storage would include refrigerated spaces and packing houses or sheds. Increased farm infrastructure would be items such as irrigation materials, high tunnels, and greenhouses. These resources seem logical for producers wanting to increase their production capabilities. However, one will notice that the top three resource needs are not overwhelmingly the most important resources. If we were to add the number of “Very Important” and “Somewhat Important” ratings for each resource, we see that marketing information surpasses the need for more land in level of importance. Additionally, most resources approached 50% of producers rating them as either very or somewhat important. This also means that around 50% of producers felt the same resources were either of little or no importance to scaling-up their production.

As a result of this producer group being mostly diversified growers, it is not surprising that they would have polarized views of the types of resources they find to be most important. This could provide some difficulty to addressing these needs for producers as there is not a “one-size” fits all approach. That being said, this type of information is valuable to understand the types of resources that should be addressed up front for beginning farmers. Since the producers in our survey area are approaching retirement age, there is an immense need for new farmers. Farmer advocacy organizations and Extension services could provide information for accessing resources such as high tunnels or marketing information to both existing and beginning farmers. Improving access to such resources would increase the viability of the small-acreage, diversified farms willing to take part in Manhattan’s food system and, in turn, its institutional markets.

Institutional Buyer Interviews

Table 4.11 summarizes the major topics uncovered in our interviews with grocery store produce managers and food service directors of school districts, university dining, and the hospital within Manhattan, Kansas (MHK). Top concerns for purchasing locally among all institution types include food safety, quality, quantity and price. Top preferences for purchasing locally among all institution types include seasonal products, high product quality, clean and appropriately packaged product, and good communication with producers.

Grocery Stores

Although our producer survey included producers that grow more than fruits and vegetables, we only interviewed produce managers of selected grocery stores located in MHK. The grocery stores we interviewed were essentially two types – conventional supermarket or a locally owned “green” market.

The wholesalers that produce departments most commonly purchased from were located in the Kansas City area (approximately 120 miles east of MHK): Liberty Fruit Co., C&C Produce, AWG, and American Wholesale Foods. The “green” markets reported using other suppliers including Albert’s Organics (Colorado), the Amish Produce Auctions (Kansas), and markets as far away as the Northwest United States. All stores have purchased produce “locally” whether that was from farms near Manhattan, within Kansas, or within the Mid-West. All the grocery stores reported promoting local product when they have it. With the exception of the “green” markets, these promotions occur almost exclusively with in-store displays. For example,

one supermarket purchases seasonally from a producer in MHK and will do a display for them every year in the produce section. All grocery stores reported some level of consumer interest in source of product, but mostly whether or not it is grown in the U.S. or in response to food safety scares (i.e. E. coli outbreaks in melons or spinach). No stores really spoke to a consumer demand for local food.

As far as concerns with purchasing locally, the greatest concern was food safety and appropriate handling. There was also a consensus that the product should be washed, be of uniform ripeness and quality, and arrive in appropriate packing containers. Two stores mentioned the need for appropriate quantity as well, to make it worth both their time and the producer's time. Two grocery stores currently pick up product from farms with their own trucks and would be willing to do so for other farmers if it made sense to fulfill the store's product needs. The other grocery stores were not so sure about going to pick up product, and most preferred that the producer bring the product to the store. With that, no store was particularly interested in the idea of having an additional middle man or wholesaler to purchase local products from. The main reason they cited for this was a likely increase in price. One of the "green" markets thought a local production listing or calendar would be helpful for produce purchasers to find out what local farm has what product, how much of it, at what time of year, and at what cost – essentially a virtual aggregator that allows the store to still purchase directly from the farmer.

All grocery stores preferred having verbal agreements and simply having good communication and trust with a producer they were purchasing from. Two stores talked about the need for a farmer to fill out a form regarding their production practices, but that was the only formal paperwork mentioned throughout all the grocery store interviews.

Overall, grocery stores would like to increase their purchasing of more seasonal produce, especially in the summer, with products like corn, summer squash, melons, tomatoes, green beans, cucumbers, and peppers. One of the "green" markets reported wanting to be able to purchase more berries locally. Three stores did report a desire for more year-round availability of produce, but realized the difficult nature of such production to be consistent given Kansas climate.

To summarize, the common perceptions among grocery stores and local purchasing included: a general willingness to purchase from local farmers; a need for good communication

and trust with farmers; quality produce that arrives clean and appropriately packaged; little interest in a local wholesaler for local foods; and unwillingness to enter formal contracts.

School District and University Dining Services

Current suppliers of the three school district food service programs were: US Foods, EVCO, Sysco, Thompson, F & A, and C & C Produce. Two out of the three school districts use a bid system to order produce, meaning much of their ordering is completed up to 3 months in advance. All schools create “skeleton” menus to begin meal planning up to 6 months in advance, but on average, they define their menus 1-2 months in advance.

All three reported an interest in purchasing locally without budget constraints. However, all three reported wanting product at a good price, in the volume they needed, and at a consistent supply level since they don’t have a lot of room for storage. They would want a producer that communicated well with them and would deliver on specified days. All three school districts felt like their cafeteria staff could handle the culinary preparation needed for fresher product, but would prefer product that did not require a lot of extra washing or preparation. Even though they are interested in seasonal product, all three school districts also reported a concern for the seasonality of Kansas produce, as they do not operate during the summer.

The university dining services reported their current suppliers as being US Foods, Mid-West Sysco, and C & C Produce. They also reported purchasing from a local grower in the summer and early fall. The dining services operates year-round so they would be better able to purchase local produce that is most available in the summer months. They also have flexibility with their menu planning so they can plan around what products are freshest and also least expensive. Though they do purchase some summer crops locally, they found it difficult to find anything local during the winter months. They also reported students being somewhat interested in the sources of products, but not necessarily if it is local or not. Usually requests are made for certain types of products not necessarily from a certain source.

Hospital Food Service

With the hospital, they simply cannot stray from their approved purveyors due to a group purchasing contract with Sodexho. This means that if a producer wanted to sell to the hospital, they would have to go through one of the vendors approved by Sodexho. To do this the producer would have to meet the criteria of that vendor to be one of their suppliers. The hospital did not

say whether or not they would be more likely to purchase local product if it came through one of their approved vendors. Besides the restrictions of their purchasing contract due to food safety, price and quality were the only other factors that they consider when purchasing food for their dining programs.

Overall, among all the MHK institutions interviewed, common themes were: most are not currently purchasing local product but would be interested in seasonal product; some advertised local product with in-store displays; would appreciate consistent communication and deliveries from growers; all institutions used electronic or phone methods of ordering product with current suppliers; would want product to be of high quality, clean, in uniform containers, and at a competitive price; most would prefer the grower to provide delivery; no institution was interested in formal contracts; and most mentioned some level of consumer interest in the source of products.

Discussion

Evaluating the Producers and Institutions in Manhattan's Food System

When taken together, the producer survey and the institutional interviews point to further development in the Manhattan, Kansas (MHK) food system. Currently, only a few small farms within 150 miles of MHK are actually participating in the food system, with most accessing consumers through farmers' markets and institutional selling on a limited basis. Concerns producers had for selling to institutions were all reiterated by the institutions: price, quantity, seasonality, and communication. These concerns are not necessarily unique to this food system but are prevalent in most developing local food systems and direct-to-institution markets (Abatekassa & Peterson, 2011; Dunne et al., 2010; Harris et al., 2012; Visser et al., 2013).

Resources that seem to be lacking for producers are mostly on the production side. They are concerned that their production quantities are too small and the products too seasonal to appeal to Manhattan institutions. This sentiment was echoed in the institutions as they want larger, consistent quantities in-season, and perhaps even year-round. This issue is not a unique finding and one that plagues connections between local producers and institutions in other food systems (Abatekassa & Peterson, 2011). Creating the appropriate relationships between farmers and institutions would be worth pursuing to remedy this barrier. Perhaps creating a cooperative or virtual aggregator network among producers so institutions could see what products are

available, in what amounts, and from what farm would target this barrier. This would maintain the direct farm sale to avoid any issues with paying a middle man. Price for product was a large concern for producers and one that was also found to be a concern for producers, especially as related to logistical costs and transportation, in the study of the food system of Northeastern Kansas by Peterson et al. (2010).

On the part of the institution, communication seemed to be the most vital, as buyers prefer to create trusting verbal relationships with producers that could provide quality product on the buyers terms. A similar conclusion was drawn by Abatekassa & Peterson (2011), in that the success of local foods in retail grocery outlets largely depended on how factors such as trust, reliability and information-sharing effects long-term buying arrangements. Avenues to further connect farmers and institutions should be defined, whether it be a virtual aggregator or a meet-and-greet among produce managers and farmers in the off-season.

An obvious step to strengthen MHK's food system is to support the growth and sale of seasonal items. Even if institutions are unable to purchase locally year-round, they should be encouraged to do so with seasonal, summer produce. This could be streamlined with testing the feasibility of a local seasonal produce calendar or the aforementioned virtual aggregator. Additionally, there is certainly a market for year-round produce with institutions, so increasing producer access to the infrastructure needs to do so (e.g. season extension, greenhouse production) would be worthwhile for the MHK food system as a whole.

Conclusions

Evaluating a food system such as the one supporting Manhattan, Kansas (MHK), within a relatively homogeneous agricultural landscape is an ever evolving process. Though the production landscape may not be producing the specialty crops associated with the localization of food systems, such as fresh fruits and vegetables, this does not mean that the demand is not present. The opportunity is great for existing specialty crop producers and other small farmers within MHK's food system to increase their production capabilities and expand beyond direct-to-consumer markets. These producers may have high concerns for selling to institutions, which is to be expected since they have little experience outside of their direct markets. Selling to a conventional supermarket would be a huge transition for a producer that has only relied on farmers' markets and farm stands to reach consumers. Namely, it will be difficult for these

producers to find the right balance between production quantity and price to make such a transition cost effective.

Institutional buyers within MHK seem to appreciate the quality of product that can be found locally and seasonally. This is a large opportunity for producers to fill that need with the types of products they are already able to produce well. Creating a conversation between institutions and producers over common concerns such as price, quantity, and quality of communication would hopefully provide constructive solutions to develop MHK's food system. Further, this study did not touch on consumer preferences for local food within MHK's food system (beyond reports by institutions of consumers not specifically requesting local items). Gaining further understanding into the consumer perspective on their level of interest in locally produced foods and their preferred markets for purchasing them could certainly guide efforts for developing MHK's food system – whether they are expanding direct-to-consumer or institutional markets.

In the end, this research has led us to question whether or not developing direct-to-institution markets is necessarily the right course for developing MHK's local food system. Producers in our survey were most apt to use direct-to-consumer markets and neither producers nor institutions seemed all that interested in developing a third party connection to facilitate institutional sales. While direct-to-consumer markets have their limitations, they may be the most appropriate match for the type of producer present within MHK's food system. Small-scale farms operated by individuals nearing retirement age do not necessarily provide confidence for the long-term expansion of local production and local markets. Perhaps a greater effort should be put forth into connecting new and beginning farmers to land, providing them with the appropriate training and resources, and connecting them to direct markets or institutional markets from the outset.

Table 4.1 Number of food retailers in Manhattan, KS (MHK) and the number of interviews completed in 2013 regarding institutional perceptions of MHK’s local food system.

Grocery Store Type		Number of Locations in MHK	Number of Interviews
Hyperstores		2	0
Conventional Supermarkets	Chain	3	2
	Independent	2	2
“Green” Grocery Store	Chain	0	0
	Independent	3	2
Discount Grocery Store	Chain	1	0
	Independent	0	0
Ethnic Food Grocery Store		3	0

Table 4.2 School districts in and around Manhattan, Kansas metropolitan area that were interviewed in 2013 regarding perceptions of MHK’s local food system.

School district	# Elementary schools	# Secondary schools	Total student enrollment 2013-2014
Manhattan-Ogden USD 383	9	3	6100
Rock Creek USD 323	2	1	900
Riley County USD 378	1	1	705

Table 4.3 Demographics of survey respondents by producer type^z: Specialty Crop Producers (SPs), Non-Specialty Crop Producers (NSPs), and All Producers, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

	<i>SPs</i>	<i>NSPs</i>	<i>All Producers</i>	<i>Kansas (2012)</i>	<i>United States (2012)</i>
Male	50%	36%	45%	89%	86%
Female	50%	64%	55%	11%	14%
Average Age	54.1	58.9	54	58.2	58.3
Undergraduate degree or higher	71%	48%	63%	n/a	n/a
<i>Race and Ethnicity</i>					
Hispanic/Latino	0%	9%	2%	1%	3%
American Indian or Alaska Native	4%	0%	1%	0.6%	2%
Black or African American	4%	0%	1%	0.3%	2%
White	83%	100%	93%	99%	95%
More than one race reported	8%	0%	5%	0.4%	0.5%
<i>Years on Present Farm</i>					
2 years or less	0%	5%	7%	3%	3%
3 to 4 years	38%	5%	20%	5%	5%
5 to 9 years	21%	23%	23%	12%	14%
10+ years	42%	68%	50%	80%	78%

^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

Table 4.4 Summary of acres in production, pasture, and total acreage for All Producers (APs), Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

	<i>SPs</i>	<i>NSPs</i>	<i>All Producers</i>	<i>Kansas (2012)</i>
Average # acres in production	13.0	123.0	91.5	n/a
Average # acres in pasture	10.3	191.3	81.0	n/a
Average # of total acres	5.0	363.9	172.5	747
Median # of total acres	2	100	14	200
Total Production Acres	313.2	2707	7963.5	n/a
Total Pasture Acres	247	4208	7045.8	n/a
Total Acreage	560.2	6915	15009.3	46,137,295

^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

Table 4.5 2012 economic classes of All Producers (APs), Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

	<i>Specialty Crop Producers (N=23)^y</i>		<i>Non-Specialty Crop Producers (N=20)^y</i>	<i>All Producers (N=84)^y</i>	<i>Kansas (2012)</i>	<i>United States (2012)</i>
<i>Small-scale: < \$50,000</i>	65%		65%	76%	86%	75%
	< \$2,500	39%	31%	29%		
	\$2,500-9,999	13%	39%	28%		
	\$10,000-19,000	4%	15%	8%		
	\$20,000-49,999	9%	15%	10%		
<i>Mid-size: \$50,000-\$249,000</i>	26%		25%	17%	14%*	13%
<i>Large scale: \$250,000 or more</i>	9%		10%	7%	*Data represents farms grossing \$50,000 or more	12%

^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

^y There was one Specialty Crop Producer, two Non-Specialty Crop Producers, and eight All Producers that were non-respondents to the survey question for which this data was compiled.

Table 4.6 Percentage 2012 farm income contributed to total household income for All Producers (APs), Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

	<i>SPs (N=23)^y</i>	<i>NSPs (N=22)</i>	<i>All Producers (N=88)^y</i>
0-19%	78%	55%	67%
20-39%	5%	18%	15%
40-59%	0%	4%	1%
60-79%	4%	5%	5%
80-100%	13%	18%	12%

^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

^y There was one Specialty Crop Producer and four All Producers that were non-respondents to the survey question for which this data was compiled.

Table 4.7 Most profitable crops reported for 2012 by All Producers (APs), Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

<i>Top Five Most Profitable</i>	#1	#2	#3	#4	#5
SPs	Tomato	Tomato; Salad greens	Salad greens	Squash/Pumpkin	Tomato
NSPs	Beef	Poultry	Poultry; Grain crops	Eggs and Dairy	Sheep/Lamb/Goat; Poultry; Grain
APs	Tomato	Small fruits	Salad greens	Eggs and Dairy	Squash/Pumpkin; Other Veg
<i>Top Five Overall</i>	#1	#2	#3	#4	#5
SPs	Salad greens	Tomato	Melons and Cucumbers	Small Fruits; Other Veg	Squash and Pumpkins
NSPs	Grain crops	Poultry; Eggs and Dairy	Beef	Other Meat	Pork
APs	Tomato	Salad greens	Small fruits; Other Veg	Eggs and Dairy; Grain Crops	Tree Fruits and Nuts

^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

Table 4.8 Comparison of highest and lowest concerns for selling to institutions by All Producers, Non-Specialty Crop Producers, and Specialty Crop Producers^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

“Highest Concern” Top Three					
All Producers		Specialty Producers		Non-Specialty Producers	
Institutions demand too low of a price for product	66%	Institutions demand too low of a price for product	78%	Production quantities are too small	68%
Production quantities are too small	65%	Production quantities are too small	65%	Costs associated with transportation for delivery	63%
Cost associated with transportation for delivery	56%	Do not produce year-round to meet demand <i>AND</i> Institutions want uniform boxes and/or packaging (tie)	57%	Institutions demand too low of a price for product <i>AND</i> Buyers don’t guarantee advanced purchases of product (tie)	58%
“Lowest Concern” Top Three					
All Producers		Specialty Producers		Non-Specialty Producers	
Not enough local buyers or local interest	53%	Do not have GAP certification <i>AND</i> Not enough local buyers or local interest (tie)	57%	Don’t have time to contact institutions	58%
Don’t have time to contact institutions	51%	Don’t have time to contact institutions <i>AND</i> Buyers want product liability insurance (tie)	52%	Lack on-farm labor to help meet demand <i>AND</i> Not enough local buyers or local interest (tie)	53%
Buyers want product liability insurance	47%	Lack on-farm labor to help meet demand	48%	Institutions want uniform boxes and/or packaging	47%
“N/A” Concern Top Three					
All Producers		Specialty Producers		Non-Specialty Producers	
Not sure how to contact institutions	39%	Not sure how to contact institutions	33%	Not sure how to contact institutions	47%
Off-farm job takes ups time needed to expand operation	24%	Off-farm job takes up time needed to expand operation	25%	Buyer contracts are too stringent and/or lack escape clauses	24%
Buyer contracts are too stringent and/or lack escape clauses	24%	Buyers want product liability insurance	21%	Buyers want product liability insurance <i>AND</i> Do not have GAP certification (tie)	26%

^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

Table 4.9 Concern scores by category for selling to institutions by All Producers (APs), Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS. A score of 0 represents no experience or N/A with the concern category while a score of 4 represents primary concern for that concern category.

<i>Concern Category</i>	<i>AP</i>	<i>SPs</i>	<i>NSPs</i>
Production/Farm Scale	4	4	4
Marketing	1	1	2
Packaging and Transport	4	3	4
Institution Based Issues	3	4	3
Certifications	1	1	1

^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

Table 4.10 Characteristics of producers^z wanting to expand to markets in Manhattan, KS (MHK) that are likely to scale-up to meet needs of institutions (n=22)^y, from a survey of Kansas producers found within a 150 mile distance of MHK.

Did not sell in MHK in 2012	41%	
Sold in MHK in 2012	59%	
Median Total Acreage	8 acres	
Average Total Acres	96 acres	
% Grossing < \$50,000	64%	
Specialty Producers	18%	
Non-Specialty Producers	18%	
Diversified Producers	64%	
Top Three Specialty Crops	Fresh Vegetables	73%
	Fresh Fruit	45%
	Herbs	41%
Top Three Non-Specialty Crops	Eggs	36%
	Grains AND Lamb/Goat (tie)	27%
	Poultry	18%

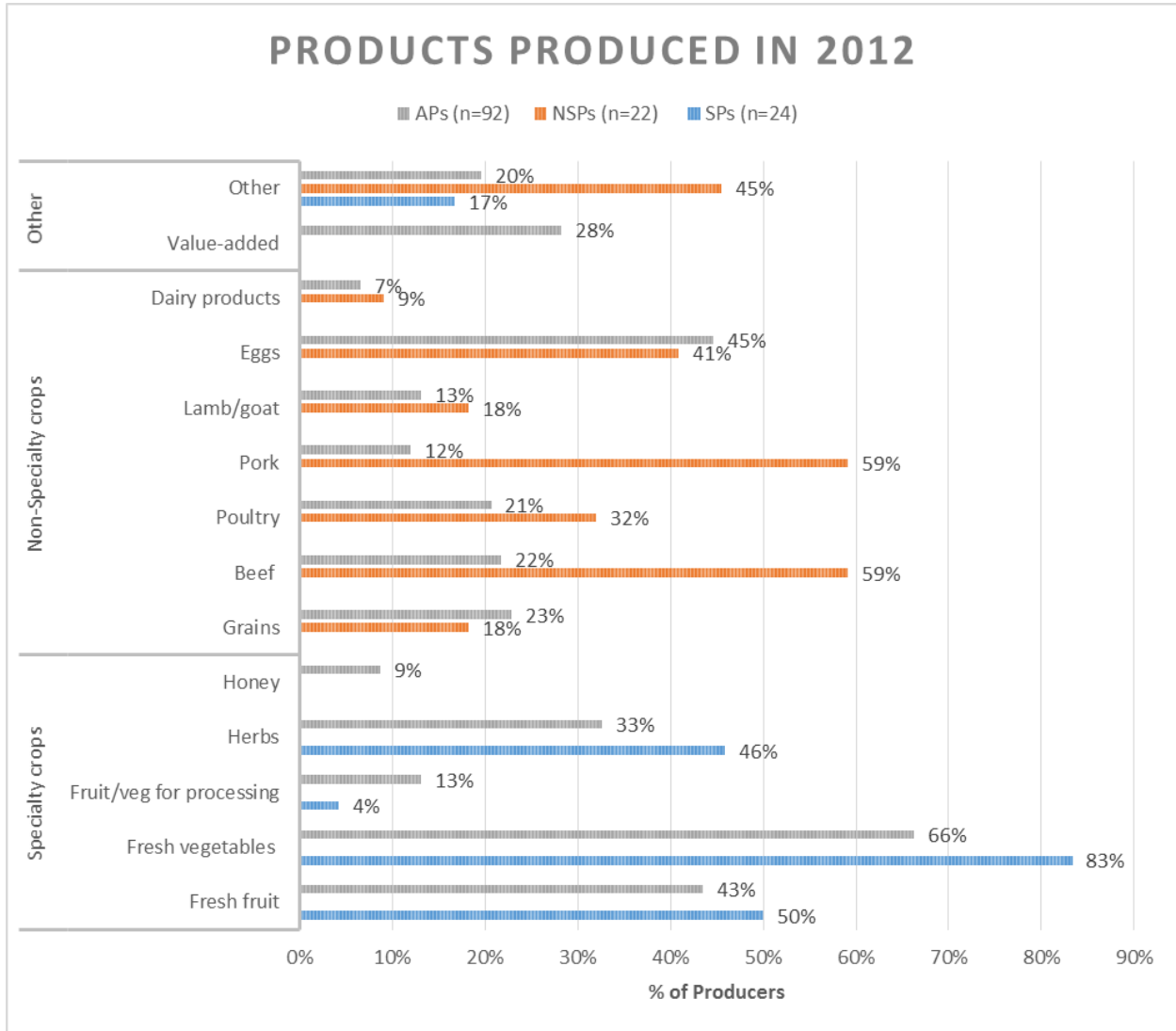
^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

^y There was 70 producer respondents that did not indicate wanting to expand to MHK markets and did not indicate a likelihood to sell to institutions.

Table 4.11 Summary of the preferences, concerns, and protocols of produce and food service managers interviewed from Manhattan, KS (MHK) institutions, from interviews performed in 2013 regarding institutional perceptions of MHK’s local food system.

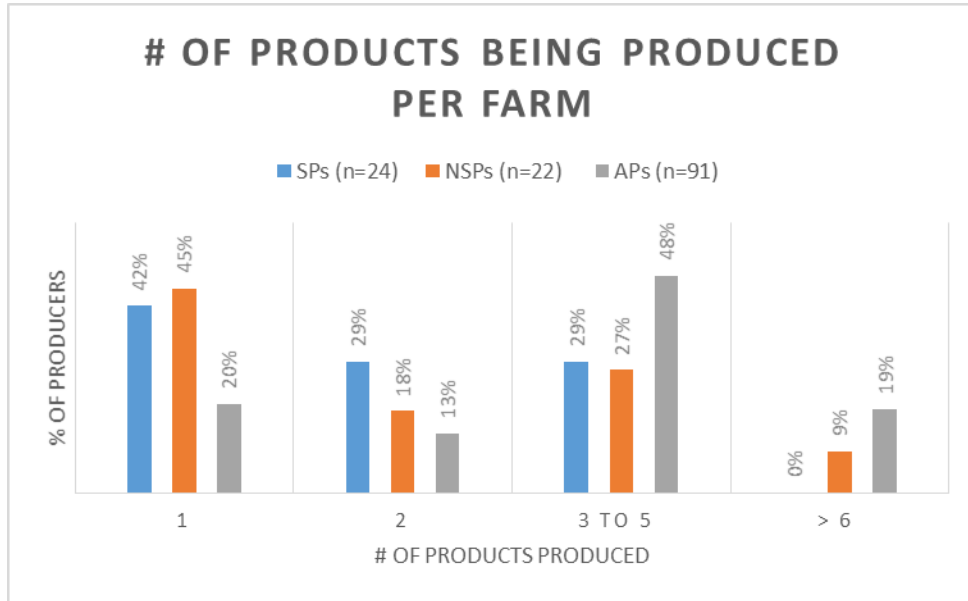
	Conventional supermarkets	“Green” grocery store	School Districts and University Dining	Hospital
% Interviewees that had sourced locally	100%	100%	50%	0%
Top concerns for purchasing locally	- Food safety - Quality	- Quality - Year-round consistency	- Quantity - Price - Labor involved in prepping fresh product - Good communication	- Food safety - Price - Quality
Preferences for local purchasing	- Seasonal products - Good communication	- Standardized packing -Uniform quality -Good communication - Local branding	- Easy pick-up/delivery - Low price - High quality - Guaranteed quantity - Seasonal products	- No preferences: cannot purchase outside approved purveyors
Primary ordering method	Electronic through warehouse	Electronic or telephone	Electronic through wholesalers	Electronic through wholesalers
Interested in local food aggregator for MHK	0%	0%	0%	0%

Figure 4.1 Products produced in 2012 by All Producers (APs), Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

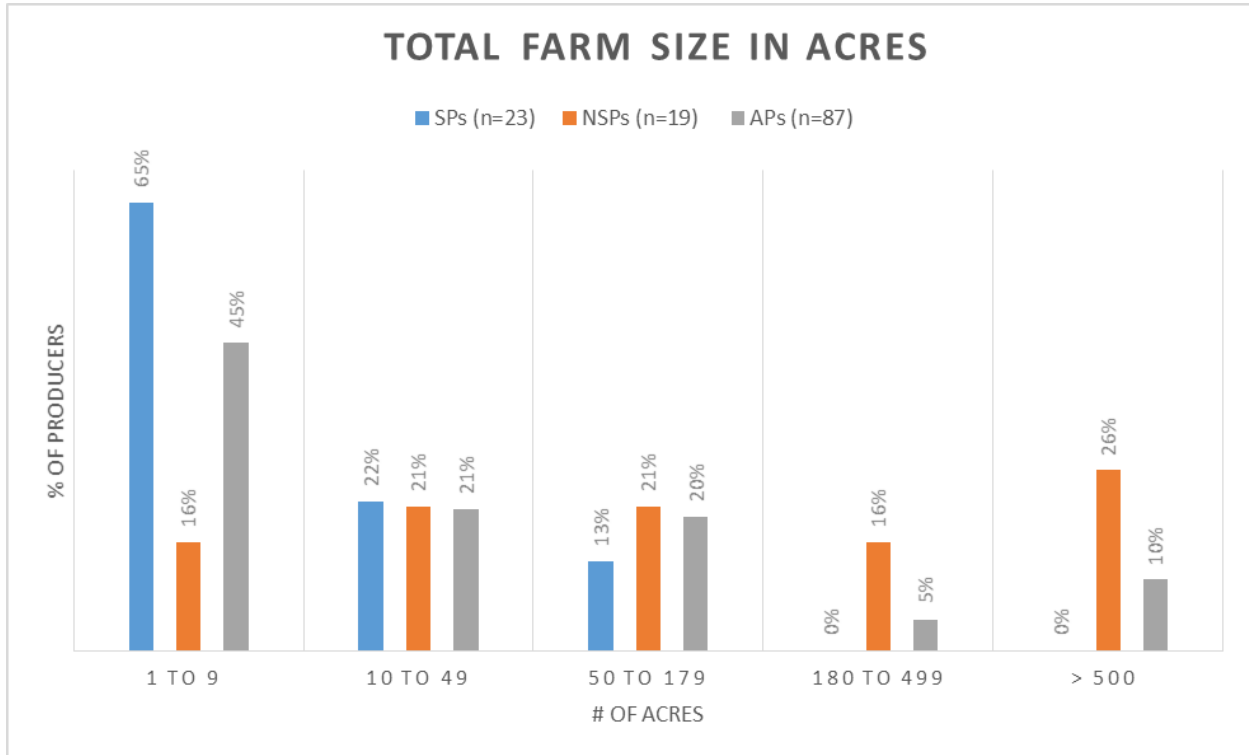
Figure 4.2 Number of products being produced per farm in 2012 by All Producers (APs)^y, Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both spe y

^yThere was one All Producer that was a non-respondent to the survey question for which this data was compiled.

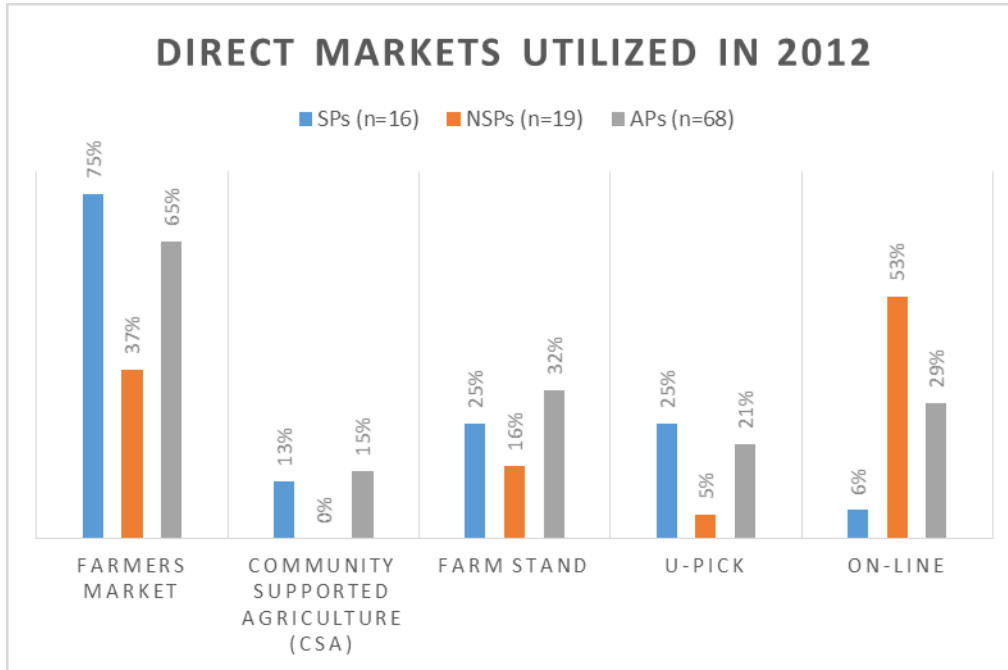
Figure 4.3 2012 total farm acres for All Producers (APs)^y, Non-Specialty Crop Producers (NSPs)^y, and Specialty Crop Producers (SPs)^{zy}, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

^yThere was one Specialty Crop Producer, three Non-Specialty Crop Producers, and five All Producers that were non-respondents to the survey question for which this data was compiled.

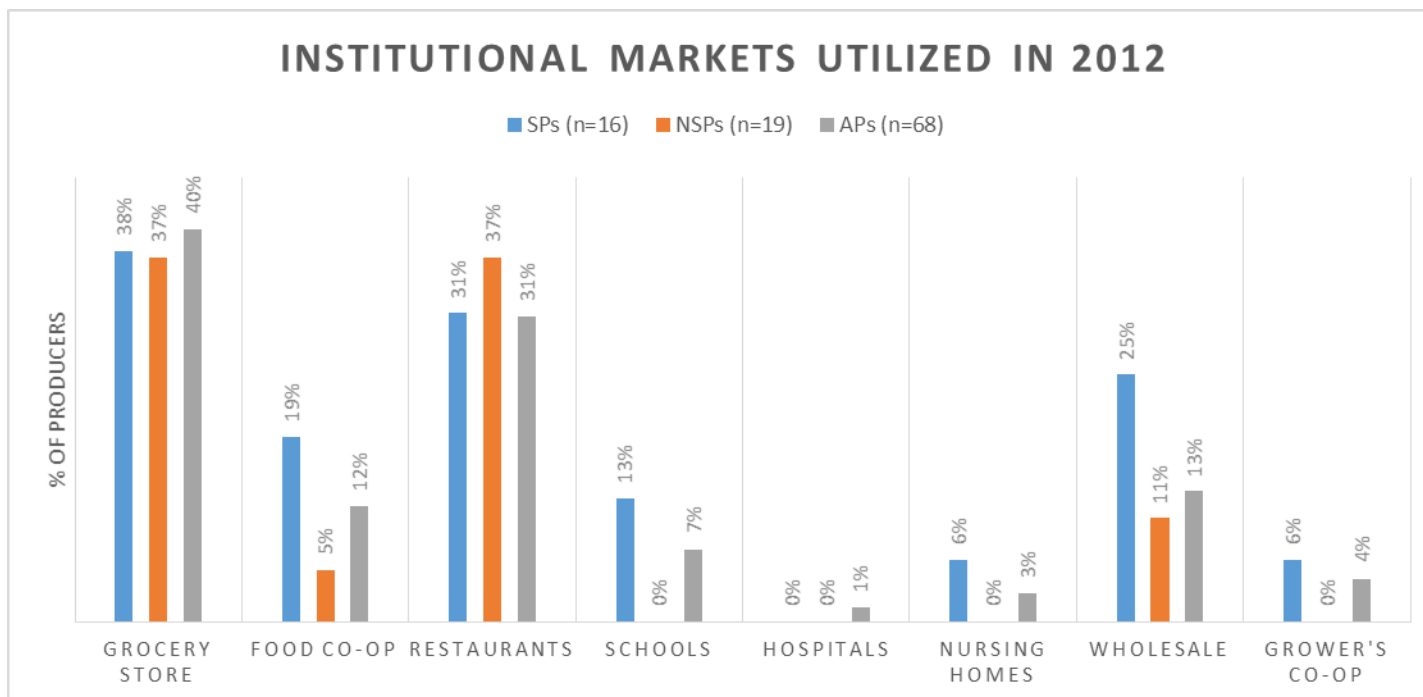
Figure 4.4 Direct-to-consumer markets utilized in 2012 by All Producers (APs)^y, Non-Specialty Crop Producers (NSPs)^y, and Specialty Crop Producers (SPs)^{zy}, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

^yThere were eight Specialty Crop Producers, three Non-Specialty Crop Producers, and 24 All Producers that were non-respondents to the survey question for which this data was compiled.

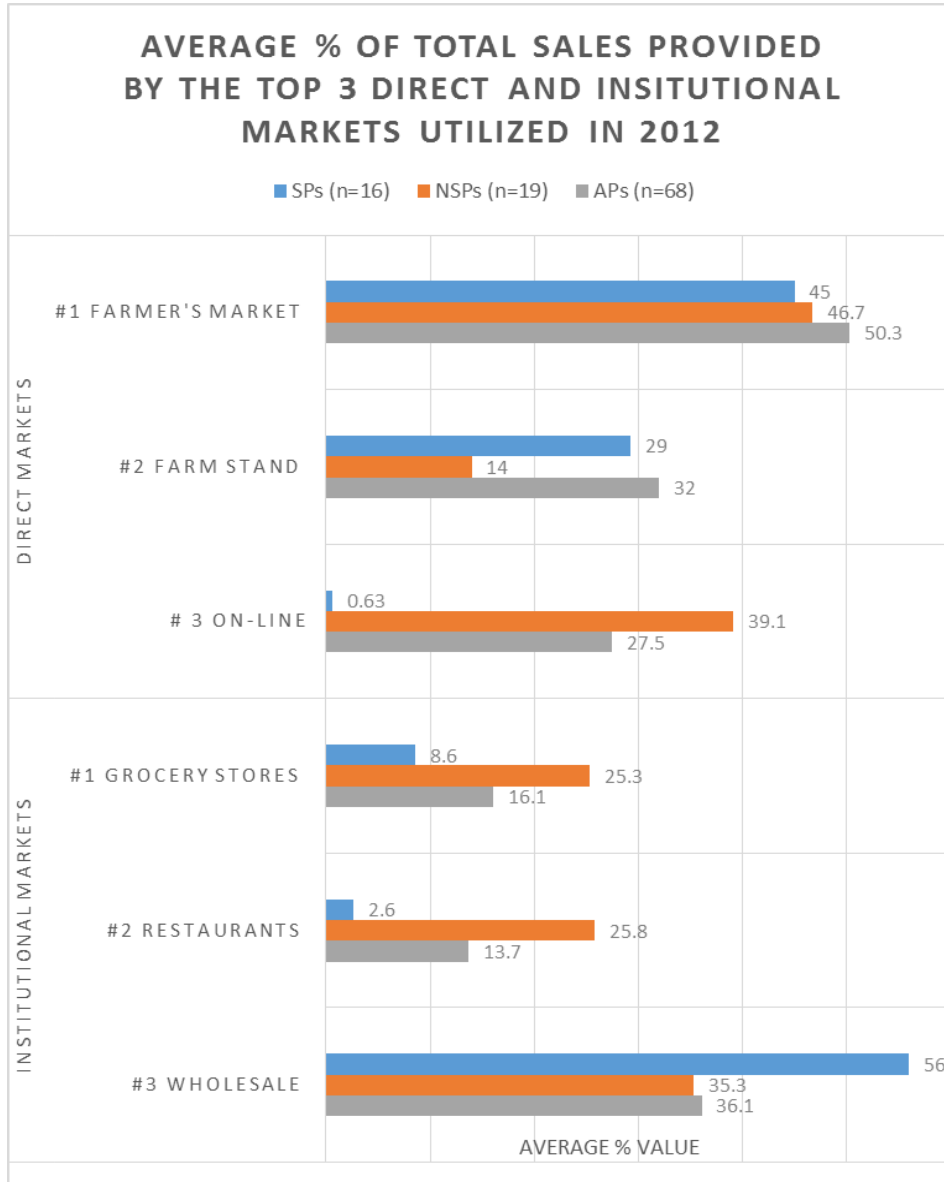
Figure 4.5 Direct-to-institution markets utilized in 2012 by All Producers (APs)^y, Non-Specialty Crop Producers (NSPs)^y, and Specialty Crop Producers (SPs)^{z,y}, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

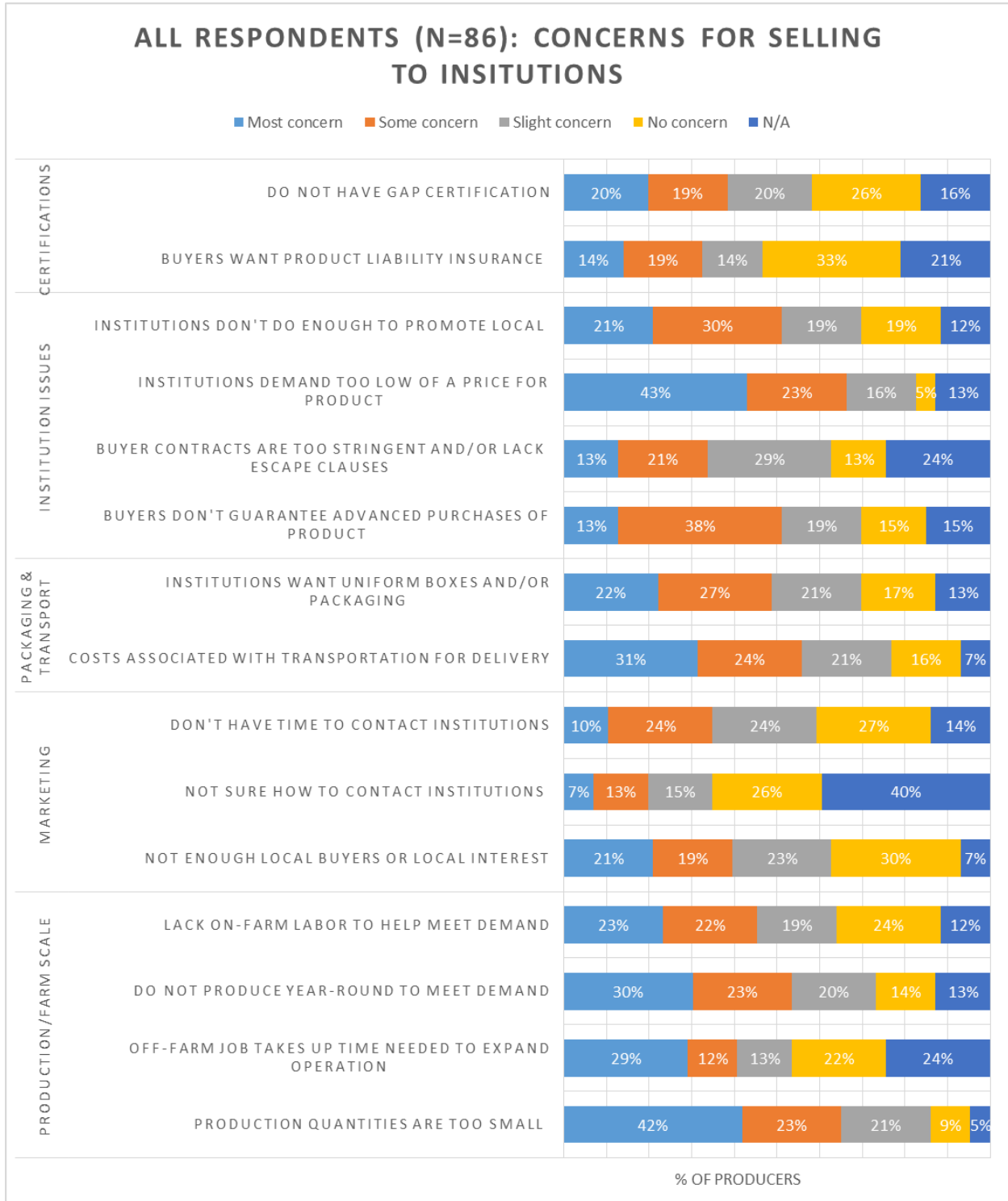
^y There were eight Specialty Crop Producers, three Non-Specialty Crop Producers, and 24 All Producers that were non-respondents to the survey question for which this data was compiled.

Figure 4.6 Average percentage of total sales provided by the top three direct and institutional markets utilized in 2012 by All Producers (APs), Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



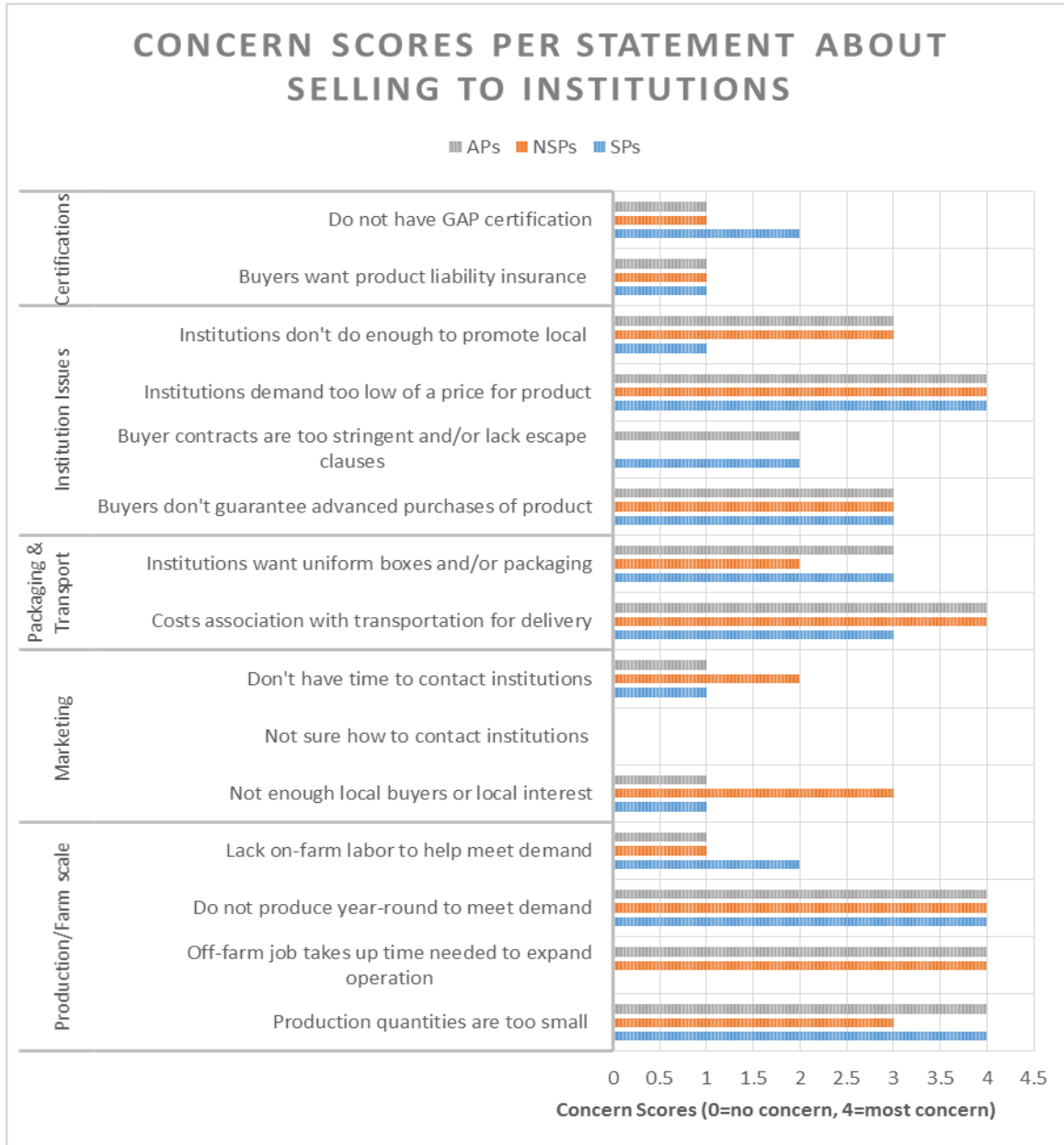
^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

Figure 4.7 Ratings of concerns for selling to institutions by all survey respondents^y, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



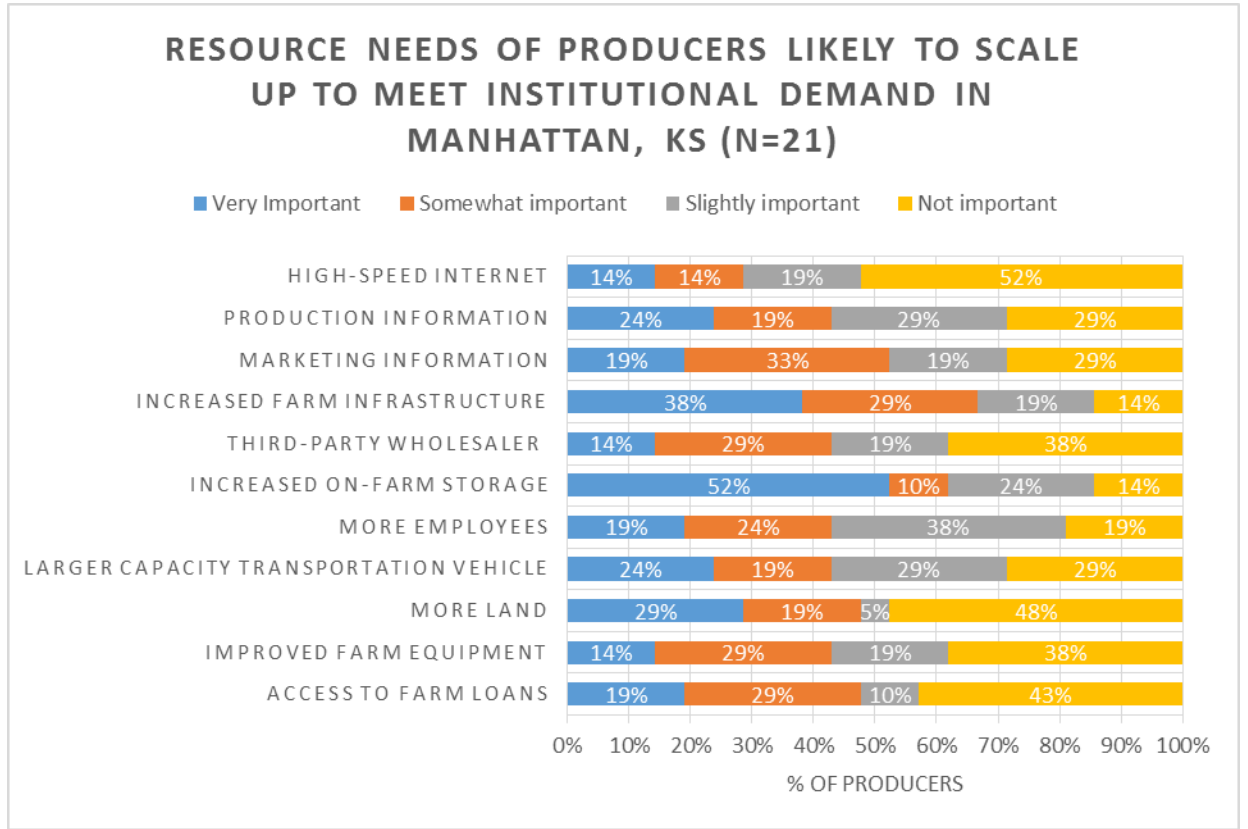
^yThere were six non-respondents to the survey question for which this data was compiled.

Figure 4.8 Concern scores per statement about selling to institutions for All Producers (APs), Non-Specialty Crop Producers (NSPs), and Specialty Crop Producers (SPs)^z, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

Figure 4.9 Importance of resources needed by producers indicating they are likely to scale-up to meet institutional demand and would like to expand to Manhattan, KS (MHK) markets, from a survey of Kansas producers^y found within a 150 mile distance of MHK.



^yThere were 71 producer respondents that indicated that they would not be likely to scale-up to meet institutional demand and indicated that they would not like to expand to MHK markets.

Chapter 5 - Producer Demographics and Farm Characteristics

In acknowledgement of the sheer information gathering power of surveys, this chapter is devoted to describing the producer respondents of our survey and the land that they farm. It would be negligent to the idea of evaluating the food system of Manhattan without giving a full summary of those producers at its base. Of the 162 surveys mailed to Kansas farms within our survey area, 16 were returned as undeliverable, and 92 usable surveys were returned giving us a response rate of 63%. It is from these 92 surveys that the following data on producer demographics and farm characteristics are based. Where applicable, we compared demographic data against USDA 2012 Census of Agriculture Data (USDA-NASS, 2014) for both Kansas and the United States.

All Producer Demographics

Table 5.1 summarizes demographic data for our producer respondents as well as data for Kansas and the United States. Our survey instrument did not explicitly require the primary operator of the farm to fill out the survey, whereas the Census of Agriculture does. As a result, we attribute this as reason for 55% of our survey respondents being women. We cannot say with certainty that they are or are not the primary operator of the farm. Our survey respondents were slightly younger than the average ages reported for Kansas and the United States. Additionally, our survey respondents were slightly more racially and ethnically diverse as compared to Kansas farmers as a whole, but still predominately White and Non-Hispanic/Latino. Another notable difference is that half of our survey respondents had been present on their current operation for 10 years or more, much lower than the percentage for all of Kansas at 80%. Moreover, this means that 50% of our survey respondents have been present on their farm operation for 9 years or less, a percentage much higher than both Kansas and the United States.

Of our producer respondents, 3 out of 4 grossed less than \$50,000 in 2012 classifying them as small-scale farms. Of those producers over half grossed less than \$10,000. The percentage of small-scale, mid-sized, and large farms within our survey respondents is comparable to percentages for both Kansas and the United States. Figure 5.1 shows what percentage of a farm's gross sales contributed to the total household income in 2012. Sixty-seven percent of the respondents identified as only receiving 0-19% of their total household income

from their farming operation. Together with gross sales, this indicates that these producers are not only small-scale, but that these operations are most likely secondary sources of income, with most income being provided by an off-farm job. That being said we cannot say with certainty that this is the case as our survey did not explicitly ask whether or not the respondent held an off-farm job and/or if the farming operation is their primary source of income.

Post-Hoc Producer Groups

Within the survey data, we developed several different producer types post-hoc based on the products that they identified as producing in 2012 or if they identified as currently selling to markets in Manhattan or not (Table 5.2). These producer groups became necessary to parse out any differences in perceptions for local food, concerns for selling to institutions, and resources needed to scale-up production to meet institutional demand in Manhattan. The following chapters will discuss these differences further.

The first set of producer types was based on the products they identified as selling in 2012. The producer types are Specialty Producers (SPs), Non-Specialty Producers (NSPs), and All Producers (APs). Specialty producers (n=24) are those that identified their operation as only producing fresh vegetables, fresh fruit, herbs, fruit and/or vegetables for processing, ornamental plants, and/or honey. This definition is in consensus with the USDA definition of specialty crops (USDA-AMS, 2013). Non-Specialty Producers (n=22) were defined as producing no specialty crops per the USDA-AMS definition of a specialty crop. In effect, NSPs are those growing grain crops, producing eggs/dairy, and/or raising livestock for meat such as beef, poultry, pork, and/or lamb/goat.

As a note, our definitions of both SPs and NSPs do not include any producers that identified as growing a specialty or non-specialty crop and value-added products. In effect, producers that identified themselves as producing specialty crops, non-specialty crops, and/or value-added crops were considered diversified producers. These more diversified producer types were included in the All Producers (n=92) category, which included all producer respondents, even those identified as SPs and NSPs. In regard to respondents that were more diversified (i.e. not able to be classified as SPs or NSPs), it was simply not possible to determine which aspect of their production they had in mind when answering survey questions regarding selling to institutions. An example of this type of producer is one that identified as producing fresh

vegetables, value-added products, and eggs. While this type of producer is extremely valuable to a local food system, their diverse focus in their production makes it difficult to ascertain their point of view as being different from either SPs or NSPs in regards to selling to institutions. The need for clarity in our survey analysis demanded that we focus on comparing SPs and NSPs, with the AP category providing a general basis for comparison.

The second set of producer types was based on whether a survey respondent identified as selling to Manhattan markets and/or wanting to expand to markets in Manhattan with the contrasting type being a producer who identified as not selling to Manhattan markets in 2012 and not wanting to expand to markets there. Out of the 92 surveys, 90 appropriately answered a question about whether or not they sold to Manhattan markets in 2012 and whether or not they would like to expand. Out of these 90, 21 producers were identified as currently selling to Manhattan markets (MHK Sellers) and 69 farmers were identified as not currently selling to Manhattan markets (Non-MHK Sellers). Within MHK Sellers, 17 identified as wanting to expand their sales within Manhattan markets, while 4 identified as not wanting to expand. Within Non-MHK Sellers, 13 identified as wanting to expand their sales to Manhattan markets. Figure 5.2 depicts this breakdown of producer respondents.

For the most part, the demographics of our post-hoc producer groups are similar to each other with a few notable exceptions regarding SPs (Table 5.2). SPs are more educated than NSPs, with 71% and 48%, respectively, having earned an undergraduate degree or higher. Additionally, SPs are slightly more racially and ethnically diverse with only 83% reporting as being White – all other producer groups are 93-100% White. SPs have also spent less time on their current operation with 38% being present on their farm for only 3-4 years at the time of the survey – only 5% of NSPs reported being on their farm for this amount of time with 68% reporting being on their farms for 10 years or more.

Farm Characteristics, Marketing, and Operations

Not only are the farms within our survey small in economic scale, they are small in acreage. Table 5.3 details the amount of acreage devoted to production, pasture, as well as total acreage (production + pasture) for specialty crop producers (SPs), non-specialty crop producers (NSPs), all producers, and USDA 2012 Census of Ag data for Kansas. SPs have the smallest parcels of land in total acreage as half of these producers operate on less than 2 acres. NSPs

operate on larger parcels of land most likely due to their production of animal products and grain crops which require larger acreages of land. Overall, the farms of our producer respondents were small compared to farms across Kansas. The median total acreage for all producers was 14 acres while it is 200 acres for Kansas farmers. In terms of total acreage, the land described by our survey amounts to 15,009 acres which is 0.03% of the total agricultural land captured by the 2012 Census of Ag for Kansas.

Despite the small scope of our survey based on acreage, the farms in our survey are diverse in their product offerings and markets. Figure 5.3 shows the different types of products represented by our survey. The top three crops produced were fresh vegetables, eggs, and fresh fruit, respectively. Nearly half of our survey respondents indicated that they were producing 3 to 5 different products on their farm operation (Figure 5.4). That being said, 1 in 5 producers indicated that they were only producing one type of product. However, if that product was fresh vegetables, that producer was likely producing several different varieties of vegetables, each with their own production and handling requirements. Table 5.4 gives some sense to this diversity as respondents were asked to list their top five most profitable crops in 2012.

The respondents of our survey utilized both direct-to-consumer and direct-to-institution markets in 2012. Figures 5.5 and 5.6 show which markets were utilized by what percentage of specialty crop producers (SPs), non-specialty crop producers (NSPs), and all producers (APs) in 2012. We included “Wholesale” and “Grower’s Co-op” within the institutional markets category even though they are technically intermediaries that will often service institutional markets. The most popular direct markets utilized were farmers’ markets, farm stands, and on-line sales. The most popular institutional markets were grocery stores, restaurants, and wholesale.

Finally, Figure 5.7 depicts the number of people employed by respondents’ farm operations in 2012. Only 1 in 5 farms employed at least one full-time, year-round employee. Forty percent of respondents utilized 2 to 10 unpaid volunteers and it appears that in general, most farms relied on seasonal employees.

Table 5.1 Demographics of producer survey respondents (from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS) compared to Kansas producers and United States producers (from the USDA 2012 Census of Agriculture).

	<i>All Producers</i>	<i>Kansas</i>	<i>United States</i>
Male	45%	89%	86%
Female	55%	11%	14%
Average Age	54	58.2	58.3
Undergraduate degree or higher	63%	n/a	n/a
<i>Race and Ethnicity</i>			
Hispanic/Latino	2%	1%	3%
American Indian or Alaska Native	1%	0.6%	2%
Asian	0%	0.1%	0.6%
Black or African American	1%	0.3%	2%
Native Hawaiian or Other Pacific Islander	0%	0.03%	0.07%
White	93%	99%	95%
More than one race reported	5%	0.4%	0.5%
<i>Years on Present Farm</i>			
2 years or less	7%	3%	3%
3 to 4 years	20%	5%	5%
5 to 9 years	23%	12%	14%
10+ years	50%	80%	78%
<i>Farm economic classes based on 2012 gross sales</i>			
Small scale: < \$50,000			
< \$2,500	29%	76%	86%
\$2,500-9,999	28%		
\$10,000-19,000	8%		
\$20,000-49,999	10%		
Mid-size: \$50,000 - \$249,000	17%	14%*	13%
Large scale: \$250,000 or more	7%	* Data represents farms grossing \$50,000 or more	12%

Table 5.2 Summary of demographics for post-hoc producer groups: Specialty Crop Producers (SPs), Non-Specialty Crop Producers (NSPs), All Producers, Manhattan, Kansas (MHK) Sellers and Non-MHK Sellers, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

	<i>SPs (N=24)</i>	<i>NSPs (N=22)</i>	<i>All Producers</i>	<i>MHK Sellers</i>	<i>Non- MHK Sellers</i>
Male	50%	36%	45%	43%	45%
Female	50%	64%	55%	57%	55%
Average Age	54.1	58.9	54	54.5	53.8
Undergraduate degree or higher	71%	48%	63%	62%	63%
<i>Race and Ethnicity</i>					
Hispanic/Latino	0%	9%	2%	5%	1%
American Indian or Alaska Native	4%	0%	1%	0%	6%
Asian	0%	0%	0%	0%	0%
Black or African American	4%	0%	1%	0%	1%
Native Hawaiian or Other Pacific Islander	0%	0%	0%	0%	0%
White	83%	100%	93%	100%	94%
More than one race reported	8%	0%	5%	0%	4%
<i>Years on Present Farm</i>					
2 years or less	0%	5%	7%	0%	9%
3 to 4 years	38%	5%	20%	14%	22%
5 to 9 years	21%	23%	23%	19%	24%
10+ years	42%	68%	50%	67%	47%
<i>Farm economic classes based on 2012 gross sales</i>					
Small scale: < \$50,000	65%	65%	76%	45%	86%
Mid-size: \$50,000- \$249,000	26%	25%	17%	30%	13
Large scale: \$250,000 or more	9%	10%	7%	25%	2%

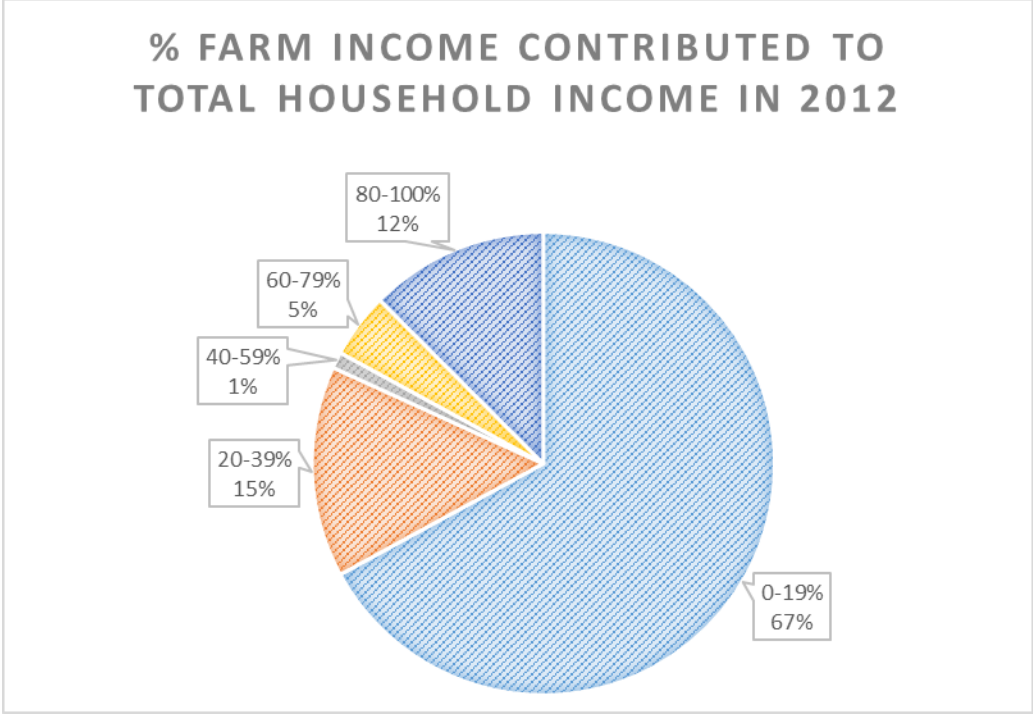
Table 5.3 Size of farms based on acreage for Specialty Crop Producers (SPs), Non-Specialty Crop Producers (NSPs), and All Producers, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

	<i>SPs</i>	<i>NSPs</i>	<i>All Producers</i>	<i>Kansas (2012)</i>
Average # acres in production	13.0	123.0	91.5	n/a
Average # acres in pasture	10.3	191.3	81.0	n/a
Average # of total acres	5.0	363.9	172.5	747
Median # of total acres	2	100	14	200
Total Production Acres in survey area	313.2	2707	7963.5	n/a
Total Pasture Acres in survey area	247	4208	7045.8	n/a
Total Acreage in survey area	560.2	6915	15009.3	46,137,295

Table 5.4 Top five most profitable crops in 2012 indicated by all survey respondents (N=42), from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

	#1	#2	#3	#4	#5
<i>Top Five Most Profitable</i>	Tomato	Small fruits	Salad greens	Eggs and Dairy	Squash/Pumpkin; Other Vegetables
	#1	#2	#3	#4	#5
<i>Top Five Overall</i>	Tomato	Salad greens	Small fruits; Other Vegetables	Eggs and Dairy; Grain Crops	Tree Fruits and Nuts

Figure 5.1 Percentage gross farm sales contributed to total household income for survey respondents in 2012 (N=88)^y, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.



^yThere were four non-respondents to the survey question for which this data was compiled

Figure 5.2 Outline of the number of producer respondents currently selling agricultural products in Manhattan, Kansas (MHK), not selling in MHK, and producers that would like to expand sales or not expand sales to MHK, from a survey of Kansas producers found within a 150 mile distance of MHK.

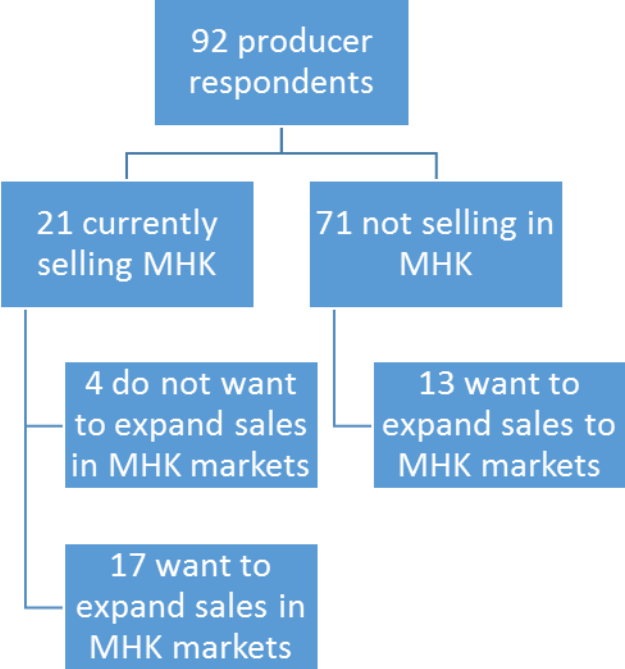


Figure 5.3 Types of products produced in 2012 by survey respondents from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

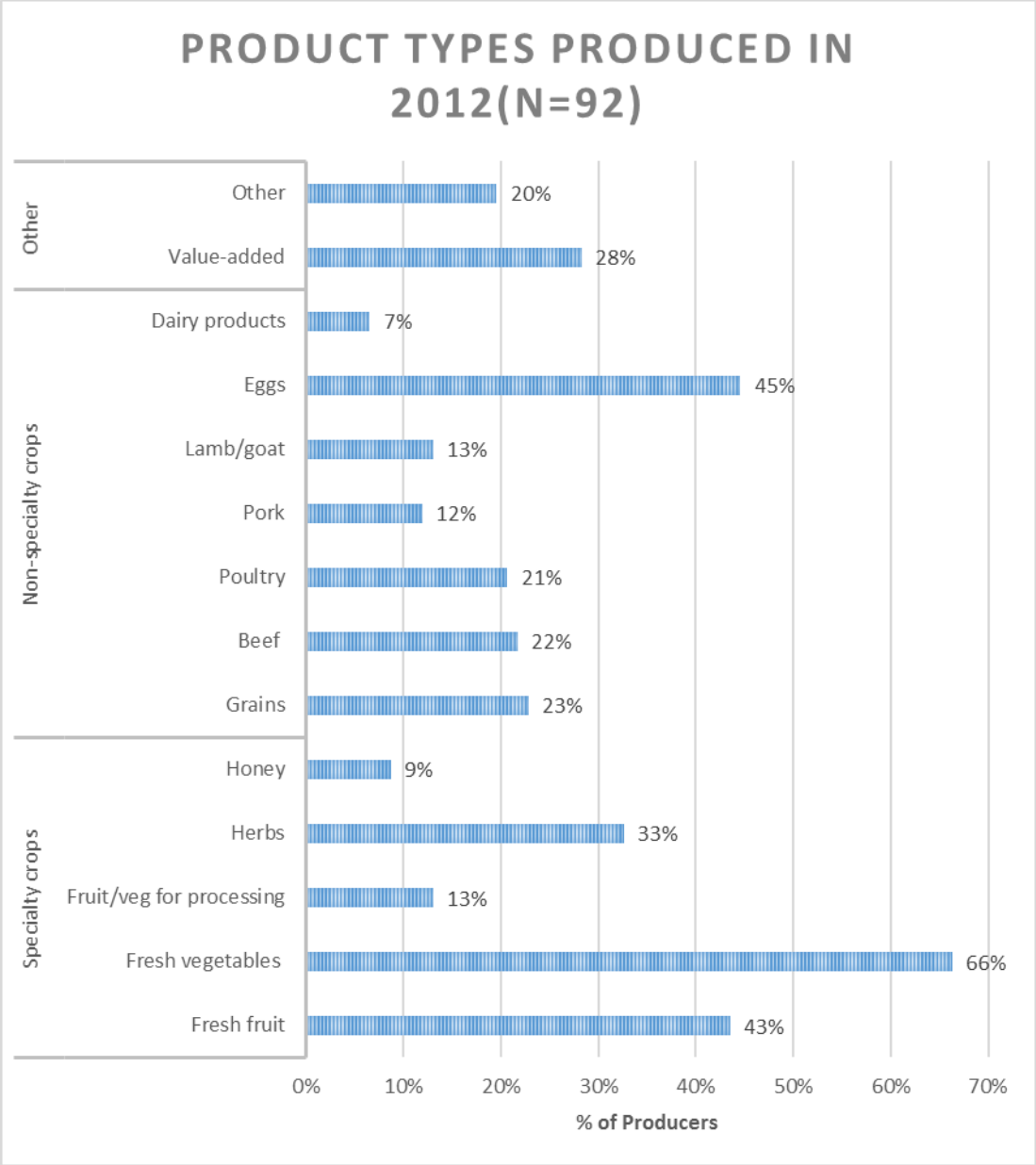
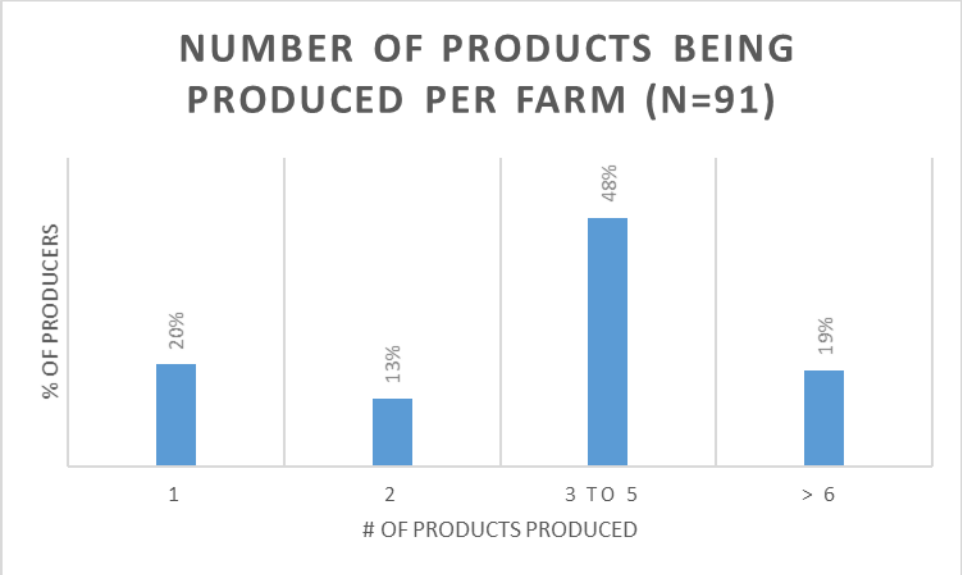
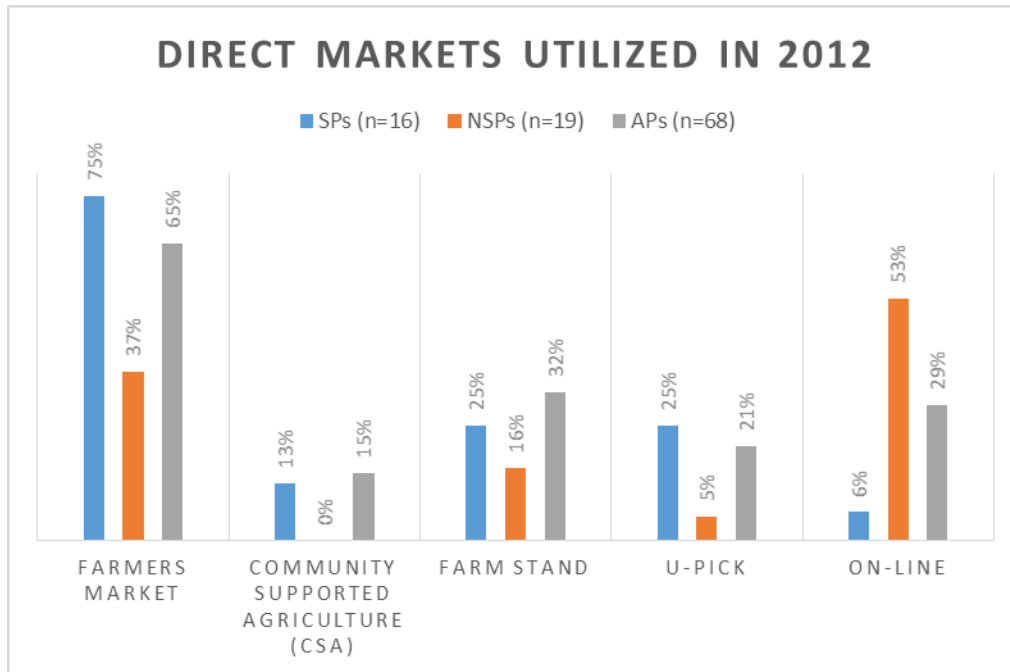


Figure 5.4 Number of products being produced per farm in 2012, from a survey of Kansas producers^y found within a 150 mile distance of Manhattan, KS.



^yThere was one non-respondent to the survey question for which this data was compiled

Figure 5.5 Direct-to-consumer markets utilized by Specialty Crop Producers (SPs), Non-Specialty Crop Producers (NSPs), and All Producers (APs)^z in 2012, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

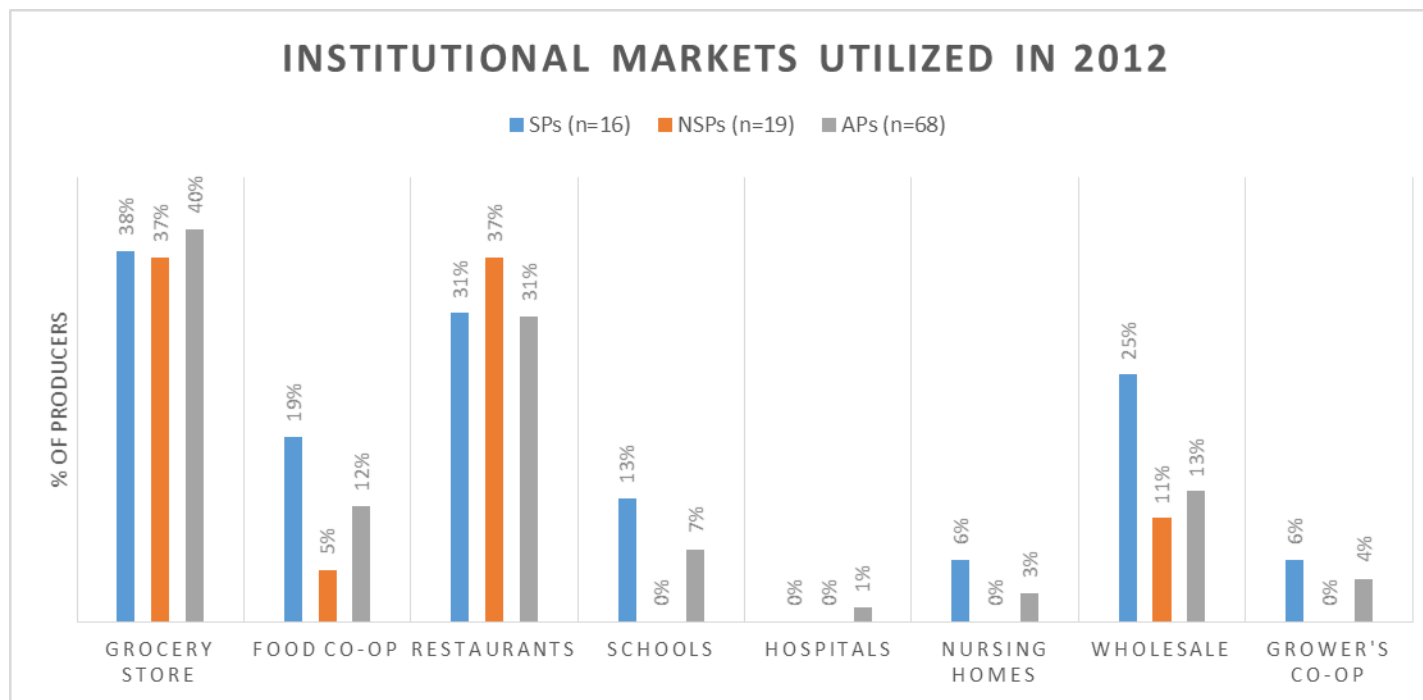


^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

^yThere was one Specialty Crop Producer, three Non-Specialty Crop Producers, and five All Producers that were non-respondents to the survey question for which this data was compiled.

Figure 5.6 Direct-to-institutional markets utilized by Specialty Crop Producers (SPs), Non-Specialty Crop Producers (NSPs), and All Producers (APs)^z in 2012, from a survey of Kansas producers found within a 150 mile distance of Manhattan, KS.

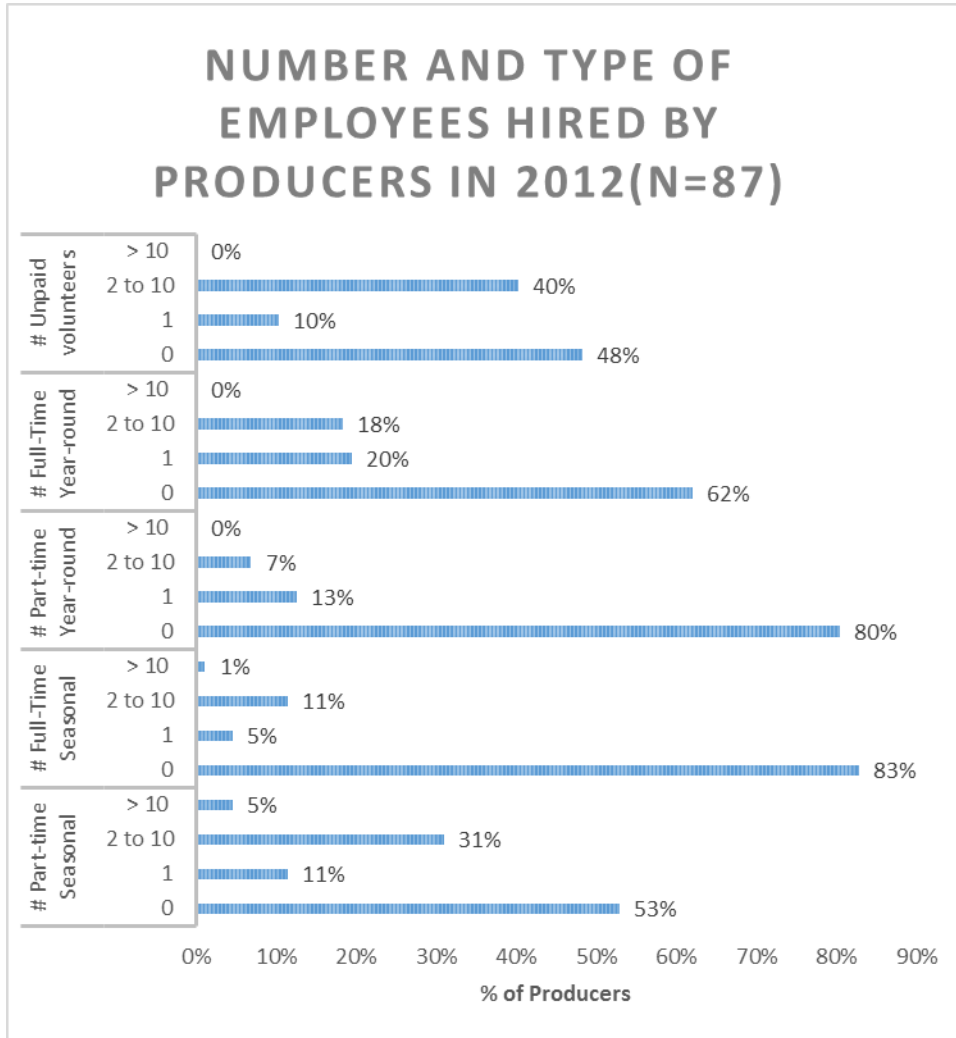
(Note: “Wholesale” and “Grower’s Co-op” are intermediaries that often service institutional markets)



^z Per the USDA-AMS (2013) definition of specialty crops, Specialty Crop Producers are respondents that identified as only producing fresh vegetables, fresh fruit, ornamentals, nuts, and/or honey. Non-Specialty Crop Producers are respondents that identified as not producing any specialty crops. Diversified producers are respondents that identified as producing both specialty crop(s) and non-specialty crop(s).

^y There was one Specialty Crop Producer, three Non-Specialty Crop Producers, and five All Producers that were non-respondents to the survey question for which this data was compiled.

Figure 5.7 Type and amount of employees hired by survey respondents in 2012, from a survey of Kansas producers^y found within a 150 mile distance of Manhattan, KS.



^y There were five non-respondents to the survey question for which this data was compiled.

Chapter 6 - Thesis Conclusions

The overarching goal of this thesis research was to describe the local food system of Manhattan, Kansas through the perspectives of producers and institutional consumers. Through producer surveys and personal interviews within institutions, several objectives were explored to describe this food system. The first objective was to understand producer and institution definitions and perceptions of local food (Chapter 3). Findings within this objective suggest that both producers and institutions default to distance or geo-political boundaries to define local food. That being said, both groups also utilized qualitative characteristics to describe local food, such as the use of direct-to-consumer markets, knowing the farmer, and high local product quality.

The three remaining objectives that were explored in this research were to understand producer and institutional concerns and opportunities for direct-to-institution marketing within Manhattan's food system (Chapter 4). The main concerns for direct-to-institutions shared by both producers and institutions were price points, quantity and quality of product, and logistical costs. Institutions were also concerned with food safety. In order to meet the demand of institutional sales, resources that producers identified as being important included increased farm infrastructure, increased on-farm storage, and information on marketing. Both producers and institutions appeared poised to produce and purchase local food on a seasonal basis.

In conjunction with expanding the level of communication between producers in our survey area and Manhattan institutions to foster business relationships, it may be worthwhile to invest in existing direct-to-consumer markets. As the producer demographics and farm characteristics show (Chapter 5) the producers within our survey area are small scale and have limited capacity to provide the consistent volume of product to institutional buyers. Many of them are currently relying on direct-to-consumer sales, with most utilizing farmers' markets. Fostering this marketing avenue within Manhattan's food system could ultimately bolster producer confidence to scale-up and be able to approach direct-to-institution sales.

Aspects of the food system that this thesis research did not cover were processors, individual consumers, and waste management. Evaluating these parts of the food system within Manhattan, Kansas will further point out strengths and weaknesses for developing this food system on a more localized scale.

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Appendix A - Producer Survey

KANSAS FARMER SURVEY

A survey to evaluate the perceptions of local food systems and the barriers of marketing to institutions of farmer's within a 150 mile driving distance of Manhattan, KS

First page of survey, including informed consent

Survey description:

The purpose of this survey is to investigate the barriers Kansas farmers have in marketing to Manhattan, KS institutions such as retail grocers, schools, and hospitals. It will also explore producer perceptions of local food systems and selling to institutions. The information we gain from this survey will advance our understanding of Manhattan's local food system from the producer perspective. We can then use this information to promote any needed change to the system and discover resources that may be lacking for those changes to occur.

This survey is voluntary and you can stop the survey at any time.

Principal Investigators: Angela Anegon, Graduate Student, Department of Horticulture, Forestry, and Recreation Resources. You can contact her at anegon@ksu.edu or (208)305-5067. Dr. Candice Shoemaker, Professor, Department of Horticulture, Forestry, and Recreation Resources. You can contact her at cshoemak@ksu.edu or (785) 532-1431.

Institutional Review Board – Human Subjects Chair: Dr. Rick Scheidt, IRB Chairman, 203 Fairchild, KSU, Manhattan, KS 66506, (785) 532-3224.

Opening Instructions:

This survey should take you 20-30 minutes to complete. We appreciate your honest and candid responses to all of the questions. All responses are confidential and anonymous and will not be linked back to you. Removing this page and beginning the survey will indicate you have read and understand this consent form and willingly agree to participate in this study under the terms described.

Section 1: Perceptions of Local Food and Selling to Institutions

- 1.1 What is your definition of a “local food system”? Please write your response. (N=81)
- It is the connection between consumers and farmers from the farm to the table. Also, the local food estimates market size, explains the characteristics of producers and local consumers and examines the economic and health issues (impact) of local food system. It is

very important for developing the local economy, reduce energy, and for better (good) nutrition.

- Generally, I would say food grown within easy driving distance, say 120 miles, is fairly local. Truly local, is something you can grow or produce or buy from a friend, neighbor, or farmer in your immediate vicinity, so that there is virtually no transportation involved. In addition, if a product is grown in the immediate vicinity and it is readily available it is local, where the same product from 120 miles away is not. But if a product isn't readily available, whether it doesn't grow in your area but does further south, or in a microenvironment of a hoop building, the distance I would consider local is greater for that item than one that could be grown in your own garden or orchard.
- Local to me is neighborhood, the place in which you live. To be able to purchase in the manner should but the cost b/c it cuts down on processing and distribution cost. However, what I see are locals setting their own prices to match the stores that bring in food from far away.
- Food produced w/in 100 miles of where it's sold
- The key word is 'system'. I feel local should be about 50 miles from metropolitan area - encouraging as much produce that is fresh and doesn't require large distance shipping. It involves producers, marketers, and citizens.
- Food that is produced in a sustainable manner with emphasis on quality not price. That is available to consumers in the county area when in season.
- Food that has been grown in the locality in which it is sold to the consumer.
- Farmer's market: food you buy directly from the grower
- Food produced locally for local consumption
- Where people (customers) have access to locally grown food.
- Locally produced food system is one that uses small producers in a 50 mile radius to service its needs.
- This is a question for the more academically inclined.
- Being able to get food that is grown within a surrounding area. Local doesn't always mean a certain distance. For instance if you want blueberries and the closest place is 200 miles then that would be local.
- Food grown locally and available to feed a community.
- It means a group of farmers producing edible food stuffs within a defined regional area for that area.
- A local food system relies on foods raised within the immediate area. How large that area would vary from person to person but I believe that which 100 miles is reasonable. Preference should be given to smaller operations (i.e. I don't care is a CAFO is 2 miles down the road, that is not the kind of food those willing to pay for local are interested in).
- Food that comes from the area which you live. It will be fresher. It will benefit the local community. You will know how it is grown, raised, and processed.
- Grown in Kansas

- Any food grown, sold, and consumed within 100 miles of where it is grown.
- A local food system is one in which both producers and consumers are concerned with food security, sustainability, and economic and environmental impact.
- While it is impossible in our climate to eat 100% locally sourced food, our local food system is one that should emphasize the growing as much food as possible in our backyards, buying from local producers, and dining at restaurants that use locally sourced products.
- I would define local as any food grown or produced with one's market area or contiguous to that metro market area.
- Local food system would be where neighbors within 3 hours drive would purchase from local producers what they have available as their primary source first.
- Any establishment that tries to source most produce etc. locally. People's is good, Little Apple Brewing Co. is good, many of our local restaurants are good. East & Westside market are good.
- Local food definitions are difficult to put into words - for me personally it involves a physical definition of my local area (probably 50 miles or less). Combined with a knowledge of the farm/land where the food was nourished and the caretakers of the land and the food.
- Grown or raised by 100% local farmers on local farms. I have some knowledge of produce bought from grocery stores and sold at farmer's markets. It is not locally grown it must clearly state it as such. Even if it was produced by your neighbor it should be stated.
- Food products produced with in a reasonably close proximity to a specific market. 2-4 hrs driving distance.
- Food products grown inside a 50 mile radius from where is it consumed.
- Food produced w/in 100 miles of consumer
- A local food system are food that is produced and processed w/in 150 miles of consumption.
- A food system that is based on local production and processing of food. It includes producers and the consumer. It can also include those who market the food if not done directly by the producer.
- Local food is where you either produce or consumer food from your local area. This would be seasonal of course.
- In our experience, we have been told local grown is considered KA, OK, NB, CO, and MO. In other words all surrounding states.
- Finding small producers that are not tied into the commercial food industry that provide necessary food items for the daily diet (vegetables, fruits, grains, sweeteners, meats, etc.) Ideally these producers would be found within, an hour drive from my home maybe two hours.
- Food raised entirely within a specified physical area. Example local food = 100-150 mile radius of a given spot.
- Local food = people you can physically meet and I really don't have a distance. I should be able to easily identify the location of the producer.
- Where foods are grown and consumed in a local community maybe within 25-50 miles

- Less than 100 miles
- A local food system is: 1. food from your own farm/garden, 2. food from producers in your county or city, 3. food from a 50 mile radius from your house. Anything further is not local.
- Farmer's markets that we attend. Health food stores that we supply in our area. Primary clients within 50 miles of Newton/Wichita area. Food that I purchase from local associates in the neighborhood.
- A locally grown, harvested, marketed, and consumed system
- Grown, produced or processed near where the food is consumed.
- It is one where consumers buy their food from producers who raise/grow food within the locality of where it is sold.
- Food that is grown and then eaten locally
- Buying and/or growing as much as possible as close as possible. Farmers and consumers in the same place.
- A food system that relies on regional products and primarily focuses on items available in independent outlets i.e. not a chain
- A local food system uses food grown and used without the food being shipped.
- Farmers market and home grown
- A system that supplies the local community with the basic foods needed for survival. All food groups are grown/supported by those living within the determined radius. Year-round growth and demand meets the needs for a continuous cycle.
- Products that are grown, raised, prepared, harvested, within 50 miles
- Food produced in outlying areas of different communities. More than one community might be served by producers in the area depending on the proximity of the communities. Inter-city gardens have recently contributed to community produce.
- A system of producers, retailers, value-added processors and restaurants and eaters/buyers who are engaged in the agriculture of the area by the food choices they make.
- "Local food systems" is a term mostly academic use to describe how food is supplied, marketed, and consumed in a given area.
- We raise the food - be it vegetables, pork etc. on our farm - process that food locally - use a local locker for meat product, clean and package vegetables etc. ourselves. Then we sell it either from our home or by going to the local or regional farmers markets. Also to local restaurants, anyone who will re-sell it for us. Baked goods, jams jellies, canned products the same way.
- Food that is grown or produced and then sold in a local market.
- Local foods are raised within close proximity (usually within a couple hundred miles). Local food organization often require vendors at their markets to sell only products procured from the farm.
- To me, local food is something (produce, eggs, milk, etc.) that is raised to sell for consumers in the area to enjoy. From the fresh eggs to the fresh veggies to sell at the farmers markets, to that locals that "stop in". To provide to local grocery stores.

- Production and distribution of food within a defined radius -50 mile
- Local food means that it is produced within 50 miles of where you live in my opinion.
- Food that is raised within a 4 hour drive
- Local food system consists of products raised/produced within a reasonable distance such as 75 miles so that consumers may visit the farms. The variety of product would extend this distance to within a bordering state but not halfway across that state. I prefer Kansas grown.
- Local foods are grown by producers you can get to know. For us we consider anything in Kansas and neighboring southern Nebraska to be local. Its produce that has to be transported less than 5 hours and can be delivered fresh within 24 hours from harvest. A great deal of local produce is sold direct to local people.
- Food produce in the area you live. It could be in a "swapping", a farmers market, or a co-op.
- Foods, veggies, meats, fruits, etc. Grown locally within a certain distance of you selling place - or possibly state, region raised. I deliver within a radius of 150 miles of my home farm in Washington, KS.
- This is a tough question but I think it comes down to attempting to use as little fuel as possible to get your food on the table. If you can get tomatoes down the street then that's better than 100 miles away.
- Local food is grown within a 100 miles on a smaller (not corporate) farm. I guess local food system would involve moving that food around, selling it, and using it in other products.
- Anything that can be grown in the ground and be processed and preserved for you family and other families in your immediate area.
- Producers selling to consumers within a 100 mile radius.
- Food that has come directly from producer to consumer.
- Food nearby (less than 200 miles) that is grown on small farms utilizing sustainable agriculture practices - often and preferably utilizing organic farming techniques and without chemicals or GMO products.
- Not sure
- Obtaining food from local producers
- Home grown
- A local food system means a variety of foods grown or raised separate from modern industrial agriculture system and sold with a few middlemen as possible. Storage of fresh foods should also be kept to a minimum.
- Local food should be: sourced as close to the consumer as possible, raised with a majority of input items (feed) sourced locally to the farm, produced by individuals with a "stake" in the local community (i.e. a 'corporate farm' that has a local field but has not connectivity to the local community would not qualify).
- A system where most of the food is grown locally.
- An environment defined somewhat by geography that has the farmers, food aggregators, and processing and distribution components need to utilize the majority of the food raised within the system.

- Food grown and distributed within 100 miles
- We really have not thought about this very much but it would seem to include things like direct farm to consumer sales, a food hub, farms sales to local groceries and restaurants, and maybe also some bartering.
- Food that is grown or raised for the potential consumption in the immediate area
- Local food system to me means directly from the farmer or gardener pretty much to the consumer. Like local farmer's market - however I also would have to include selling to local stores (within 100 miles) who then sell to consumer - we have stores in Holton, Sabetha, Valley Falls, Lawrence, Topeka, and Manhattan that sell our popcorn. We also sell thru some gift shops around the state of Kansas that sell our popcorn because we are a "Land of KS" producer.

1.2. Food that you consider to be “local” has travelled how far from where it was grown?
Mark one.

Distance	N
25 miles or less	9
50 miles or less	19
75 miles or less	7
100 miles or less	32
150 miles or less	16
150 miles or more	7

1.3. For this question, consider selling to institutions such as schools, hospitals, and grocery stores. With your current operation, what concerns you about selling to institutions? Rank the level of concern each of the following provides by circling the number in the appropriate column. If you have no experience with one of the items or if it does not apply to your operation, please mark the “N/A” column.

	Most concern 1	Some concern 2	Slight concern 3	No concern 4	N/A 0
My production quantities are too small	36	20	18	8	4
There are not enough local buyers or local interest	18	16	20	26	6
Institutions want uniform boxes and/or packaging	19	23	18	15	11
I'm not sure how to contact institutions in Manhattan, KS	6	11	13	22	34
I don't have time to contact institutions	9	21	21	23	12
Costs associated with transportation for delivery (time, fuel)	27	21	18	14	6
My off-farm job takes up the time I would need to expand my farming operation	25	10	11	19	21
Buyers don't guarantee the purchase of my products in advance	11	33	16	13	13
Buyer contracts are too stringent and/or lack escape clauses in case my crops fail	11	18	25	11	21
I do not produce year-round to meet demand	26	20	17	12	11
I lack on-farm labor to help meet demand	20	19	16	21	10
Buyers want product liability insurance and I don't have it	12	16	12	28	18
I am not GAP (Good Agricultural Practices) certified	17	16	17	22	14
Institutions demand too low of a price for my product	37	20	14	4	11
Institutions don't do enough to promote local products in their marketing	18	26	16	16	10
Other: - I have health issues that limit my ability. - Stores want too big a % of retail thus I don't profit enough to sell to them.	12	2	0	0	0

<ul style="list-style-type: none"> - Institutions like nursing homes, hospitals think regulations keep them from buying local produce. Prices too high for school districts budget. - As naturally grown/raised produce and dairy, they can't meet purchasing demands - Institutions use my name for promotion but don't buy enough to make it worthwhile. - I don't sell to institutions - Retail markup is too high so retailer sell small quantity - Regulatory hurdles – Fed, state etc. - Regs and red tape - Institutions lack knowledge of the growing season - Institutions are used to buying pre-packaged in bulk and do not understand that real food varies in size and shape. Farms have entire crops or animals to sell not just the prime things. - Our products are frozen – stores only want fresh - Too much emphasis is put on local - There is no source to “pool” products w/ other producers to achieve adequate quantities for sale purposes (institutional or otherwise) - State inspections - People have a hard time understanding the difference between getting food products from the grocery store and getting them from the farmer in terms of supply, lead time, etc. - Chefs move and stores have lots of paper hurdles - Held to rigid delivery schedules 					
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1.4 The following question regards your openness to selling under contracts with institutions. Please circle the number indicating the likelihood that you would participate in the given situations.

	Very likely 1	Somewhat Likely 2	Somewhat Unlikely 3	Very unlikely 4
I would sell to institutions if a purchase contract was provided.	11	35	17	26
I would enter a purchase contract if it included an escape clause for me, in case of crop failure or other uncontrollable circumstances.	26	32	12	18
I would enter a purchase contract if it included an escape clause for the institutional buyer based on quality criteria.	14	33	21	21
I would scale up my production to meet the needs of an institutional buyer that has expressed interest in buying local products.	22	32	15	20

1.5. Are you currently selling agricultural products in Manhattan, KS? Mark one.

Yes	21
No	71

If yes, please answer Question 1.5.1. If no, continue on to Question 1.6.

1.5.1. Of the Manhattan, KS institutions listed below, which are you currently selling at? Which would you like to sell at? Which would you prefer not to sell at? Please X the appropriate column for each institution. Once completed, continue to Section 2.

	Currently selling here	Would like to sell here	Prefer not to sell here
KSU Dining Services	1	7	9
Rock Creek School District	1	4	12
Manhattan-Ogden School District	0	5	11
Riley County School District	0	5	11
Mercy Regional Health Center	0	9	8
Dillons (West Loop and/or Sarber Lane Location)	3	6	10
Ray's Apple Market (Anderson Ave and/or N. 6 th Location)	1	7	10
Hy-Vee	2	7	10
Eastside and/or Westside Markets	4	8	7

People's Grocery	8	6	4
Other:	11	1	1
- Kansas Kollection			
- Direct to consumer			
- Farmers market and online market			
- Manhattan farmers' market			
- Manhattan Farmers Market			
- Local Manhattan Restaurants			
- College students			
- Farmers market			
- Farmers market			
- Heartland Foods Wamego Store			
- Little Apple Restaurant			

1.6. Would you like to expand to markets in Manhattan, KS? Mark one.

Yes	30
No	60

If yes, please continue on to Section 2. If no, continue on to Question 1.7.

If you answered YES to either Question 1.5 or 1.6, you will have an opportunity to tell us about your marketing experiences in Manhattan in the following sections.

1.7 If you answered NO to questions 1.5 and 1.6, then please address the following questions in the space provided.

- Where do you currently sell your products?
- Why are you not interested in expanding to markets in Manhattan, KS?

Once finished with your response, please continue on to Section 4.

- Topeka: Too far away for no more then I can grow. If I found someone w/ flexible schedule rather than demand I show up at 6 am for delivery, then I would consider it.
- Sell fruit at farmers markets and roadside sales and out of my house. Manhattan is too far away for me to sell produce there.
- I sell in local farmers' markets – Overland Park and Spring Hill. I also sell from the farm. Manhattan is too far.
- We sell to local health food stores, farmers market, and to CSA members. Too far to travel, the expense of travel would increase the price of the food.
- We sell in Ottawa, KS and Manhattan is too far away.
- At this time we sell in Atchison. We has previously sold in Topeka. We found that the cost of gas outweighed the sales. Plus, when markets allow vendors who sell a lot of produce at WalMart prices, it devalues the smaller vendors' produce. We prefer markets who limit their vendors to those who are selling quality produce rather than quantity. Manhattan is too far away to be feasible option for us now, although we used to live there.

- We produce vegetable and herb transplants for retail gardeners, not the finished ready to eat product.
- Emporia Farmers Market. Would not be interested in a Manhattan market. I always sell all I can raise at Emporia's Market.
- Atchison Farmer's Market, St. Joe Farmer's Market, Leavenworth Farmer's Market, restaurants, institutional kitchens, CSA
- Manhattan Farmers Market. I am 50 miles away. I only farm part-time as I manage the Waterville Golf Course and am also a substitute rural carrier.
- Sabetha, KS. I don't often travel to Manhattan. Travel would cost too much.
- I sell through a series of retailers, my website, and through my gift shop.
- We sell at the farm in the fall and at a Wichita farm market in the spring and summer.
- I sell to neighbors, friends and a chef that lives 15 min drive from here. I garden 3 acres and the chef takes everything available. Why drive 1 hr 15 min to Manhattan?
- We are located in South Central KS and we sell primarily in Cowley Co. and a little in Sedgwick Co. Manhattan is too far for us to travel.
- We sell in Wichita Market. Distance and lack of any connection.
- At our market in Concordia.
- Local farmers markets, restaurants, and off the farm. I would not be interested in Manhattan, KS because of logistics and cost to get goods there.
- We have a small CSA and we also started selling this past season to a food co-op. Manhattan is too far away for us to consider – the expense of fuel and time on the road to sell keeps us closer to home.
- Winfield, Wichita, El Dorado, and Augusta. Regional.
- My quantities are too small to justify attempts at sales. Production problems (i.e. weather) severely limits total output. What I need is a source to sell small quantities that justifies transportation costs.
- Johnson Co. KS area, Manhattan
- We currently sell in Linn County KS and Johnson County. The distance and cost of transportation.
- I sell items direct from the farm and from my off-farm job site. Manhattan is too far. I have also sold at farmers' market.
- Mostly around our area at farmers' market, craft fair, and Skip's grocery in Carbondale.
- We currently retail all of our farm products through a CSA program, 2 farmers' markets, and on-farm sales. It's hard enough to meet demand with our retail customers.
- Direct to retail customers. Distance and didn't consider it a likely market for target consumer.
- At one point I wanted to serve all of NE KS, but the amount of time it takes to go to all the markets and the vendor fees, most market allow anyone to sell these days and there is a lot of undercutting in prices. Making farmers markets not as much fun or appealing. I sold at the Lawrence farmers market for 10 years. And this year we are focusing on getting people back out to the farm and our CSA. Distance and time as I am a mother of 3 kids which I

homeschool and they come with me. We are a working homestead and family is important. I want others to feel that too. Family, food – connecting to the farm opens healthy conversations about food and production.

- I currently sell my products at a you-pick farm. That is by far the most cost effective. The extra produce is sold to the Community Mercantile in Lawrence and I get a fair price. I was contacted by my local Wal-mart to sell to them but declined since I didn't think I would have enough and Wal-mart has the reputation of cutting the price they pay in a year or so. I did not think it would pay to increase production and then get scalped by the store. Our profit margin is so little anyway, why work entirely for nothing? Manhattan, Kansas is too far for us to deliver to. We would not have the time or make anything after paying for the gas to get it there.
- St. Joe, MO. Lack of ethnic population.
- I sell in Salina/Saline Co. I am not interested in Manhattan because of distance.
- Wichita Metro Area. Wichita Market is bigger than Manhattan. There are other producers that provide similar products to mine and already close to Manhattan. Seems like some producers over-produce and must/choose to travel longer distance for sales/deliveries.
- We sell in Wichita and the surrounding 4 counties.
- 98% of my products go out of state.
- Kansas City Area
- Products are sold in Newton, KS – Harvey Co. We are close to Wichita and are u-pick so have been reaching that market.
- Clay Center, KS. Don't have the products.
- We sell on farm site. Manhattan is too far away for us.
- Cottin's Hardward Farmers Market in Lawrence, KS year-round. Not cost effective, not enough time, not enough produce. Excess fruit is sold to the Community Mercantile in Lawrence.
- Lawrence, KS. We have enough markets here.
- KCK, KCMO, Topeka, Lawrence and surrounding communities. Selling to Manhattan wholesale markets would be too far to travel. We currently have individual customers who purchase our beef retail (bulk) in the Manhattan area. Not enough product prevents us from expanding our market.
- We sell our produce wholesale primarily to grocery warehouses, road side stands, and pumpkin patches in a four-state area. We also have a retail market at Courtland, KS on US-36.
- Where: on the farm, at farmers market (Lawrence), to local grocery stores (Lawrence), to restaurants and caterers (Lawrence). Why: cost and time of delivery, not enough price in taking items that far.
- At present, we are into egg production and cannot compete with large scale producers. Our free-range all natural dairy and vegetable production is aimed at direct sales to those seeking those products.

- My current flock is small and with my son busy with high school activities will probably quit when he is done with school.
- We currently sell our products in Lawrence, KS. I believe local communities should be supporting nearby (within 50 miles) farms and consumers in Manhattan could probably find nearby farms to support instead of having to travel a long distance. I know we couldn't afford the time or the fuel to travel round-trip to Manhattan.
- I currently sell most of my meat at the Lawrence Farmer's Market. It is a 20 minute drive from my farm. I would consider emu oil and emu oil products in Manhattan as I could UPS or Fedex them safely.
- I sell on the internet and from my farm. I cannot because of governmental regulation that hamper small producers with quality products.
- Seneca, St. Marys, Co. Grove, Washington, Manhattan (Rays IGA), Clay Center, KS and Fairbury, NE. My production just about meets demand to expand would mean to expand operations etc. I'm one woman – got all I can handle. I deliver too. Keeps me picking and delivering continually Sept-Oct. 4 acres pumpkin, non-irrigated.
- I am in the Wichita area. If there was a health food store that would carry my product I would have interest.
- Kansas City, CSA; Lawrence CSA and Market; Topeka, CSA. Not right now, too far.
- Community Merc in Lawrence, KS. We do not have time to drive to Manhattan on a regular schedule.
- Just locally usually 25 miles range to 50. Really that is far from our home.
- Emporia, KS. There is more than enough business from me here.
- I also sell my products in Clay Center, KS.
- Most retail/institutional outlets do not understand costs of production for small farms and are unwilling to pay fair market prices for products. Selling directly to end consumer is far more profitable for farmer and affordable for consumer.
- Wichita, KS. Too far for me – 2.5 hours away.
- On the farm. Not a Grade A facility so restriction to sell of the farm apply.
- Hiawatha: u-pick here at the farm. Topeka, Atchison.
- My farm is a small CSA with 25 subscribers and an organic section at the grocery store. I've operated for 3 years with only myself and one person helping 15 hours a week.
- Farmers market locally – 25 miles. Currently I am not healthy enough to expand.
- I sell most of my products in Lincoln, NE. The drive for me is the same BUT they actually have a well-developed and still growing food system. It is WAY easier to sell in NE as an out of state producers that it is to sell anywhere in Kansas.
- Lawrence, KS
- Emporia Farmers Market. Manhattan is too far away and not enough produce.
- We sell directly to individuals, mostly delivery products to consumers, and we sell at the Cottins Farmer's Market. Once we sold stuff to the Lawrence Memorial Hospital. Manhattan is too far away and we are too small a farm right now.

- Cheney Farmers Market. Too far away, not in my marketing area.
- I currently sell to areas in Lawrence and KC. Being located in Lawrence, the distance is the largest factor.

Section 2: Marketing and Farm Operations

2.1 In 2012, which of the following marketing outlets did you utilize?

- Of the marketing outlets you marked YES, estimate the percentage each outlet contributed to your total 2012 farm sales.

- Of the marketing outlets you utilized in 2012, which were located in Manhattan, KS? –

- Finally, mark the marketing outlets you plan to use in 2013 and at what level: YES - sell at same level as 2012, YES - expand sales at this outlet in 2013, YES - decrease sales at this outlet in 2013, NO - will not be utilizing this outlet in 2013.

	Utilized this outlet in 2012?		% of total farm sales from this outlet (column should total 100)	Market outlet in MHK? If yes, check box.	Do you plan to utilize this marketing outlet in 2013? If yes, at what level compared to 2012?			
	Yes	No			Yes Same	Yes Expand	Yes Decrease	No
Farmer's market	44	24	<i>*See below for responses</i>	16	18	19	1	0
CSA subscriptions	10	58	*	2	2	5	1	59
Farm stands/Roadside stands	22	46	*	3	10	12	1	45
U-pick sales	14	45	*	3	9	6	0	53
On-line sales	48	20	*	4	6	14	0	47
Grower's cooperatives	3	65	*	3	2	2	0	64
Grocery stores	41	27	*	5	8	16	1	42
Food Co-ops	8	59	*	3	1	9	1	57
Restaurants	21	47	*	3	6	11	1	48
Schools	5	63	*	0	1	3	1	62
Hospitals	1	67	*	0	0	1	0	67
Nursing or retirement homes	2	66	*	0	1	1	1	65
Wholesalers/packers/aggregators	9	59	*	1	2	4	2	60
Other:	19	49	*	3	4	11	3	51

<ul style="list-style-type: none"> - Quick shops, gift shops - Individual people - Delivery service based on word of mouth marketing - Direct to consumer - Word of mouth/local marketing - Pumpkin retailers i.e. nurseries, greenhouses, pumpkin patches - Private sales - Auction - Craft show - Craft shows, street fairs - Private sales - Auction - Bartered with friends - Craft fairs - Friends, family - Hybrid email announcement/phone order/ farm pickup 								
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* % of total farm sales from this outlet - per respondent

<i>ID #</i>	<i>Farmers' Market</i>	<i>CSA</i>	<i>Farm Stands</i>	<i>U-Pick</i>	<i>On-line</i>	<i>Growers' Co-op</i>	<i>Grocery store</i>	<i>Food Co-op</i>	<i>Restaurants</i>	<i>Schools</i>	<i>Hospitals</i>	<i>Nursing homes</i>	<i>Wholesalers</i>	<i>Other</i>
22	25	0	0	70	0	0	0	0	5	0	0	0	0	0
23	10	0	0	9	10	0	10	10	1	0	0	0	50	0
24	20	0	80	0	0	0	0	0	0	0	0	0	0	0
25	85	0	0	0	0	0	5	0	0	0	0	0	0	0
26	95	0.5	0	0	0	0	0	0	2	0	0	0	0	2.5
27	100	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0.1	0	6	0	0	0	0	0	0	0	0	0	84	10
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	0	0	50	3	0	0	47	0	0	0	0	0	0	0
50	0	0	0	0	5	0	10	10	5	0	0	0	70	0
53	85	0	6	5	0	0	2	0	1	0	0	0	0	0
55	80	0	0	0	0	0	10	10	0	0	0	0	0	0
56	100	0	0	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	60	25	0	0	0	0	12	0	3	0	0	0	0	0
70	20	0	0	0	30	0	40	0	10	0	0	0	0	0
72	75	0	0	25	0	0	0	0	0	0	0	0	0	0
73	64	0	25	0	57	0	5	0	0	0	0	0	0	0
74	0	0	0	100	0	0	0	0	0	0	0	0	0	0

76	5	0	20	0	5	0	15	0	0	0	0	0	0	55
77	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80	95	0	0	0	0	0	0	0	0	5	0	0	0	0
81	0	0	0	15	10	0	0	0	50	0	0	0	25	0
82	60	10	2	1	0	0	10	2	15	0	0	0	0	0
83	0	70	0	0	0	0	10	0	20	0	0	0	0	0
84	0	0	X	0	0	0	X	0	X	0	0	0	0	X
86	10	0	0	0	0	5	0	75	0	0	0	0	0	10
87	100	0	0	0	0	0	0	0	0	0	0	0	0	0
91	10	0	0	0	88	0	0	0	0.5	0	0	0	0.5	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	50	0	50	0	0	0	0	0	0	0
99	50	0	0	0	10	0	0	30	10	0	0	0	0	0
100	3	0	0	0	0.5	95	0.5	0.5	0.5	0	0	0	0	0
101	0	0	100	0	0	0	0	0	0	0	0	0	0	0
102	35	25	35	X	0	0	1	1	1	1	0	1	0	0
103	95	0	5	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	40	0	0	0	0	0	0	0	0	60
107	40	10	0	0	0	0	50	0	0	0	0	0	0	0
109	0	0	35	2	58	5	0	0	0	0	0	0	0	0
112	10	70	0	0	0	0	20	0	0	0	0	0	0	0
115	20	0	50	10	0	0	15	0	0	0	0	0	5	0

118	75	5	20	0	0	0	0	0	0	0	0	0	0	0
122	0	0	3	30	10	0	37	0	0	0	0	0	0	30
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	75	0	0	0	0	0	0	1	0	0	0	0	0	24
131	80	0	0	0	0	0	10	0	0	0	0	0	0	10
134	0	0	0	0	100	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	75	0	25	0	0	0	0	0	0	0	0	0	0	0
138	40	0	0	0	10	0	0	0	0	0	0	0	20	30
139	0	0	0	0	1	0	0	0	99	0	0	0	0	0
142	3	0	0	0	0	0	0	0	0	0	0	0	0	97
145	30	0	70	0	0	0	0	0	0	0	0	0	0	0
146	0	0	0	0	0	0	0	0	20	0	0	0	0	0
147	10	0	0	0	0	0	0	0	0	0	1	0	0	89
149	0	0	25	0	25	0	0	0	0	0	0	0	0	50
150	5	0	0	85	0	0	0	0	0	10	0	0	0	0
152	80	0	0	0	0	0	5	0	5	0	0	0	0	0
155	98	0	0	0	0	0	1	0	1	0	0	0	0	0
204	0	90	10	0	3	0	2	0	0	0	0	0	0	0
205	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208	0	0	0	50	0	0	25	0	0	0	0	0	0	25
211	30	0	70	0	0	0	0	0	0	0	0	0	0	0

215	0	0	0	0	0	0	0	0	0	0	0	0	0	90
217	0	0	0	0	0	0	0	0	0	0	0	0	0	0
218	50	0	0	0	0	0	10	0	5	1	0	0	34	0
220	50	0	0	0	10	0	0	0	20	0	0	0	0	20
X	60	0	3	0	0	0	0	0	0	1	0	36	0	0

2.2 If in Question 2.1 you marked that you wish to *decrease* your sales in 2013 at certain marketing outlets you sold to in 2012, please explain the reasons for wanting to *decrease*. Write your response below.

(Farmer’s Market)

- Too much time involved in preparing and inconsistent sales. Difficult to compete with conventional growers who use chemical fertilizers and insecticides. At our markets we really have to educate our customers why our produce is smaller in size, priced higher, and sometimes slightly marred from insect damage.
- Time commitment is too excessive
- I need to sell more in less time and I need a consistent demand. I do not enjoy the volatility of the farmers markets.
- I have lyme disease and won’t be growing for sale in 2013
- The heat during mid-summer
- I have very little response to my products at the farmers’ market. I did not make enough to pay for my time.
- Market times are tough to make when working full time. Vendors often don’t price their products too low.

(Institutions)

- Low prices, irregular orders, just when we finally get regular orders they changed to other growers, (they just wanted to use our name to promote their business)
- Restaurants try to “low ball” and take only “primas” – too difficult to work with.
- Too small of quantities per delivery. Questionable feasibility of delivering less than ten cases to grocery contact in Wichita.
- I sold quite a bit at the end of the growing season to a couple that buy local produce for resale at the Topeka Farmer’s Market. I would like to sell less to them and more to my local clients.

(Other)

- We may be selling our farm so I may not be making jam and jelly to sell at the craft show.
- Drought of 2012, lowered herd size

2.3 Do you label your products in any special way when marketing or selling? Ex. “Locally Grown”, “Kansas Grown”, “Organic” etc. Mark one.

Yes	46
No	24

If yes, please list the labels you use:

- Fresh, local, sustainably grown or ecologically
 - Organic
 - Locally grown
 - Locally grown, homegrown, grassfed
 - Pasture raised
 - Local, organic
 - Locally grown
 - Kansas Flint Hills
 - Locally grown
 - Homegrown (list ingredients if required)
 - Gluten free
 - Locally grown
 - Home grown – pesticide free
 - 100% grass-fed AGA & AWA certified stickers, USDA approved label
 - Locally grown
 - Manhattan, KS
 - Natural
 - From the Land of KS
 - Natural, Grass-fed
 - Locally grown
 - Local, natural
 - Locally grown w/out chemicals
 - Locally Grown
 - Simply Kansas, local honey
 - Pasture Raised, Grass Fed, Organic Fed
- Our Local Food signage and farm logo on signage
- Not really a label, but we market as locally or sustainably grown. My understanding is that you may not market your items as organic if you are not certified organic. So I don't do that even though I grow organic.
- Locally grown
- Kansas – Locally grown
- Locally grown, Non-GMO
- True artisanal
- Locally grown
- Simply Kansas – From the Land of Kansas
- Simply Kansas, Certified Naturally Grown, Bee Friendly Farming
- Heritage Poultry
- Local Grown and No Chemicals Used (when possible)
- Not labeled but described as locally grown, sustainably grown
- Local food stickers
- Pesticide free, post farm address
- Locally grown
- Personal product label approved by the state of Kansas

2.4 In 2012, what methods of advertising did you use to promote your products? Mark all that apply.

Word-of-Mouth	59
Local newspapers	15
Farm Website	36
Other websites (localharvest.org, kawrivalley.org etc.)	42
Farm newsletter (email or snail mail)	19
Social media outlets (Facebook, twitter, etc)	34
TV/Radio	10
I don't actively advertise	11
Other: - Brochures - 1 st time attended indoor events to sell - On-line classifieds like Craigslist - Booths at different events - Internet - Email list of previous customers - More news and visibility at distribution - Signage @ farm - Facebook	8

2.5 In an average week during the 2012 growing season, about how many hours would you say you spent on each of the following activities? Write "n/a" if not applicable.

Activity	# of hours spent per week
Field work - planting, fertilizing, weeding, pest management, harvesting	* See below for responses
Livestock management and care	*
Market preparation: washing product, packing product, etc.	*
Processing for market: canning, freezing, drying, cooking etc.	*
Marketing: selling at the farmer's market, answering inquiries, etc.	*
Transporting goods to marketing outlets	*
Advertising	*
Repairing farm equipment or buildings	*
General farm maintenance	*

Other: - Expanding farm operation - Farm tours - Accounting/office work/ordering supplies - Who keeps track? - We are commercial greenhouse hydroponic - Financial: billing, budget, buying supplies, payroll, bill payment	*
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<i>ID #</i>	<i>Field work</i>	<i>Livestock Care</i>	<i>Market Prep</i>	<i>Processing</i>	<i>Transporting</i>	<i>Advertising</i>	<i>Repairs</i>	<i>General</i>	<i>Other</i>
24	15	20	15	0	10	0.5	0.5	2	1
25	28	14	6	0	12	2	0	1	1
26	20-30	0	5-6	20-30	7-8	2-3	1	0	0
27	15	0	6	0	3	0	0	0	0
35	4	8	0	0	0	1	0	2	4
47	25	0	12	0	0	16	0	0	0
50	0	20	20	0	5	5	0	5	0
53	35	0	4	0	5	2	0	0	2
55	20	0	5	0	5	2	0	0	0
56	5	10	10	24	5	1	1	6	20
65	20	0	1	0	0	0	0	2	3
70	0	5	2	2	5	5	0	0	0
72	40	0	20	4	12	2	2	2	2
73	0	5	0	0	20	5	0	5	15
74	10	0	0	0	10	0	1	0	0
76	2	2	0	0	2	0	1	1	5
77	40	0	0	0	5	1	0	5	5
80	10	0	5	0	5	0.5	1	0	1
81	12-15	7-8	1-2	3	0	1-2	0.5	0	9-10
82	30	7	25	10	15	10	5	1	1
83	25-35	0	7-8	5	5	3	0	2-5	10
84	2	30	4	0	10	15	4	2	2
86	20	0	10	10	10	2	0	0	1
87	0	0	6	0	8	2	0	0	0
91	0	20-30	0	0	10	2-4	0	0	0
93	40	0	2	0	0	0.5	0	5-10	5-10
94	10	30	5	0	5	2	1	4	4
99	10	3	6	4-5	2	1	2-3	x	depends

100	15	21	0	0	6	2	0	2	1
101	0	20	2	0	4	0	0	0	5
102	30	0	8	0	10	2	1	0	5
103	25	0	6	2	11	2	0	2	3
106	20	4	0	0	6	0	0	0	0
107	15	20	5	4	4	1	0	4	4
109	30	0	6-8	6	3	0	2-5	3	2
110	20	0	10	20	50	1	1	1	2
115	18	0	8	2	9	1.5	0.5	0.5	0.5
118	21	1.5	3	0	4	0.5	0	1	1
122	40	0	40	24	4	4	0	2	1
123	16	16	7	7	3	0	5	7	7
125	1	7	0	3	4	1	0	30	0
127	20	0	6	0	3	0	0	0	0
129	4	35	2	0	5	2	2	2	4
132	0	25	0	0	2	2	3	1	2
134	0	20	5	5	1	0	0	1	5
135	40	0	16	4	10	2	4	0	0
136	7	15	4	20	7	1.5	7	3	3
138	0	40	0	0	0	1	0	1	1
139	0	5	0	4	2	0	0	0	1
142	10	0	0	0	0	0	0	0	5
144	17	0	5	0	18	2	0	0	0
145	0	5	0	0	5	0	0	0	0
147	3	40	3	0	1	0	0	2	4
150	80	5	15	0	0	7	1	2	1
154	35	0	2	0	7	2	0	0	2
162	18	18	10	20	2	6	2	18	18
205	30	5	30	20	4	4	1	10	0
208	10	10	3	8	10	3	2	0.5	0.5
211	5	5	2	0	0	0	0	0	2
215	0	8	2	0	0	0	0	0	1
217	60	0	12	0	30	20	0	0	10
218	0	0	4	10	11	6	2	0	0

Section 3: Selling to Institutions in Manhattan, KS

For the purposes of this section, we are defining institutions as grocery stores, school districts, university dining services, and hospital dining services located in Manhattan, KS.

3.1 If you knew there was a market for your products, what resources would be needed for you to scale-up your production to supply institutions in Manhattan, KS? Please circle how important each of the below items would be to expand your operation.

	Very important 1	Somewhat important 2	Slightly important 3	Not important 4
Access to farm loans	9	10	10	28
New and/or more efficient farm equipment	11	13	13	19
More land	11	7	8	30
Larger capacity transportation vehicle	11	10	14	22
More employees seasonal and/or year-round	15	8	15	17
Increased on-farm storage capabilities e.g. refrigerated spaces, sheds	24	12	9	12
A third-party wholesaler/aggregator to handle transactions with institutions	4	15	14	22
Increased farm infrastructure e.g. irrigation, hoop houses, low/high tunnels, greenhouses	22	15	8	12
Information on marketing strategies	7	17	15	18
Information to improve production practices	12	12	17	16
Access to high-speed internet	9	8	10	29
Other: - Grants - One-on-one face to face time with person buying from me - Alternative drought practices – producing fodder hydroponically - Local meat processor - Transportation - I refuse to go larger than I can handle	7	0	0	5

Section 4: Farm Characteristics

4.1 What were the gross sales of your farm operation in 2012? Mark one.

Less than \$2500	24
\$2500 - \$4999	7
\$5000 - \$9999	17
\$10,000 - \$14,999	1
\$15,000 - \$19,999	6
\$20,000 - \$34,999	7
\$35,000 - \$49,999	2
\$50,000 - \$99,999	9
\$100,000 - \$249,000	5
\$250,000 - \$499,999	4
\$500,000 or more	2

4.2 What percentage of your farm income contributes to your total household income? Mark one.

0-19%	59
20-39%	13
40-59%	1
60-79%	4
80-100%	11

4.3 In 2012, how many acres on your farm were in production? How many were in pasture?

Production Average: 91.5 acres	Pasture Average: 81.0 acres
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4.4 In 2012, which of the following products did you produce? Mark all that apply.

Fresh fruit crops	40
Fresh vegetables	61
Fruits/vegetables for processing	12
Herbs, fresh or dried	30
Grains	21
Beef	20
Poultry	19
Pork	11
Lamb/goat	12
Value-added food products (jams, pickles)	26
Honey	8

Eggs	41
Dairy products	6
Others: - Popcorn - Hay - Non-food plants in containers, nursery stock, cut flowers - Rabbit meat, fiber, furs - Emu meat, emu oil and oil products - Non-edibles: potted perennials, cut flowers - Baked goods - Baked goods - Rabbit fryers - Venison - Flour, bread - Chickens - Pecans - Crafts, baked products - Agritourism - Garden plant only	18

4.5 What were your most profitable crops in 2012? Please list the top 5 in descending order starting with the most profitable.

#1	Milk Tomatoes Jams/jellies Tomatoes Corn Beans Pecans Onions Eggs	Grapes Tomatoes Strawberries Honey Eggs Peaches Edamame Tomatoes Grassfed beef	Asparagus Swine Hay Blackberries Spinach Lavender bundles Grains Raspberries Tomatoes	Soybeans Asian pears Pears Cherry tomatoes Strawberries Goats milk soap Greens Chicken eggs Agritourism	Tomatoes Heirloom tomatoes Gooseberries Tomatoes Broom corn Raspberries Fresh veg Watermelon
#2	Chicken Lambs Baked goods Strawberries Beans Wheat Raspberry	Collards Carrots Lambs Lettuce Asian pear Green beans Spinach	Corn Tomatoes Asparagus Tomatoes Lavender buds Beef Strawberries	Corn Watermelon Apricots Apples Blackberries Goats milk lotion	Pumpkins Eggs Hybrid tomatoes Asparagus Milk cow shares

	Tomatoes Beef	Pastured poultry Raspberry	Potatoes	Eggs Pastured pork	Blueberries Processed veg Cantaloupe
#3	Eggs Cucumbers Beans/melons Onions Wheat Corn Peaches Peppers Pork	Arugula Greens Straw Potatoes Apples Fava beans Kale Artisan breads Spinach	Soybeans Onions Tomatoes Corn Lavender body butter Fresh veg Peaches Salad greens	Popcorn Summer squash Apples Peppers Green beans Goats milk laundry soap Poultry Goat meat	Gourds Corn Cucumbers Green beans Pork Asparagus Baked goods Tomatoes
#4	Goat meat Watermelon Wheatgrass Potatoes Tomatoes Pumpkins Honey Potatoes	Chicken Strawberries Zucchini Eggs Radish Cherries Tomatoes Lettuce	Pastured eggs Kale Milo Potatoes Sweet corn Melons Lavender lotion Value added	Blackberries Beets Eggs Plums Eggplant Tomatoes Eggs Goats milk	Tomatoes Onions Potatoes Blackberries Chicken Jam Fresh chicken Onions
#5	Veggies Squash Catnip Jams/jellies Milo Jams/jellies Apples	Produce Snap peas Onion Tomatoes Eggs Fall squash Cabbage	Vegetables Onion Alfalfa Radish Mixed lettuce Squash Lavender room sprays	Fresh fruit Pears Carrots Potatoes Onion Vegetables Peaches	Squash Summer squash Tomatoes Vegetables Eggs Eggs Squash/okra

4.6 Do you know the cost of production for your top 5 most profitable crops in 2012? Cost of production refers to all physical inputs, labor, marketing time etc. Mark one.

Yes	42
No	44

4.7 In 2012, was your operation GAP (Good Agricultural Practices) certified? Mark one.

Yes	2
No	88

4.8 In 2012, was your operation certified organic? Mark one.

Yes	2
No	90

4.9 In 2012, how many people did you employ at your farm operation? Include yourself and your family.

<i>ID #</i>	Number of part-time seasonal employees	Number of full-time seasonal employees	Number of part-time year-round employees	Number of full-time year-round employees	Number of unpaid volunteers/interns /family
22	5	2	0	0	4
23	40	0	0	0	0
24	0	0	0	0	4
25	0	0	1	0	1
26	0	0	0	0	2
27	0	0	0	1	0
30	0	0	0	2	0
31	2	2	0	0	0
32	20	22	0	1	0
35	0	0	1	1	0
37	0	0	3	0	0
45	0	0	0	3	2
47	10	0	0	0	5
48	0	0	0	2	0
50	0	0	1	3	0
53	0	0	0	0	4
54	3	4	2	4	0
55	1	0	0	0	2
56	1	0	0	2	0
58	2	0	0	0	0
59	0	0	0	0	2
60	0	0	1	1	0
65	1	0	0	0	0
66	2	0	3	0	0
67	0	0	0	0	2
70	2	0	0	2	0
72	0	0	0	1	5

73	2	0	1	1	0
74	0	0	0	0	5
75	8	0	0	0	0
76	0	0	0	0	0
77	0	1	0	0	0
80	0	0	0	0	2
81	1	0	0	0	2
82	2	2	0	0	1
83	0	0	0	0	2
84	0	0	0	2	0
87	0	0	0	0	4
90	0	0	0	0	2
93	0	0	0	0	0
94	2	0	1	2	0
95	4	1	0	0	0
96	0	0	1	1	0
99	2	0	0	0	0
100	0	0	0	1	0
101	0	0	0	0	5
102	6	2	0	0	3
103	0	0	0	1	0
106	3	0	0	0	1
107	0	0	0	1	3
109	6	0	0	1	2
110	3	3	0	0	0
112	1	0	0	1	0
115	8	6	3	5	0
118	0	0	0	0	6
122	3	2	0	0	0
123	8	0	3	0	2
125	0	0	0	0	1
127	0	0	0	2	0
128	0	0	1	0	2
129	1	0	0	0	2
131	0	0	0	0	0
132	0	0	0	0	3
134	0	0	0	0	0
136	0	0	0	0	4
138	0	0	0	0	5

139	0	0	0	1	1
142	0	0	0	2	1
144	2	0	0	0	0
145	3	0	0	0	0
146	1	1	1	1	1
147	5	0	0	0	4
149	0	0	0	0	4
150	50	0	1	2	2
152	1	0	0	1	2
154	1	1	0	0	2
155	2	0	0	0	0
157	2	0	0	0	0
162	1	0	0	2	1 - 2
204	0	0	0	1	4
205	20	10	0	5	0
208	4	0	2	0	0
211	0	0	0	0	3
215	0	0	0	0	0
218	9	3	1	1	1
220	0	0	0	3	2
X	0	0	0	0	1

Section 5: Demographic Data

5.1 What is your gender? Mark one.

Female	50
Male	41

5.2 What is your current age?

Age	<i>N</i>	Age	<i>N</i>	Age	<i>N</i>
32	2	50	4	64	3
34	2	51	1	65	3
36	2	52	2	67	1
37	3	54	2	68	1
38	1	55	2	69	1
39	1	56	4	71	3
40	1	57	4	72	1
42	4	58	6	73	1
43	3	59	2	74	1
44	2	60	6	80	1
46	2	61	5		
47	3	62	3		
48	3	50	4		
49	3	63	2		

5.3 What is the highest level of education you have completed? Mark one.

< High school	2
High school diploma/GED	5
Some college	26
Undergraduate degree	29
Vocational/technical degree	4
Some post-graduate work	10
Post-graduate degree	13

5.4 What is your ethnicity? Mark one.

Hispanic or Latino	2
Not Hispanic or Latino	88

5.5 What is your race? Mark all that apply.

American Indian or Alaskan Native	4
Asian	0
Black or African American	1
Native Hawaiian/Pacific Islander	0
White	86
Other: - Mixed	1

5.6 How many years have you been involved in your current farming operation?

Years	<i>N</i>	Years	<i>N</i>	Years	<i>N</i>
1	1	8	1	30	8
1.1	1	9	3	32	1
1.5	1	10	5	33	2
2	3	11	1	34	1
3	9	12	6	35	3
4	8	13	1	40	1
4.5	1	14	2	49	1
5	6	15	1	“Life”	4
5.5	2	19	3	“Over 20”	1
6	4	20	4		
7	7	25	1		

Additional comments:

Please share any additional thoughts or questions you may have about this survey, local foods, and/or your participation in Manhattan's food system. Write your thoughts below.

- Local food production is important to keep communities and help the local economy thrive. How the food is being produced is equally important. I feel food grown locally with the use of chemical fertilizers and synthetic pesticides is not any more sustainable than something grown organically in California and shipped 1,500 miles. I would take my chances with non-local organic vs. local conventional. A lot of emphasis is put on locally grown but I think more emphasis should be put on organic and local. Not necessarily certified organic but chemical free, sustainable growing practices. Also, I feel consumers need to be more educated on conventional vs. organic growing practices.
- Thank you for conducting this survey and sorry for not returning it sooner!
- Don't know if our farm qualifies in assisting in Manhattan's food system as we "cannot" sell our dairy products off the farm – not grade A. We have seen an increase in the public wanting our products and therefore travel to the farm to buy. The public seems to be more interested in knowing where their food products come from.
- I have maximized my production to maximize my sales at farmers markets. I am currently selling almost everything I produce at the farmers markets. It doesn't make sense to sell my products at lower cost to institutions. If they would pay what I sell them for at the farmers markets then I would be more interested.
- I think food hubs organized by farmers and run by someone else are a great idea. Local food is part of food security for our nation.
- The Douglas County Food Policy Council is working with 2 graduate business classes to study similar things. You might collaborate. Eileen Horn at Douglas County is our sustainability coordinator and could get you in contact with them.
- We are still learning about veg production and will be beginning our 5th growing season. Marketing and transportation seem to be our biggest difficulties in selling in the Manhattan area. We have ideas but are all too often busy just keeping up with production and lack of experience and time in marketing. We welcome any advice. And we would be willing to work with other producers.
- I appreciate the work you are doing to understand the local food system and I look forward to seeing the results of your survey.
- Though we have been selling eggs and ducks, our earlier attempts at vegetable production has been shelved for a couple of years to build the soil. The top soil was sold prior to our buying the property. We hope to be back up in produce production starting this year. Maybe future surveys would be more productive.
- We keep getting asked to sell to institutions, we have before, but their prices are too low for us to continue. The new push is for food hubs – we have also sold to them in the past and found the % they take to market takes all profit away.

- I need to explain we actually have 2 things going on here. My husband farms full-time with his family. Then I also bake etc. So some of our answers are a bit more complicated. Some pertain directly to the farm. Others directly to me and my business. As to Farmers Market ins Manhattan, I have concerns as to the infrastructure. There is a lot of inner-fighting and right now I think they are struggling with possible change and modern ways of operating vs. the “old guard”. While it is one of the oldest in the state, I fear it could be on its way out. Many reasons for this. I also don’t know why it has never grown much as the size of Manhattan has grown immensely. As for my business – it is growing but slowly! It takes more money than I have. I utilize all the free marketing I can – i.e. Facebook, Craigslist etc. I have brochures, business cards, I had a website until recently. This coming summer will be my 3rd season and I would like to gain \$100 in sales per week. More would be great. I would also like to pick up another restaurant or grocery store. A lot of people think only seasonal and vegetables as “local foods”. The meat producers and even us bakers need more help and exposure for year-round sales. The winter market has helped but not enough.
- I am unfamiliar with Manhattan in general, but am interested in the outcome of your research. Thank you!
- Not interested in selling wholesale cuts to stores, schools, etc. in Manhattan. Will expand with direct retail marketing to individuals or possibly wholesale to businesses who would purchase the whole animal. This could not happen until 2014 because of lack of product.
- Selling to the public through Farmers Markets is more profitable for our size of operation. It’s just a small husband and wife operation with a very small amount of summer help from a nephew. Any fruit over and above what we can sell at the Farmers Market is offered to the Merc (natural grocer) as we have it. No contract. They bought everything we brought to them last year.
- I’m wondering why KS doesn’t’ have a produce auction where farmers can sell their produce.
- Local foods – has some legs. Main problem is transportation and weight – need for refrig. - distance/amount ordered – all are problems that are hard to overcome. Example: Jerky vs. potatoes, warehouse vs. many outlets, rocks vs. milk.
- There are many good producers along I-70, from Salina to KC. We all need more positive publicity, and need to further educate the consumer about local food, COOL, etc.
- I am moving towards a local collaboration with customers. They come to community garden and my farm and we grow the food together.
- There is such a fine line between maintaining our production and the drought. It is the wild card causing crop failure and lack of income on a decent scale. We expended so much time, energy, and money in trying to keep plants alive in the heat. The last 2 years we lost 10% of our mature blueberry bushes and that hurts our production for years!
- Sorry, really cannot answer many of these questions at this time. Some would require several hours going through records which are currently with accountant.

- I am just starting back up after being gone with the Army for 4 years. I am a small scale operator selling surplus.
- The general public has gotten used to cheap food. With the increase in all inputs the cost of production does not always get covered by selling price.
- Direct to consumer sales of locally grown foods is as important as sales through institutions. Biggest hurdle is changing peoples' perception of true food costs.
- Small quantities of products (under \$50). Needs an outlet...the Farmers Market w/ \$25 for the opportunity to sell makes these quantities un-marketable. Collectively...these home gardeners out produce the large producers. More food produced locally would be bought/sold/consumed IF a SMALL quantity outlet were available.
- I am located 15 miles east of Wichita, Kansas. Even in the current drought cycle, I can produce more product than I am able to market. I do have coolers for storage but do not have refrigerated transportation. Delivering one or two boxes per stop is not a sustainable business plan to anyone who is keeping score. How do I market so I can grow?
- I hope you get lots of responses and good ideas.
- I wish we had local support/encouragement/market options. Our customers are all in the Topeka area – no local subscribers.
- People are becoming more concerned about the quality of their food are asking important questions such as: was it grown using herbicides and pesticides, was it irradiated, is it genetically modified, was the animal injected with hormones or given GMO feed.
- I found it sad and short-sighted to have a survey on local foods and then include a seed packet from an out-of-state producer. Why not utilize heritage seed growers here in Kansas such as Skyfire Heritage Seeds in Kanopolis, KS?
- Small acreage limits amount I can produce. If I could produce more, I could sell more because demand is there.
- We have recently expanded our operation with the purchase of 18 acres in 2011. We have about 5 acres of this land planted in fruit crops, but not in production yet. One thing that makes it more difficult for my operation are the government programs/incentives for churches and community gardens to produce locally grown food. They are eligible for certain grants that I am not, in addition to lots of free voluntary labor. As a result, I can't produce or sell food nearly as cheaply as they can. Government regulation such as GAP and employee (I-9) verification is also a concern.
- Knowing your cost of production and selling at a profit is very important, but in a diversified operation accurately allocating expenses to each enterprise is somewhat of a guess and sometimes there are some hidden costs. Projections and reality don't always match. Sustainable prices need to have a cushion built in to cover maintenance of farm infrastructure and equipment and the unexpected. Being involved in local food does allow more control over price received than traditional farm production enterprises.

Appendix B - Institutional Interview Questions

Institution Interview Questions – School Districts and University Dining

1. Who are your current major suppliers?
2. What are your main ordering methods?
3. How often do you place orders?
4. How far in advance do you meal plan?
 - a. What is the expected or average turn-around for any given product?
5. How much is wasted/thrown away/donated?
6. Are there any policies, guidelines, liability/safety laws you must abide by?
 - a. Do you take part in any federal or state programs?
 - b. Are you aware of GAP (Good Agricultural Practices) certification?
7. Do students or their parents/guardians ever ask about the source of their food they are being served?
8. What are your concerns about purchasing food locally?
9. What products would you be interested in purchasing locally?
10. What percentage of your budget could you possibly devote to local food purchases?
11. Would you be interested in contracting with a farmer or ensuring them guarantees in case of crop failure?
12. Would you be willing to pick-up the product if necessary?
 - a. Would you be interested in providing storage space for local products?
13. If the product required special processing, would you have the space and/or protocol for doing so?
 - a. What sort of culinary training do cafeteria workers have?
14. Would you be more likely to purchase locally if it came through a third-party source?
 - a. How much do you rely on a third-party for quality assurance?
15. Do any of the schools in your district have school gardens?
 - a. Are you able to utilize the produce from those gardens in the cafeteria?
 - b. If not, why? What would need to change to allow you to?
16. Are you aware of any programs for nutrition education that promote local food consumption or that expose students to aspects of farming or food production?
 - a. If so, has your district participated in any or have plans to participate?
17. Have you ever been approached by a local farmer wanting to sell their products to you?
 - a. How many?
 - b. Describe the relationship with these farmers? What has worked well and what has not?
18. What is your definition of “local” food or a “local food system”?

Institution Interview Questions – Hospital

1. Who are your current major suppliers?

2. What are your main ordering methods?
3. How often do you place orders?
4. How far in advance do you meal plan?
 - a. What is the expected or average turn-around for any given product?
5. How much is wasted/thrown away/donated?
6. Are there any policies, guidelines, liability/safety laws you must abide by?
 - a. Do you take part in any federal or state programs?
 - b. Are you aware of GAP (Good Agricultural Practices) certification?
7. Do patients or guests ever ask about the source of their food they are being served?
8. What are your concerns about purchasing food locally?
9. What products would you be interested in purchasing locally?
10. What percentage of your budget could you possibly devote to local food purchases?
11. Would you be interested in contracting with a farmer or ensuring them guarantees in case of crop failure?
12. Would you be willing to pick-up the product if necessary?
 - a. Would you be interested in providing storage space for local products?
13. If the product required special processing, would you have the space and/or protocol for doing so?
 - a. What sort of culinary training do dining staff workers have?
14. Would you be more likely to purchase locally if it came through a third-party source?
 - a. How much do you rely on a third-party for food purchases?
15. Have you ever been approached by a local farmer wanting to sell their products to you?
 - a. How many?
 - b. Describe the relationship with these farmers? What has worked well and what has not?
16. What is your definition of “local” food or a “local food system”?

Institution Interview Questions – Grocery Stores

1. Who are your current major suppliers?
2. What are your main ordering methods?
3. How often do you place orders?
4. What is the average turn-around for any given product? Days? Weeks?
5. What is your usual percent mark-up for fresh products?
6. How much processing of fresh product occurs here in the store? E.g. repackaging, cooking, etc.
7. How much fresh product is thrown away or donated? Any waste composted?
8. What are your standards for quality assurance?
 - a. How much do you currently rely on a third-party to help define these standards?
9. Are there any store policies or guidelines you must abide by when it comes to purchasing?
 - a. Are you aware of GAP certification?
10. Do customers ever ask about the source of the food they are purchasing?

11. Do you actively advertise local products?
 - a. Kansas products?
 - b. Products produced in the Midwest/Great Plains?
12. What products would you be interested in purchasing locally?
13. What are your concerns about purchasing food locally?
14. Would you be interested in contracting with a farmer or ensuring them guarantees in case of crop failure?
 - a. What sort of escape clause would you like in a contract? E.g. quality assurance, exact quantities etc.
15. Would you be willing to pick-up the product or provide transport of the product?
16. Would you be interested in providing storage space for local products?
17. Would you be more likely to purchase locally if it came through a third-party source? Why or why not?
18. Have you had local farmers approach you about selling their products? How many?
 - a. If you agreed to sell their products, can you describe the relationship and what has worked and what has not?
19. What is your definition of “local” food or a “local food system”?