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# Characterizing the Local Food Environment in Albuquerque, New Mexico: A Dual Perspective of Retailer and Consumer

Kathryn Lenzer

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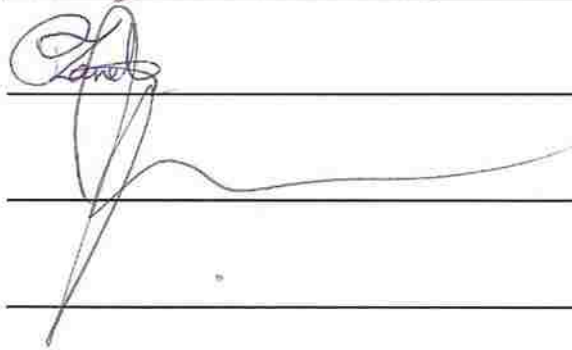
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**CHARACTERIZING THE LOCAL FOOD ENVIRONMENT IN  
ALBUQUERQUE, NEW MEXICO: A DUAL PERSPECTIVE  
OF RETAILER AND CONSUMER**

**BY**

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**THESIS**

Submitted in Partial Fulfillment of the  
Requirements for the Degree of

**Masters of Science  
Geography**

The University of New Mexico  
Albuquerque, New Mexico

**August, 2011**

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**ABSTRACT**

This research used local produce as a way to investigate the construction and meaning of the local food environment by food retailers and consumers in Albuquerque, New Mexico. The research consisted of three components. First, the observed local food environment was defined through store surveys that were conducted in 193 food retail outlets and farmers' markets in the Albuquerque study area. These surveys were performed in order to collect information, through signage and other advertising materials, about how retailers defined "local" produce. The subsequent qualitative text analysis on these materials allowed for several themes to emerge that characterized the observed local food environment. Spatial themes included natural, political, radial and conceptual boundaries, while embedded value themes included environmental, social, economic, cultural and quality values. Second, these resulting themes were combined into a Likert scale questionnaire that collected attitudes from consumers about local food in order to understand how the local food environment was perceived. Through the analysis of survey responses, consumers' attitudes towards themes found in the observed local food environment were evaluated. Consumer questionnaire responses were given an overall score and then categorized based upon the stores at which the consumer bought

produce. Third, consumer responses were linked back to their appropriate retailer category to conclude if attitudes about local produce were affected by where the respondent shopped for produce. Results indicate that there are many similarities between the retailer-defined and consumer-perceived definitions of local produce through the use of spatial criteria and embedded values, but these definitions are variable and the motivations for retailers and consumers to define various criteria of “local” are different. Additionally, although consumers do not appear to receive information regarding meanings and definitions of local produce exclusively through the retailers at which they shop, both retailers and consumers display a need to have some sort of defined space as “local”. However, despite this need to define a space as local, a stark absence of cartographic visualization was found within retail outlets to communicate the spatial meaning of local.



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## CHAPTER ONE

### Introduction

#### 1.1 Background

In the last half of the twentieth century, globalization changed countless facets of everyday life, including the agro-food system. Foods that once may have come from a nearby farm now travel an average of 1500 to 2000 miles to reach a consumer's plate (Halweil, 2002). This distant food sourcing, along with food borne illness scares, concern for the environment, unease about failing local economies and disquiet about the industrial, capitalist and homogenized food system have led many throughout Europe and the United States to call for a localization—or *re-localization*—of the food system.

Investigation of the local food system has often been approached from the aspect of the producer, but equally important is the perspective of the consumer and retailer. Consumers and retailers are uniquely interrelated in the realm of local food because retailers seek to create different ideas of local that are taken by consumers and further shaped by consumers' own ideas and values (Blake et al., 2010). As such, this project analyzed the spatial meaning and values inherent in the local food system from the perspective of both consumer and retailer and ultimately compared these observations and perspectives.

#### 1.2 Project Description

The current research investigates the construction and meaning of local from the viewpoint of both food retailers and food consumers in Albuquerque, New Mexico. No previous academic research has been conducted in Albuquerque to explore consumer construction and understanding of food environments, but work elsewhere shows that

consumer perception of local produce is defined by both space and values (Selfa & Qazi, 2005). Space refers to the explicitly spatial delimitation of local, whereas values can refer to societal values, such as personal connections, or environmental values, such as the reduced use of fossil fuels. Therefore, consumer perceptions of local were investigated by surveying attitudes about both spatial meanings and embedded values of local produce.

Some retailers also present perspectives on the meanings of “local” in order to distance themselves, for various reasons, from the industrialized and globalized food system (Blake et al., 2010). These retailers use in-store and external advertisements to identify “local” produce and assign meaning to local food, often as a proxy for freshness or as an indication of participation in local economies (Guptill & Wilkins, 2002). Thus, retailer perspectives on local food in Albuquerque, New Mexico were also examined through informal interviews and analysis of the content of local labeling and advertisements. The combined analysis of consumer and retailer perspectives provides a nuanced understanding of the spatial meaning and social, economic, environmental, cultural and quality values embedded in the local food environment in Albuquerque, New Mexico.

### **1.3 Research Goals**

In this research, the question that was answered is: How does the observed, retailer-created local food environment, defined by embedded values and spatial criteria, compare to consumer perceptions of the local food environment in Albuquerque, New Mexico? The ultimate goal of this research was to characterize the local food environment in Albuquerque, New Mexico by analyzing consumer and retailer

perceptions of the spatial characteristics and associated embedded values of produce that was considered “local”. Embedded values, in this case, refers to characteristics that are viewed as inherently favorable within the system. Embedded values have been considered a separate category here, but in some situations, it is possible for softer spatial delimitations to be inherent in value-oriented definitions of local produce. For example, if a product is considered “local” because it comes from the community, there may be values present such as economic support and personal trust as well as spatial proximity. These perceptions have been situated within ideas of place and scale in order to further characterize and evaluate the reflexivity of food localization in this particular study area. This research provides a novel approach to investigate the local food system that will contribute to the continuing geographic conceptualization of alternative food networks.

This research consisted of five objectives which have served to guide the research towards the final goal. These five objectives are:

Objective 1: Explore the spatial criteria that retailers apply to produce items that are labeled or advertised as “local”.

Objective 2: Investigate the embedded values that retailers embed in labeling or advertising of “local” produce.

Objective 3: Identify the spatial boundaries that consumers use when defining their perception of “local” produce.

Objective 4: Evaluate the embedded values that are important and pertinent to consumers when asked about “local” produce.

Objective 5: Assess relationships between the spatial criteria and embedded values that retailers use to label and advertise “local” produce with the way consumers perceive “local” produce.



## **CHAPTER TWO**

### **Literature Review**

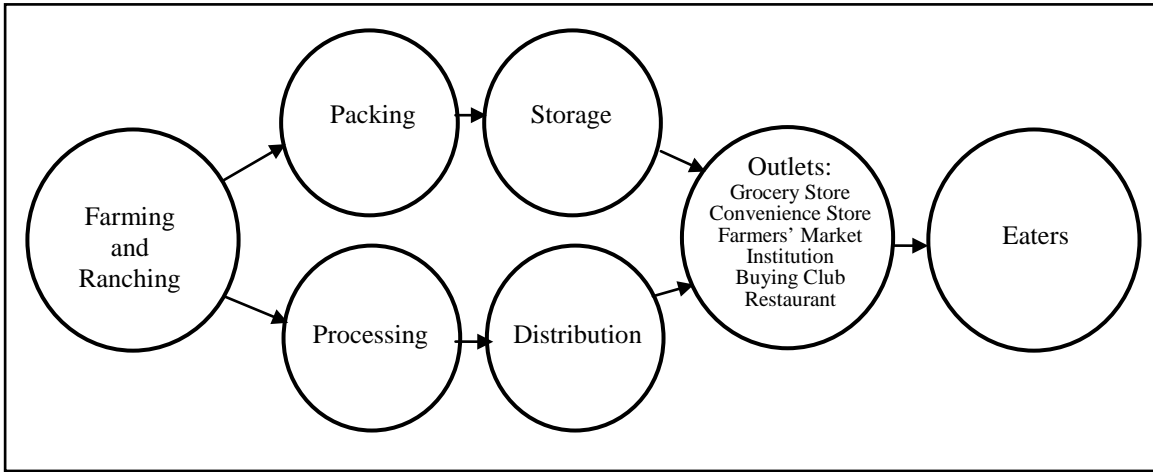
#### **2.1 General Context**

This research is informed by several bodies of academic literature, which include food geography, alternative food networks and local food networks. These bodies of literature are relevant because as agriculture became more globalized, homogenized and mechanized over the past several decades, academic researchers and popular activists alike have made attempts to understand this modern way of food provisioning along with the alternative food systems that have appeared in direct opposition. The traditional food system itself includes many components that work together in order to move food products from their origins to consumers' tables (Figure 1). While working under a similar framework, alternative food networks, unlike industrialized modern agriculture, seek to incorporate embedded social, economic and environmental values throughout the system. These alternative food systems can manifest in a number of different ways, including food system localization, which along with embedded values, seeks to place spatial and locational boundaries on the food system. Academic and popular literature actively discusses local food systems, but is often blind to the interplay that occurs between the retailer and consumer components of the system.

#### **2.2 Food Geography**

Food geography, as a subfield of the larger discipline, has remained comparatively small in the United States despite its relative popularity in the United Kingdom. Food is a very broad topic and is therefore intimately tied to economic, political, cultural and environmental geography, as well as rural sociology (Guthman,

Figure 1: Diagram of food system components



Source: New Mexico Food and Agriculture Policy Council, 2009

2009). Historically, the study of food within geography has been associated with agricultural geography, despite the questioning of agriculture's place in geography (Marsden et al., 1996). Following the 1980's, agriculture, and thus food, lost its position as a subfield and became uncomfortably situated somewhere within and between rural geography and economic geography (Morris and Evans, 2004). During this time, geography focusing on food and agriculture was approached from a production perspective and mostly analyzed using quantitative methods (see Bowler and Ilbery, 1987 for an attempt to stimulate debate).

However, a 'culture turn' began to infiltrate the discipline and even agricultural geographers started to explore various nature-society relations (Little, 1999). This can be seen as an enculturation of the agro-food system, which allowed scholars to more fully integrate agriculture with society and culture at large (Ilbery and Kneafsey, 2000). It was during this time that Atkins (1988: 282) argued for an explicit transformation in the subfield by boldly writing that "agricultural geography is dead: long live the geography of food!" With such sentiments, many geographers began to shift their focus from analyses that relied exclusively on the production aspects of food and agriculture to a new perspective of food that explicitly uses cultural ideas in a context that is removed from production (Bell and Valentine, 1997; Cook and Crang, 1996). Also during this time, there was a shift to poststructuralist theory and qualitative research as food geographers began to grapple with consumer power and the cultural contexts and consequences of food (Friedberg, 2003). Often, there is still an enduring disconnection between production and consumption in agro-food studies, with the consumer remaining buried or hidden behind a production-centered framework or vice versa (Arce and Marsden, 1993;

Marsden and Arce, 1995; Murdoch and Meile, 1999; Morgan and Murdoch, 2000; Goodman and DuPuis, 2002).

However, amidst conceptual confusions and a dominance of political economy, the notion of food networks entered into agro-food studies in the 1990s (Richardson and Whatmore, 2009). Instead of a systems-based, production-centered or consumer-centered conceptualization of the agro-food system, the idea of food networks became a way to conceptually reposition the food system (Marsden and Arce, 1995; Marsden et al., 1996; Whatmore and Thorne, 1997). The connectivity of producer, distributor, retailer and consumer meant that relationships were no longer linear and static, but instead a network of dynamic actors that have embedded place into the food system. In this sense, embeddedness frames the context in which interactions occur between various actors within a particular network. Consideration is given to the places, society and human relations that create and are created by food networks (Whatmore and Thorne, 1997; Richardson and Whatmore, 2009). Importantly, food networks also stimulated academic thinking about the social interactions that occur as a result of linked relationships between producers and consumers (Arce and Marsden, 1993). For example in the international fruit and vegetable trade, consideration is given to the “social life of commodities” in order investigate how such products could become embodied with the social practices, actions and understandings of both the producers and consumers despite large spatial divisions (Arce and Marsden, 1993).

As ideas of food networks developed, scholars began giving attention to globalized economies and lengthened food chains, which has sparked interest in reconnecting food producer with food consumer (Duffy et al., 2005; Winter 2003). One

particular way of making this reconnection has been done by ‘following’ a particular food (Cook et al., 2006) such as beef (Strassart and Whatmore, 2003), papaya (Cook, 2004) or tortillas (Lind and Barham, 2004). Through this method, significant historical and cultural interactions have become apparent, as exemplified with mushrooms and identity (Feinberg, 2003), broccoli and desire (Fischer and Benson, 2006) and heirloom tomatoes as cultural symbols (Jordan, 2007). The value of the cultural-historical approach is especially apparent when reading Jordan (2007), which refers to heirloom tomatoes as cultural objects with a spatial dimension that went from being secretive to trendy. This perspective reveals important intersections between producers and consumers. As producers use genetically modified organisms (GMOs), consumers respond by turning to organic food; or as producers attempt to preserve biodiversity, consumers respond favorably by supporting local food or the Slow Food movement (Jordan, 2007). Slow Food serves as another example of an alternative food network. The organization is described as the leader of an international movement that began in 1986, which believes that everyone has a right to good food and must subsequently protect sustainable and traditional food practices as well as protect biodiversity and animal and human health (Slow Food International, 2011).

Although the idea of linkage between producer and consumer forms the foundation for understanding food networks, scholars began to think in new ways amidst a modernizing society. As industrial and globalized agriculture came under scrutiny, researchers began to imagine the space or distance between actors within the agro-food system. As a result, alternative food networks developed based on different values, and often explicitly to challenge productivist agriculture and lengthened food supply chains.

### **2.3 Alternative Food Networks**

As the conceptual and physical spaces in food networks increased, food producers and consumers have attempted to make social and spatial reconnections with each other through various forms of alternative food networks (Winter, 2003). Alternative food networks have received significant attention in Europe, including work on the organic sector (Ilbery et al., 1999) local food systems (Feagan, 2007) and the 'quality turn', which refers to the attention given to quality assurance in the food systems as a result of human health, environmental and animal welfare concerns (Goodman, 2003; Morris and Young, 2000; Winter, 2003). The body of literature regarding alternative food networks in the United States has not developed in the same way as its European counterpart due to a heavy focus on contesting globalization rather than encouraging rural restructuring.

There is no agreed definition of an alternative food network. To some, alternative food networks may be a way to categorize the attempts of producers and consumers to negotiate the globalized and industrialized food system in order to create new and quality-driven systems for providing food (Winter, 2003). For another, alternative food networks may be described through horizontal network linkages that encourage and support sustainable rural economic development (Kneafsey et al., 2001). Despite different conceptualizations, one theme that remains consistent is that alternative food networks seek to spatially, economically and socially bring food producers and food consumers closer together at various scales (Maye et al., 2007).

In the United States, alternative food networks often lean towards social movements that contest the hegemonic and corporate industrial food system, and therefore often assess such networks in terms of how and if they can make changes to the

food provisioning system (Goodman, 2003). Literature in the United States about organic alternative food networks has been criticized for giving attention to food safety and health claims but neglecting labor, working conditions and other unjust social relations of food production and consumption (Goodman and Goodman, 2009).

In contrast, European alternative food networks are situated within public debate about food safety, agricultural policy reform and rural development (Goodman, 2003). Localism in the European literature is often viewed as market-led, in which products can be commodified and sold at premium prices, especially as a response to the UK outbreak of Food and Mouth Disease in 2001. Additionally, research of alternative food networks in Europe highlight the role of the farmer as an important actor in a new form of sustainable rural development, but does not escape criticism for neglecting issues of uneven development, low wage employment and rural poverty (Goodman and Goodman, 2009).

Concepts of quality, embeddedness and the local appear frequently in alternative food network literature. All three concepts are intimately related, but will be explored individually with implicit connections, acknowledging that deciphering differences between quality, embeddedness and local is a formidable challenge (Goodman, 2003). First, the 'quality turn' refers to the notion of bringing quality assurance back into the food system, often after consumer fears of human illness and food safety (Winter, 2003). When analyzed further, aspects of food quality can include the method of production, place of production, traceability, raw materials, safety, nutrition, sensual attributes, function and biology ( Morris and Young, 2000). Examples of the 'quality turn' include organic production, quality assurance programs and protective strategies to give locally

produced food products more value (Goodman, 2002). Quality, however, is a socially constructed, contested term that can have different meanings to different actors within the agro-food system. An example is that for consumers, quality may relate more to concerns over food safety, whereas producers may see quality as an opportunity to make profit (Morris and Young, 2000). In an analysis of discourses surrounding food quality and quality assurance schemes in the United Kingdom, researchers find that organizational change is fundamentally necessary for quality food production, but may be difficult due to power struggles between various actors in the agro-food system (Morris and Young, 2000).

A second aspect of alternative food networks is embeddedness, a term borrowed from economic sociology that refers to the social ties, reciprocity and trust present in direct agricultural markets, such as farmers' markets and community supported agriculture (Hinrichs, 2000). These social relationships, however, must work hand in hand with market forces to create dynamics in which "social ties, personal connections and community good will are often appropriately seasoned by self-interest and a clear view of prices" (Hinrichs, 2000:301). An illustration of embeddedness in direct markets is given as Sage (2003) describes a Country Market in Ireland, in which members market their home produce and crafts one day a week at a specified venue. The social embeddedness of the markets becomes clear through interviews with members, who state that the markets provide a meeting place for members to create social ties as well as provide monetary gain (Sage, 2003).

The idea of embeddedness, however, has not gone without critique, including within economic sociology (Krippner, 2001). Geographers have also expressed concern



with the idea of embeddedness due to its lack of clear definition and theorization (Martin and Sunley, 2001). Regardless, it is a term that remains in the conceptual vocabulary of sociologists and geographers alike.

A third aspect of alternative food networks is the local, a primary focus of the present research. Food system localization has been viewed by many as the antithesis to globalization. This is due to the idea that local food systems seek to reduce the social and physical space between food producer and food consumer. However, this binary thinking of global versus local illustrates the idea that the local is a contested term.

## **2.4 Local Food Networks**

Local food networks, as a specific type of alternative food network, are complex. Scholars have theorized local food networks in various ways in order to characterize the manifestation of local food systems in society. However, local food systems are rarely easy to classify into neat categories, especially when viewed at various spatial scales. Local food network initiatives, when investigated individually, provide insight about how the consumers, retailers and other actors within the network create a sense of place for those involved in the local food initiative.

### **2.4.1 Notions of Local Food Provisioning**

The localization of food systems is often referred to as *re-localization* because actors within the food network are *returning* to a time before productivist agriculture, in which there was a greater regional self-reliance on food (Hinrichs, 2003). As such, localization is often made into a catchword that stands as a direct counterpoint to globalization. For example, several perceived binary global/local attributes in the agro-food system can be seen in Figure 2. This line of thought that compartmentalizes local

*Figure 2: Perceived binary global/local attributes in the agro-food system*

<b>GLOBAL</b>	<b>LOCAL</b>
Market economy	Moral economy
An economics of price	An economic sociology of quality
TNCs dominating	Independent artisan producers prevailing
Corporate profits	Community well-being
Intensification	Extensification
Large-scale production	Small-scale production
Industrial models	“Natural” models
Monoculture	Bio-diversity
Resource consumption an degradation	Resource protection and regeneration
Relations across distance	Relations of proximity
Commodities across space	Communities in place
Big structures	Voluntary actors
Technocratic rules	Democratic participation
Homogenization of foods	Regional palates

Source: Hinrichs, 2003:36

as good and global as bad is a form of localism called normative localism. Although this strict dualist approach may be appealing to those who are in direct opposition of the global food system, it may be dangerous due to the oversimplification of the dynamics of local and global food systems (Hinrichs, 2003).

Moving beyond purely binary assumptions, scholars have found other ways to conceive and investigate food system localization. The first of these ways is through the idea of defensive localism. As the term suggests, defensive localism emphasizes the resistance to external forces in order to protect the local. In this way, defensive localism “imposes rigid boundaries around the spatial ‘local’ and minimizes internal difference in the name of some ‘local good’ (Hinrichs, 2003:37). The response from within the local may be seen as reactionary, in which nativist feelings appear elitist to the non-homogeneous, outside others (Hinrichs, 2003). As an example of defensive localism in relation to quality, an empirical study of purchasing patterns in five rural locations in England and Wales showed that the food locality mattered more than the method of production (Winter, 2003). This example of defensive localism is further echoed after the Food and Mouth Disease epidemic in the UK in 2001, where one study area, Devon, was particularly hard hit by the disease and began campaigns to buy or retail local products as much as possible (Winter, 2003). One critique of defensive localism is that it is a weaker approach to alternative food systems because it focuses on the foods themselves instead of the network through which they travel (Watts et al., 2005).

Another view of the local is through diversity-receptive food system localization, which acknowledges and incorporates more complex cultural, social and environmental factors (Hinrichs, 2003). Along this line of thought, the local is seen as “embedded

within a larger national or world community, recognizing that the content and interests of ‘local’ are relational and open to change” (Hinrichs, 2003: 37). This may pose difficulty since many local food systems work by distinguishing and highlighting certain products of a specific place or region (Ilbery and Kneafsey, 2000b; Feagan, 2007). However, the diversity-receptive notion does not isolate the local, but instead conceptually positions it within the larger global community (Hinrichs, 2003).

Another conceptualization of local food systems is reflexive localism, which was introduced by DuPuis and Goodman (2005), who warn against an “unreflexive” localism. Unreflexive localism comes from the idea of a “perfectionist utopian vision of the food system in which food and its production are aligned with a set of normative, pre-set ‘standards’” (DuPuis and Goodman, 2005: 360); this could potentially lead to negative social justice consequences and leave the local open to corporate invasion. Clearly, reflexive localism is similar to diversity-receptive food system localization due to its attempts to move beyond a normative or reactionary localism in order recognize that contested social issues such as human rights and identity can arise within isolated, local spaces (Goodman and Goodman, 2009). Moving beyond an unreflexive and reactionary localism, reflexive localism “would understand local food systems not as local ‘resistance’ against a global capitalist ‘logic’ but as a mutually constitutive, imperfect, political process in which the local and the global make each other on an everyday basis” (Goodman and DuPuis, 2005:369).

#### **2.4.2 Scale and Local Food**

Despite little explicit engagement of localism with the politics of scale, local is a charged term, that often stands opposite of the global. As localization, or relocalization,

of food systems has occurred, there has also been a respatialization of production, consumption and other components of the agro-food system. In this light, it is helpful to discuss the role that scale has within food system localization and how the notion of scale can be problematic to actors within the agro-food system.

There has been an enduring tendency to reify the local and global which may have limiting effects because it does not allow for the social construction of scale at either the local or global level. Researchers warn against a localism that does not take into account social and political conceptions (Hinrichs, 2003; Goodman and Dupuis, 2005; Watts et al., 2005). For example, a study in the UK showed that convenience, health and status are also contributors to how consumers conceptually define their ideas of local (Blake et al., 2010). In this same investigation, consumers did not find a thirty mile definition of local to be important or any different than fifty or one hundred miles. However, respondents considered local to be a tangible and reasonable designation at either around one mile or when attached to social meanings (Blake et al., 2010). In the United States, the social construction of scale of local food occurs at a sub-national scale: local food in Iowa is considered food that is produced within Iowa (Hinrichs, 2003). The scale of local food systems can also be defined by political boundaries, as in the case in Ontario, where consumers considered local food to be bounded by county borders (Smithers et al., 2008). Clearly, there are multiple ways in which the scale of local food can be created and understood, perhaps due to differences in experience and location. This realization hints to the idea that local must be deciphered as the outcome of socio-political struggles and cultural values as well as consideration for existing political boundaries.

Additionally, scale can create difficulty within local food systems for the actors involved, especially if the global is viewed as a developer of the local. For example, a case study of Washington State demonstrates that although a demand for local, organic produce provides opportunities for small-scale farmers, those same farmers find that labor time increases and economic uncertainty still looms due to increased time costs of direct marketing and competition of corporate organic operations (Jarosz, 2008). Other concerns arise when locally-based entities, such as community food service projects, are pushed to scale up, but “carry the risk that locally rooted programs will transmogrify into large-scale, faceless bureaucracies, disconnected from the local, community-based roots that made them successful in the first place” (Johnston and Baker, 2005:321). The success of such scaled up local initiatives would involve a dynamic politics that encouraged decommodification and the establishment of food as a basic human right (Johnston and Baker, 2005).

Local food initiatives also occur at a very small scale. Although exploring the differences between reflexive and defensive localism provides understanding to the varied ways of conceptualizing food system localization, these ideas tend to ignore the dynamics that occur within local food initiatives at a micro scale. In an assessment of the local food system in Gloucestershire, researchers found three types of localism that are at work. These “localisms” have not been widely used by scholars engaged in local food debate, but represent the difficulty of finding neatly organized and clear cut understandings *within* local food networks. The first of these is termed parochial localism, which, similar to defensive localism, emphasizes the need to support and protect local farmers as well as maintain a local area of tradition (Morris and Buller,

2003). The second is termed flexible localism, which favors localism as “a means to an end, rather than an end in itself” (Morris and Buller, 2003:565). In this way, retailers used local in a fluid sense that allowed them to sometimes call local products “British” and other times referring to the local as “within a 25 mile radius”. Producers also engaged in a flexible localism that allowed them to lengthen their networks, possibly to the point of buying from outside the country to secure a product that can be branded locally. Finally, the researchers refer to a competitive localism, in which new forms of food system localization have a negative effect on already established retailers who consistently sourced local products (Morris and Buller, 2003). The latter two localisms have not merited the attention of any scholars in the United States.

Nevertheless, social and economic exclusion within local food initiatives have indeed caught the attention of researchers in the United States. In an idealistic and normative view of local food provisioning, local food systems “aim to be economically viable for farmers and consumers, use ecologically sound production and distribution practices and enhance social equity and democracy for all members of the community” (Feenstra, 1997: 28). However, in practice, local food initiatives may not always achieve such notions of economic viability and social equity for consumers (Hinrichs and Kremer, 2002). These sentiments are echoed again through a discussion of the “local trap”, in which the researchers argue that local food systems are not inherently any more sustainable or socially just (Born and Purcell, 2006).

There has been criticism that alternative food marketplaces are “white spaces” both physically and discursively (Guthman, 2008) and that whiteness is a prominent feature of alternative food initiatives (Slocum, 2007). However, farmers’ markets are

viewed as serving more racially and class diverse groups than community supported agriculture (CSA) schemes due to the observation that farmers' markets tend to take on the characteristics of the neighborhood in which they are situated. However, interviews with farmers' market and CSA managers in California highlight some barriers that prevent universal participation. One manager states that "Hispanics aren't into fresh, local and organic products" while another refuses strategies to attract low-income consumers because it "may discourage the high-end consumers that we cater to" (Guthman, 2008:393). Additionally, there is concern that the popularity of local food in the United Kingdom may perpetuate existing inequalities due to the idea that only people of a certain class, education and neighborhood will have access to local food (Blake et al., 2010). Referring again to the normative expectations of local food initiatives, social justice has been noted to be skewed or missing from similar initiatives in a study of 37 local food projects in California (Allen et al., 2003). Concern was given to social issues of food access and support of small farmers, but did not touch on job security, recognition or civil rights for farm workers (Allen et al., 2003).

### **2.4.3 Conceptions of Place in Local Food Systems**

Localization of food systems also creates images of places. The global-local binary can be revisited here since it is often on this notion that local food initiatives root themselves in a particular local place in defense of the global. Because of this dualist conceptual construction, local food initiatives are often expressed in explicitly spatial terms (Harris, 2010). Despite ideas that modernity and globalization has created a world of placelessness, "the presence of place in people's lives persists unyieldingly" (Pascual-de-Sans, 2004: 349). Furthermore:



“The spatial realignments inherent in the modernization project writ large are held to be the degradation and loss of place, the local, and community. Such ‘thinning out’ and diminishment of meaning an attachment associated with humanity’s arguably age-long relationship with *place* compels consideration and understanding of LFS efforts. Local food systems are oriented around some form of geographic delimitations of space variously labeled the local, place and the community”. (Feagan, 2007: 33, emphasis in original)

Blake et al. (2010) relate these ideas to the food system by arguing that place needs to be engaged with the food system in order to define what foods are consumed and how people value and connect with those foods. Perhaps the best way to explore such notions is to discuss how place is manifested through various forms of local food initiatives. The foodshed, community supported agriculture and farmers’ markets will be briefly explored in turn in the following section.

More than a local food initiative in itself, the foodshed is an idea that can serve as a bridge between theorizing a local food system and creating it (Kloppenburger et al., 1996). The idea of the foodshed is derived from the environmental concept of watershed, which describes the boundaries of natural water drainage systems. Likewise, the replacement of the word “water” with “food” brings together the social with the natural “shed” in order to envision the flow of food into a particular place mediated by both natural features and social values. Within the foodshed, an area can be self-reliant on food while promoting social and environmental justice (Kloppenburger et al., 1996).

Although the boundaries of a foodshed are not meant to be rigidly defined, the foodshed is seen as socially, economically, ethically and physically infused in a particular place (Kloppenburg et al., 1996). Speaking in normative terms, embeddedness is key to the idea of the foodshed because it includes a moral economy that counteracts global market forces. Instead, sustainable relationships are fostered amongst people and between people and nature in order to forge a spirit of community among all actors in the system. This notion of community and moral economy within the foodshed may serve as a way of gaining a sense of place amidst a globalized food provisioning system.

Similar sentiments are true for community supported agriculture (CSA), which is a form of local food provisioning in which the localization of the food system happens around the idea of community (Feagan, 2007). Although CSA programs can be set up in various ways, the foundational idea is that a direct link between producer and consumer is achieved by consumers paying for a share of the farm's costs up front and in return, receive a regular supply of products from that farm. Similar to the foodshed, the CSA has an embedded moral economy rooted in a specific place that is valued by the people involved. However, as discussed previously, idealistic notions of place and community may fail because such places can become contested due to possibilities for inequality and skewed reciprocity amongst consumers and producers (Hinrichs and Kremer, 2002).

The final method of food localization to be discussed here is that of the farmers' market. Farmers' markets also work on the premise of shortening food supply chains and can be described as "...a place and space where people who care about healthy food, farming and the environment might gather to support local producers and each other" (Smithers et al., 2008). Sense of place may also be reinforced within farmers' markets

because such markets tend to mirror the demographics of the area in which they are located (Guthman, 2008). Interestingly, set within the context of the United Kingdom, it has been suggested that farmers' markets can be read as nostalgic places that attempt to take participants back to a time where life was remembered to be generally more wholesome (Holloway and Kneafsey, 2000). In this sense, a reactionary space has been transformed into a place where traditional values are emphasized over the engagement of a fierce battle against the global.

#### **2.4.5 Consumer Perception and Behavior in Local Food Systems**

Perhaps the best way to understand the consumer within local food systems is to acknowledge that it is difficult to accurately generalize consumer behavior. The perceptions and behavior of consumers are often situational and dependent on geographical and historical context (Selfa and Qazi, 2005). How consumers understand and react within this context will likely influence their choices about buying local food (Blake et al., 2010). One brief example from Washington State indicates that there may be a significant rural-urban divide in the perception of local and organic foods (Selfa and Qazi, 2005). Residents surveyed in an urban county showed a strong preference for buying organic foods but less of a preference for buying local foods as an act of support for farmers. The opposite proved true for survey respondents in two rural counties, possibly due to concerns in these areas that the organic agro-industrial production is not more environmentally or socially just (Selfa and Qazi, 2005). Because of contextual importance and variability, local becomes a relative concept that is also variable and possibly contested (Blake et al., 2010; Selfa and Qazi, 2005).

Clearly, finding the boundaries of local in the context of food has proved difficult (Allen et al., 2003; Anderson and Cook, 1999; Hinrichs, 2003). However, there is little advocacy within academic literature to create a formal and solidified definition of what constitutes local food. Local may depend more on location due to factors such as environmental restrictions, political infrastructure or economic viability. Therefore, an exclusive and concrete definition of local would be difficult to furnish and inevitably create disagreement. Local defined on the basis of miles has been described as “arbitrary” and additionally a potential contributor to social inequalities (Blake et al., 2010: 423) Despite challenges, there are several studies that explore the aspects that consumers consider important when defining and constructing meaning of local food. These factors can be divided into two categories of spatial association and social valuation. For example, respondents in England and Wales cited the support for local farmers, support for the local economy, freshness, taste and knowing where the product came from as reasons for buying local products (Winter, 2003).

In the United States, consumer constructions of local are surprisingly similar, although there is less emphasis on sustaining rural development. The responses from consumers in upstate New York about meanings given to local food can be seen in Figure 3. The majority of consumers cite the location in which the product is produced as at least part of the meaning of local, while still acknowledging other factors, such as quality and method of production (Wilkins et al., 2002). Results of a telephone survey in Washington State, in which consumers were asked “From your perspective, what does ‘locally grown or produced food’ mean to you”, show that proximity or geographic

*Figure 3: Meanings given for local food by consumers in New York State*

<b>Category</b>	<b>Total (146)</b>
Location Produced	76.7% (112)
Uniqueness/place specialty	11.6% (17)
Distribution/Not transported/Marketing	4.8% (7)
Quality	2.1% (3)
Other	2.1% (3)
Production Method	1.4% (2)
Cuisine	1.4% (2)
Seasonal	0% (0)

Source: adapted from Wilkins et al., 2002:423

identification is the most cited answer, followed by freshness/taste/quality and producer-consumer links, respectively (Selfa and Qazi, 2005: 459).

Unmistakably, the meaning and construction of local among consumers is flexible. In a study of several farmers' markets in Ontario, researchers found that consumer respondents within the farmers' markets cited the "region/neighboring region" as the most popular boundary of local food, followed by "county/neighboring county". Interestingly, consumers were willing to expand these geographic boundaries if it meant a higher presence of organic foods within the market (Smithers et al., 2008). A similar pattern was seen in Washington State, in which consumers rated freshness and taste as "very important" buying factors, even above being "Washington grown" or "Grown locally"(Selfa and Qazi, 2005). This indicates one aspect of the flexibility of local, which indicates consumers may trade off proximity in order to secure products with more desirable qualities (Smithers et al., 2008).

#### **2.4.6 Retailers and Local Food Systems**

Although vendors at farmers markets have received attention (Smithers et al., 2008), food retailers with permanent locations have been neglected within local food network studies, even despite the evidence that retailers can influence consumers' perception of local foods (Dunne et al., 2011). The marketing strategies and discursive practices of retailers consistently convey messages to consumers about the meaning of food and whether or not a food is ordinary or exceptional, thrifty or self indulgent (Blake et al., 2010). For example, one grocery retailer in the United Kingdom uses local in order to promote quality by emphasizing that the production of local food is of higher quality. This same retailer advertises quality through "...depictions of nature, heritage and

tradition. Advertising photography includes pictures of white male farmers, in sepia tones, picking lettuce or tending cattle” (Blake et al: 420). This discourse is a way of attaching both a certain class and race to local food at this particular retailer; it becomes a white shopping practice made through a white tradition. This particular grocery store locates in places with little racial diversity, which is unsurprising since retailers focus on consumers as a way to generate revenue and therefore tend to take on identities similar to the communities they service (Guptill and Wilkins, 2002). More investigation is necessary to understand retailers role within local food networks and the effects that retailers have on consumers’ construction and understanding of the meaning of local food.

## CHAPTER THREE

### Study Area

#### 3.1 Demographic Overview

The study area for this research is not bound by strict borders, but incorporates much of the four counties that make up the Albuquerque Metropolitan Statistical Area (AMSA) (Figure 4). These counties are Bernalillo, Sandoval, Torrance and Valencia and cover about 9,300 square miles, which, for reference, is about the size of New Hampshire (US Census Bureau, 2000a, 2000b). This area has a total estimated 2009 population of 857,903 people (US Census Bureau, 2010) and at the 2000 Census, had a population that was 69.9% White, 5.6% Native American and 2.5% African American. The Hispanic or Latino population of any race was 41.6% (US Census Bureau, 2000c). Median family income for the study area was \$46,037 at the time of the 2000 Census with 10.4% of families below poverty level (US Census Bureau, 2000c).

There were several reasons for choosing this study area. First, for the United States, the area has a high percentage of residents of Hispanic/Latino and Native American residents. Previously studied local food systems have been in areas that have a lower percentage of Hispanic/Latino and Native American residents. The prevalence of these groups in the area where this research occurs may provide insight on the participation and conceptualization of local food initiatives in a new way. Second, there are several local food initiatives underway within the study area, making research on local food accessible and insightful. Additionally, New Mexico is rich in traditional culture which may also provide novel perspective on these already established local food initiatives. Finally, the chosen study area provides a good opportunity to study the



conceptualization and implementation of the spatial boundaries of local due to the divided physical terrain and proximity to an international border with Mexico.

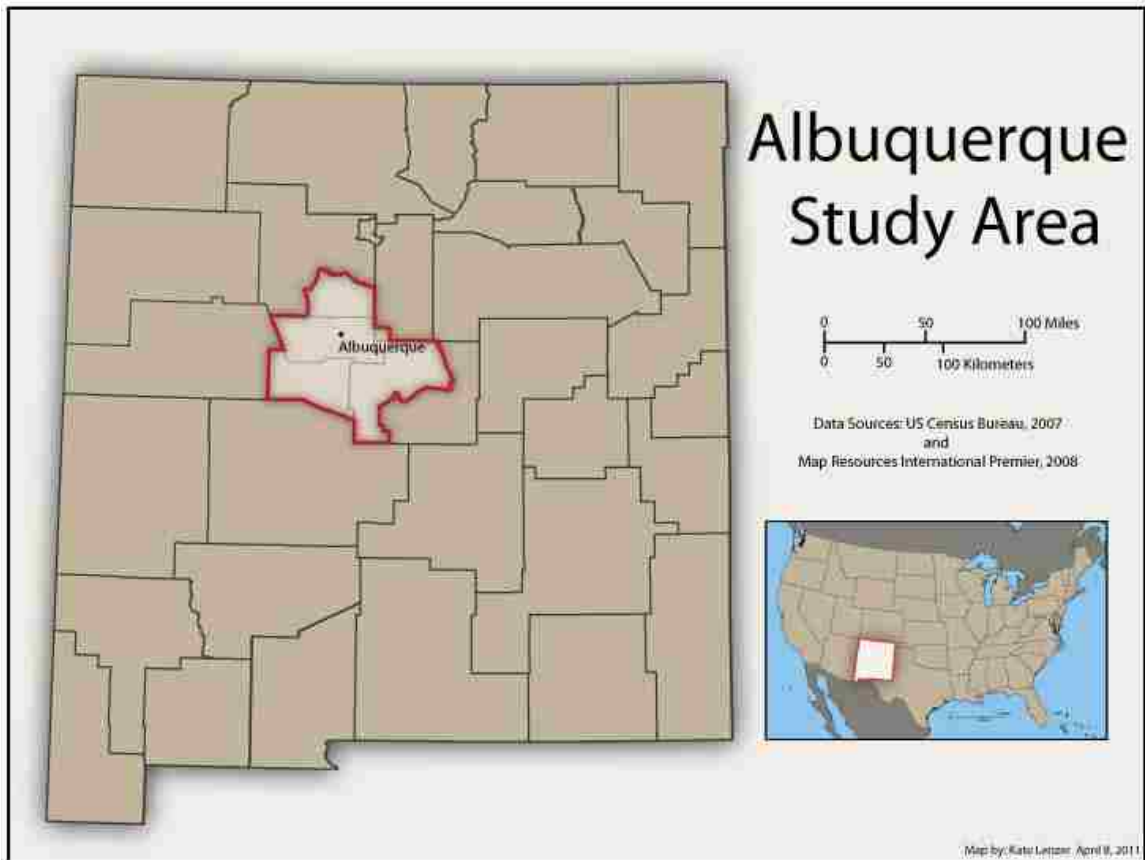
### **3.2 Food Systems in New Mexico**

#### **3.2.1 Agricultural Production**

When considering local and alternative food systems in an area, it is critical to understand the trends in agriculture as well as the products that can be produced in order to evaluate the viability and extent to which local food production can be sustained. The majority of information presented below is based upon systematic agricultural censuses, which does not account for backyard gardeners. This is an important consideration and recognition of limitation since many people view the produce from their personal gardens as a component of the local food network.

Historically, agriculture in the form of pastureland and cropland has consistently been an important component of the economy in New Mexico. The number of farms in New Mexico peaked in 1935 (US Department of Commerce, 1956), experienced a drastic reduction by 1974 (USDA, 1992a, 1992b) and then steadily gained in number again to 2007 (USDA, 2007) (Table 1). During the time when the number of farms was reduced, the acreage in farmland remained steady due to the increased average size of the farms. This is not surprising because technological advances were made to spur industrial agriculture before 1987, which created an increase in farm size that lasted until 2002. However, from 2002 to 2007, the number of farms in New Mexico significantly increased while the size of the average farm decreased to less than that in 1954 (USDA, 2007).

Figure 4: Map of the Albuquerque Study Area



*Table 1: Historic agricultural indicators for New Mexico*

	1920	1935	1954	1974	1987	1992	2002	2007
Number of Farms	29,844	41,369	21,070	11,280	14,292	14,279	15,170	20,930
Farmland (millions of acres)	24.4	34.4	49.5	47.0	46.0	46.9	44.8	43.2
Percent of total land in farmland	31.1	43.9	63.6	60.6	59.2	60.3	57.7	55.7
Average size of farm (acres)	817.9	831.5	2,347	4,170	3,230	3,281	2,954	2,066
Number of corporate operations	-	-	-	-	753	794	631	839
Percent of corporate operations	-	-	-	-	5.3	5.6	4.2	4.0
Organic production (acres)	-	-	-	-	-	-	3092	71,607
Number of farms marketing at CSAs	-	-	-	-	-	-	-	139

Sources: USDA, 1992a, 1992b, 1997, 2002, 2007, 2009; US Department of Commerce, 1956

In 2009, the number of farms has again increased from 2007 and account for 43 million acres of land within the state (USDA, 2010a). Agriculture contributes \$2.5 billion to the state economy, which makes it the third largest industry in New Mexico (New Mexico Food and Agriculture Policy Council, 2009). Despite being an important industry, 97% of agricultural products leave the state for processing or sale, while more than \$4 billion of food products are imported to New Mexico (New Mexico Food and Agriculture Policy Council, 2009). Much of what is harvested in New Mexico is grain and hay for livestock, but 4,600 farms and a total of 80,000 acres of land are cultivated with vegetables, orchards, or berries for human consumption (USDA, 2009). Despite much of New Mexico's dry climate, many crops can be successfully grown throughout a ten month harvest season (Appendix A).

### **3.2.2 Local Food Initiatives**

In order to begin to understand perceptions of the local food network in the study area, this section will outline some local food initiatives that are taking place within the study area. This includes both political and practical initiatives, including the Dreaming New Mexico project, legislative initiatives, various community supported agriculture schemes and retailing outlets where local food can be purchased.

Interestingly, the most recent Census of Agriculture in 2007 added a new piece of information that tallies the number of farms that market products through community supported agriculture schemes. In New Mexico, 139 farms engage in marketing through community supported agriculture (USDA, 2009), which indicates that there is interest in participating in this type of alternative food provisioning. Additionally, the amount of acreage in organic production throughout the state increased exponentially from 3,092

acres in 2002 to 71,607 acres in 2007. Although organic production is not synonymous with local food alternatives, the drastic increase in production suggests a trend towards alternative production methods. Finally, throughout the state, there are a total of 63 farmers' markets, which represent another mode of alternative food provisioning.

An explicitly local food initiative is the Dreaming New Mexico project, which is one of the most recent attempts to envision a future food system that reconnects local food producers and consumers in New Mexico, as well as provide food security to every citizen (Dreaming New Mexico, 2010). The initiative focuses on several areas of the food system which include the local food economy, preservation of bio-cultural diversity, ecological agriculture, food access, preservation of farmland and stewardship of water with the practical outcome of building a more statewide, self-reliant local food system (Dreaming New Mexico, 2010).

Some specific goals of the initiative include 25% of the food consumed in New Mexico be locally grown by 2025, fair trade certification for state imports and exports with sister foodsheds, the reduction of New Mexicans needing food aid, and government purchase of local foods for public institutions (Dreaming New Mexico, 2010). There is some sense of reactionary localism within the initiative due to the desire to reverse the global, mass-produced food system in favor of a system rooted in a moral foodshed economy.

Dreaming New Mexico, however, is not the only local food vision or program in the state. Recently, a bill has been introduced to the 2011 New Mexico Legislative Session that would require all state agencies to purchase 2% of food locally by 2012 and 10% by 2016 (New Mexico Legislature, 2011). Additionally, through the work of the

New Mexico Food and Agriculture Policy Council, over 165,000 school children in eight school districts throughout the state are being served New Mexico grown fruits and vegetables (Roy, 2010). This is especially important to many because New Mexico ranks third in the United States for food insecurity, with over 120,000 children (24% of total children) unsure of their next meal (Dreaming New Mexico, 2011).

Within the city of Albuquerque, four strategies have been created as part of the Climate Action Plan to promote local food growers and retailers (City of Albuquerque, 2009). The first of these strategies is to increase the amount of food purchased inside city limits. This strategy includes educating city residents on the benefits and methods of urban gardening, supporting the development of commercial urban growers and creating a “buy local” preference for food purchases made by the city. The second strategy calls for the support of developing a foodshed in New Mexico, which would promote a “buy local” campaign that encourages all resident to buy food produced within 300 miles of Albuquerque. Third, there is a strategy to incorporate food and agriculture in planning, landscaping and design. This strategy would require space for community gardens as well as require new city facilities to include at least 25% edible landscaping. Finally, the last strategy would encourage every city department to promote local food production and consumption. For example, the Transit Department would be encouraged to be sure that busses pass by farmers’ markets, Animal Welfare would hold adoption events at farmers’ markets and the Aviation department would sell local produce and concessions inside airport terminals (City of Albuquerque, 2009).

For consumers in the study area, locally grown food can be readily found at farmers’ markets (generally called “growers’ markets” in the Albuquerque area), which

have increased 43% over the past five years (Miller, 2010). This has allowed the state to accept grants that fund the Women, Infant, and Children Farmers' Market Nutrition Program (USDA, 2010b) and the Senior Farmers' Market Nutrition Program (USDA, 2010c). Farmers' markets in New Mexico work under the definition that a farmers' market is "a public marketplace where fresh foods from a defined local area are sold by the people who have grown, gathered, raised or caught them" (New Mexico Farmers' Market Associations, 2011a). Each market sets individual rules governing the area from which local products can come; reselling produce and other products bought from outside sources is generally strictly prohibited.

Other sources of locally produced food include various community supported agriculture schemes throughout the state. In this situation, members generally pay for a share of the farm in order to cover production and operating costs. In return, members receive boxes of produce and other products from the farm at regular intervals. One of the larger CSA's, Los Poblanos Organics currently has over 1700 members and offers year-round pick-up or delivery options of food boxes (Los Poblanos Organics, 2010). This CSA scheme farms on more than 40 acres of land and has had membership grow by 30% in the last two years. However, Los Poblanos undergoes a significant amount of criticism for sourcing some member produce from Arizona, California, Texas, Colorado and Mexico. There are, however, over 20 other community supported agriculture farms throughout the state that operate on a smaller scale (New Mexico Farmers' Market Association, 2011b).

Consumers are also able to buy local produce from retail grocers, such as a local food cooperative. This co-op currently has 14,000 members and provides over 1100

local products from 400 providers. Approximately 20% of total sales of the co-op are made through the purchases of local food (La Montañita Co-op, 2010). Additionally, consumers can find local products at other national chain retail outlets as well as at various small, independent grocers. There are also a number of various popular initiatives throughout the study area that encourage and support local food, including Edible Santa Fe, which is a magazine dedicated to the story local food (Edible Santa Fe, 2011), Foodprint NM, which is a program at the University of New Mexico that aims to “cultivate the local foodshed in a sustainable fashion” (Foodprint NM, 2011) and, FoodCorps, a national program recently introduced in the study area to cultivate community and school gardens (Food Corps, 2011).



## CHAPTER FOUR

### Research Design and Methodology

#### 4.1 Research Design

This research used a mixed methodology approach to investigate the perceptions of retailers and consumers about local food in Albuquerque, New Mexico. As such, the research was conceptually divided into two parts; one part that focused on retailers and their response to local food and a second part that placed emphasis on consumer perceptions of local food. Since collecting primary data from retailers required a different approach from that of consumers, each of these two parts merited separate methodological procedures that remained fully complementary.

Despite this conceptual divide, the research was tied together by answering the following question: How does the observed, retailer-created local food environment, defined by embedded values and spatial criteria, compare to consumer perceptions of the local food environment in Albuquerque, New Mexico? However, due to the breadth of this question, two relevant sub-questions were identified that, when put together, created a cohesive answer to the main question stated above. The first supporting question was: What spatial and value-driven criteria are used by retailers when applying local labeling and other advertising to produce items? The second supporting question focused on consumers and was designed to answer: What spatial criteria and values are important to consumers when negotiating the creation and meaning of local produce?

Both questions sought to identify criteria that were used to define local produce, which could be spatial or non-spatial (Selfa and Qazi, 2005). While the answers to these questions alone were vital, the research also aimed to explore the relationships between

the textual content that referred to local produce found within retail food outlets and the respective consumers' perceptions of local produce.

## **4.2 Methodology**

### **4.2.1 Retailers**

The supporting question that referred to the spatial and value-driven criteria that retailers utilize in labeling and advertising when applying the local designation to produce items was designed to define the observed local food environment in Albuquerque. In order to accomplish this goal, observational, in-store surveys were performed to record text, pictures and other advertising methods used by retailers when selling produce that they consider to be local. Additionally, informal interviews were conducted with vendors at several farmers' markets to obtain data describing the spatial and value-driven criteria used by retailers in this unique setting.

This research did not focus on every locally produced item for sale within each retail outlet. Produce was chosen as the exclusive focus of this study for the two reasons. First, there was a consideration of time and efficiency, knowing that the number of fully or partially processed local products can be very extensive and would be beyond the scope of this project. Second, a study of food retailers in upstate New York shows that produce, followed by other perishable items, are most important for retailers when promoting local food items (Guptill & Wilkins, 2002).

To determine the stores to be surveyed for this research, a database was created in conjunction with other research to identify all stores within the study area that sell fresh produce (Zandbergen et al., unpublished). Data for food stores was obtained from six sources, which include Reference USA, YellowPages.com, the New Mexico

Environmental Department, the Bernalillo County Environmental Health Office, the City of Albuquerque Environmental Health Office and New Mexico Farmers' Market website.

Reference USA is a proprietary database that tracks businesses in the United States and provides listings of over 14 million businesses based on the North American Industry Classification System (NAICS), the Standard Industrial Classification (SIC) or geographic location. The NAICS coding system replaced the older SIC coding system in 1997 and has allowed businesses to self-identify with a NAICS that best describe the company's primary activity. Because several governmental and trade agencies assign NAICS codes to businesses, it is common for a single business to have multiple NAICS codes. Food store data was obtained from Reference USA in June 2010 for 809 businesses based on the following two parameters: 1) presence within the Albuquerque Metropolitan Statistical Area and 2) at least one NAICS code that identifies the business as a supermarket or other grocery store, convenience store, meat market, fish and seafood market, fruit and vegetable market, baked goods store, confectionary and nut store or any type of specialty food store; or a major industry group code that identifies the business as a food store.

The second source of food store data is YellowPages.com, which is an online Yellow Pages service that is free and easily accessible. Similar to a paper version of the yellow pages in a telephone book, users can search for businesses by common-sense category and location. The listings on YellowPages.com are updated daily and come from either third party vendors or the businesses themselves. The search on YellowPages.com took place in June 2010 and yielded 226 results. Because the search was limited to a 25 mile radius and could not be done for a whole county or metropolitan

area, 12 populated places were chosen throughout the study area so that the 25 miles radius from these places would cover the entire study area. For each of these places, searches for supermarkets, grocery stores, grocers-specialty food and fruit and vegetable markets were performed. Any duplicates that resulted from this iterative search process were immediately deleted.

The third source of food store data were licensure records obtained from local- and state-level government sources. First, in June 2010, the New Mexico Environmental Department supplied a list of food retailers in the study area; from this database, entries with a facility type listed as grocery, meat market, or bakery were further studied. This search process resulted in 15 new food stores. The second license source was from the Bernalillo County Environmental Health Office, provided in June 2010. The database was filtered to include all locations that have a permit type listed as convenience store, grocery store, produce/vegetable market, raw food vending stand or retail store. Sixty-three food stores resulted from these search parameters. The third license database source was from the City of Albuquerque Environmental Health Office and was obtained in July 2010. Establishments with permit types of raw produce, retail-deli, retail-grocery, retail-meat/seafood or retail-specialty food were selected from the database. This search resulted in 241 food stores. Finally, due to the purposeful inclusion of farmers' markets in this research, the physical locations of nine farmers' markets within the study area were recorded from the New Mexico Farmers' market website in June 2010. Several of these farmers' markets sold processed foodstuffs and handicrafts along with unprocessed produce.

After these data sources were combined and exact duplicates manually deleted, 1138 food stores remained. These 1138 stores were viewed as having the potential to sell produce, but the presence or absence of produce needed to be verified before physical site visitations began. Many establishments were known to sell produce, but if this was not known, the food store was telephoned to verify this information. If there was no phone number provided or no answer, the establishment was visited for produce verification. In total, 281 food establishments were physically visited during June, July and August 2010. Out of these 281 establishments, 193 (including the nine growers' markets) sold at least one type of fresh produce, and 14 of these establishments sold at least one variety of produce that they considered to be locally produced. These 14 stores is a small percentage of all produce selling retail outlets. Additionally, more than half of the retailers which sell local produce are farmers' markets, indicating local produce is a niche market in the study area.

As data was being systematically collected from these 14 retail establishments, the goal was to collect information about criteria for local produce that was established by the retailer and made readily available to consumers of that establishment while in the store. The retail outlets were surveyed explicitly for any text that uses the word local. This data on local text within the retailer was collected at the same time as produce was being inventoried for a separate project. Because the additional project required documentation of every type of produce sold, a thorough survey of each retailer was necessary. Therefore, this meant the collection of text and images on advertising and other marketing signage within the produce department, as well as the collection of pamphlets and take-home materials that describe retailers' definition or perception of

locally produced produce items. Attention was also given to signs hanging on walls or from the ceiling. Visiting retailer websites was avoided to collect this data unless made available inside the store, which did not occur in any of the food stores surveyed for this research. Such websites had potential of adding data to the research, but data collection was designed to take place only on-site, within retailer outlets. Data could be collected inside or outside the store, with the latter being instances in which retailers hung signage on the exterior of the building or owned large billboards or signs on the property. Specific information about which produce items the local text was attached to was not collected during the data collection process. Furthermore, it was frequently difficult to determine exactly which products were locally produced in the absence of signage displaying such information.

Actual data collection was achieved in two phases. The first phase involved completing an in-store survey that recorded, for each instance of local food advertising or marketing, the type of content found, where in the store the content was found, the presence or absence of images to complement the content, a transcription of the content itself and finally a record of pamphlets and other materials that were taken away from the store (Appendix B). If complementary images were present outside the store, photographs were taken; if images were found inside the store, photographs were taken if permitted by management. In situations where photographs were not permitted, the images were described in enough detail to allow for reproduction of the image for the purpose of analysis. This data collection technique was performed at all 14 retail outlets that sold retailer-defined local produce. Since Spanish language use is common in the

study area, all text and signs were read, including those in Spanish, but no text in Spanish was found to contain information regarding local food.

The second phase of retailer data collection focused solely on farmers' markets. Out of the 14 stores that sold local produce at the time of data collection, nine were farmers' markets. This type of retail location is clearly a vital source of information regarding local produce. The people selling produce at farmers' markets were commonly also the producers of the product, but for the purpose of this project, vendors at farmers' markets were considered to be retailers. The market as a whole, including all of the vendors, was considered to be one cohesive retail outlet, which is consistent with previous research (Smithers et al., 2008). Combining farmers' markets into one retail unit is justifiable because the individual vendors will not succeed without the market structure and likewise, the market will not succeed without the individual vendors (Smithers et al., 2008). Initial attempts were made to collect data from farmers' markets using the same technique as in more conventional food retail outlets. However, the marketing, advertising and communication about local criteria in farmers' markets focused less on hard text and images and more on oral communication between vendors and consumers.

Because of this lack of text and other signage, informal interviews were performed with at farmers' markets. The purpose of these brief qualitative interviews was not to obtain more information than what was available in traditional food retail stores, but rather collect the same information in a different manner. As such, four farmers' markets were chosen as the sites for these on-the-spot interviews; two of these markets were located in a rural setting and two were located in urban areas. This

sampling was purposeful in order to incorporate both rural and urban perspectives of local food at farmers' markets. Once inside the market, every vendor who sold fresh produce was asked the question "As a vendor, what do you consider to be "local"?" The purpose of the question was to elicit responses about criteria that each vendor considered important when calling a product local, without introducing interviewer bias. The vendors being interviewed were allowed to speak as freely, extensively or little as desired, with the interviewer commenting only enough to keep the conversation flowing naturally. Because some vendors were also conducting business during interviews, consideration was given for their time and attention. In total, 24 vendor interviews took place during July 2010.

While farmers' market vendors were interviewed, conventional retailers were not interviewed during the retailer data collection process. Conventional retailers were not interviewed for two reasons. First, the data collection was designed to collect information that a consumer would obtain from an ordinary shopping trip to a retailer. From researcher experience, there is more personal communication that takes place between consumers and retailers at the farmers' market than at conventional retailer outlets, which supports the decision to exclude interviews with conventional retailers. Second, in the five conventional retailers that were considered to sell local produce, there was consistently enough text, signage and other advertising to gather information about the way local produce is perceived and presented. For this reason, the primary objective of collecting text within the retailer was achieved and further interviews were not warranted in conventional retailers.



Despite being collected through different methods, the in-store survey data, the take-away pamphlets and the vendor interview data was analyzed using qualitative content analysis. Content analysis has also been used in a quantitative manner, but for the purpose of this research, content analysis was explicitly qualitative and can be understood as the “subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (Hsieh & Shannon, 2005: 1278). The text data used for this method could be in verbal, print or electronic form and be the result any number of techniques, including narrative responses, focus groups, books, articles, interviews and observations (Kondracki & Wellman, 2002) , with the latter two being the source of data in this research. Analyzing text in this way allowed for the categorization of key themes that express implicit or explicit communication, or both. Three types of qualitative content analyses have been identified (Appendix C) and are distinct due to the manner in which initial coding schemes are developed (Hsieh & Shannon, 2005).

This research utilized a directed content analysis approach that began with broad codes rooted in existing literature and expanded to more refined codes that emerged out of the collected data. Overall, a qualitative content analysis was appropriate for this research because each retailer was seen as having the potential, through text and other messages, to highlight what they consider to be the most important aspect of local food (Guptill & Wilkins, 2002). Through the directed content analysis, key themes behind retailers’ understanding and construction of local foods were recognized along with potential implicit communication schemes. Because this research also investigated consumer perceptions of local produce as a function of retailer construction of this same

idea, the result of the content analysis also served as the basis for the consumer questionnaire. Using the collected data in this manner allowed a comparison of consumer perceptions of the local food environment and those of the retail outlet at which they shop.

Additionally, after the retailer text data was qualitatively analyzed, a map was created to explore the spatial boundaries of local as observed in retail outlets. ArcGIS 10.0 (ESRI, 2010) was used to create a map in which each observed spatial definition of local by retailers was overlaid in order to find areas of agreement and disagreement. The map was then imported to Adobe Illustrator CS5 (Adobe Systems Incorporated, 2010) to make final visual and cartographic adjustments. The purpose of this map was to show the variability of observed spatial definition of where local produce comes from in a visually impactful and insightful manner.

#### **4.2.2 Consumers**

The second supporting question of this research was designed to investigate the spatial criteria and values that were perceived as important to consumers when deciding a meaning for local produce. Whereas the in-store retailer surveys defined the *observed* local food environment, the consumer portion of the research was meant to understand how local food was *perceived*. Similar to the retailer investigation, data was collected from consumers that explored both the spatial and non-spatial, value driven criteria that food consumers used when determining whether or not a produce item was local. In order to obtain this consumer information, an internet based, self-completion questionnaire was used. The questionnaire was created by using the themes that emerged from the content analysis of traditional retailers and farmers' market vendors. This was

in order to allow direct comparison from the observed local food environment created by retailers to the perceived local food environment that was created by consumers.

The online questionnaire was created using Opinio Survey Software (Object Planet, 2010), which is an enterprise level web-based tool for developing and hosting surveys that is made available through the University of New Mexico. The questionnaire was voluntary, unpaid and anonymous. Respondents were given the functionality to save the questionnaire at any point and return at a later time. Multiple submissions from the same computer were allowed in order to give consideration to those using a public or family shared computer. All materials related to the survey, including the consent letter, survey content questions and advertising materials were reviewed and approved by the Institutional Review Board (IRB) at the University of New Mexico.

The questionnaire was made available to the public in the middle of December 2010 at [www.nmlocalfoods.com](http://www.nmlocalfoods.com). The survey remained open until the beginning of February 2011. Responses were elicited from any food consumer over the age of 18 who may or may not have an interest or previous knowledge of local produce. Fliers advertising the questionnaire (Appendix D) were posted throughout the study area on various community announcement boards, in both urban and rural areas. Classified advertisements for the questionnaire also appeared in seven newspapers throughout the study area, including one major daily newspaper, several neighborhood-level papers and several large-circulation weeklies. Electronically, advertisements for the questionnaire were also posed on two social networking websites, [www.facebook.com](http://www.facebook.com) and [www.dukecityfix.com](http://www.dukecityfix.com). This electronic platform for eliciting questionnaire responses was not traditional, but was found to be effective since respondents must already be connected

to the internet to complete the survey. Additionally, the cost of electronic questionnaire advertisement, distribution and return was minimal, which was a practical concern for the project. Researchers who have studied Facebook report that it is suitable for social data collection and analysis (Lewis et al., 2008).

The questionnaire contained a total of 33 questions (Appendix E), which are divided into several sections. There were four questions that collected information to establish where respondents shopped for produce, where they bought the majority of their produce items, how frequently, if ever, they bought produce that they consider to be local and finally if they noticed advertisements and other marketing materials about local food when they shopped. These questions served to investigate the consumers' level of interest in purchasing local food as well as provide a link between the retailer and the corresponding customers. There were three open comment text boxes at the beginning, middle and end of the survey to allow for respondents to provide any additional comments or explanations. Twenty-three content questions made up the majority of the questionnaire. Finally, there was one open ended question regarding spatial attributes of local food designation and two questions that asked for very basic demographic information. Upon beginning the questionnaire, each respondent was automatically assigned a unique six digit identifier code by the software. This unique code was used to identify individual consumer responses and textual comments throughout the research.

The questions that were content oriented were meant to probe consumer attitudes about various spatial and non-spatial criteria that may have been important when determining what was and what was not considered local. Since consumer perceptions were being collected in the questionnaire, the questions were asked and answered by

through the use of a Likert scale. Likert scales are used to measure a set of attitudes that surround one domain as well as the strength of those attitudes. Each “question” is actually a statement, or item, that tests a certain theme of the overall domain that elicits a response that indicates agreement, disagreement or neutrality (Bryman, 2008). In the case of this research, the domain being tested was perception of local produce and the surrounding themes are the same themes that resulted from the retailer content analysis. For the Likert scale portion of the questionnaire, respondents indicated agreement with the statement by choosing one answer that corresponds with Strongly Agree (5), Agree (4), Neither Agree nor Disagree (3), Disagree (2), Strongly Disagree (1) or No Answer (0). The last choice of No Answer (0) is ambiguous, but allowed the respondent to refuse to answer a question without returning an incomplete survey. Importance was also placed on how a question was asked so that the respondent would not be influenced by the way the statement was given or by the order that the statements were presented. To alleviate some of this potential bias, an equal amount of positively and negatively phrased statements were given as well as a presentation of statements in random thematic order.

In total, the twenty-three content questions tested attitudes about two main themes, which are (1) values salient to local produce and (2) spatial criteria of local produce. A disaggregation of the values salient to local produce yielded sub-themes of social, culture, economy, environment and quality. A disaggregation of spatial criteria yielded sub-themes revolving around delimitations of local by natural, political and arbitrary boundaries. Since asking about abstract geography through a closed ended question can be both muddling and uninformative, the one open-ended, follow-up question about spatial delimitation of local produce invited respondents to elaborate on

what they considered to be geographically local. It should be noted that the consumer questionnaire, while made freely available to the public, was not translated into Spanish. This selection of English as the survey language introduced a systematic bias in the consumer questionnaire sample, but this bias is not believed to be significant because most Spanish speakers in New Mexico also have high levels of fluency in English.

The analysis of the resulting questionnaire responses was both qualitative and quantitative. Qualitatively, the consumer comment responses that were elicited from open-ended text boxes were evaluated thematically and coded according to the coding scheme that resulted from the qualitative content analysis of retailer text data. These consumer comments were then qualitatively associated with the corresponding questionnaire statements in order to produce additional evidence and support to understand consumer perception of local foods. For example, if a respondent left a comment that states “Local to me is a 60 mile radius”, this response would be coded as Spatial-Radial and subsequently be associated with any questions on the questionnaire that referred to radial boundaries of local. Additionally, in similar fashion to that of retailers, a map was created which visually shows the various perceived spatial delineations of where local produce comes from. Again, this map was meant to provide a visually impactful and insightful way to understand the spatial perceptions of where local produce comes from according to consumers.

Quantitatively, the questionnaire data was treated with an ordinal level of measurement due to the inability to assume that the intervals between each of the Likert item responses were equal (Jamieson, 2004). For example, the average of a scale with choices poor, fair, good and excellent does not average to be “fair and a half” (Kuzon et

al., 1996: 266). Therefore, descriptive statistics for the resulting data included counts of responses along with the median of each response, but not the mean or standard deviation. Cronbach's alpha was also calculated for the questionnaire, which measures the internal consistency of the scale on a whole. While Cronbach's alpha calculates how closely related a set of items are as a group, it does not calculate the reliability of any single scale item (Gliem and Gliem, 2003). The Cronbach's alpha reliability coefficient ranges from 0 to 1, with a number closer to 1 indicating a higher level of internal consistency (Gliem and Gliem, 2003). Additionally, any coefficient less than .5 is viewed as unacceptable while coefficients greater than .8 and .9 are considered good and excellent, respectively (George and Mallery, 2003). Cronbach's alpha for this project was calculated using SPSS 19.0 statistical software (IBM, 2010) and was found to be 0.996, which indicates a high degree of internal consistency.

Additionally, there was one question of interest from the questionnaire that did not relate directly to textual elements observed in retail outlets but rather served as a background question to support the direct comparison of consumer responses and observed retailer text. For this questionnaire item, question 19, the responses were divided into two categories, one for the respondents who shopped in one or more retail outlets that were observed to have local-related text, and another category for those who did not shop in such retail outlets. A comparison of median responses from each of these two groups was performed to evaluate if they differed. To test significance, the non-parametric Mann-Whitney U test was performed between the two groups using SPSS statistical software.

Also to support the direct comparison of consumer responses and observed retailer text, Likert item responses from each respondent were summed in order to represent a total score of responses. After this transformation took place, the resulting numbers could have been considered interval data and treated as such to include the evaluation of means instead of medians. Only responses of completed questionnaires were summed in order to reduce bias caused by questionnaires that were started but never finished, which resulted in a total score of 0. This reduced the sample size from 264 to 182, but had the benefit of creating a more robust analysis and result. Question 3 “How often do you buy local produce” was excluded from the sum total since this question was assumed to receive a higher response from those who shopped at retail outlets that sell local produce and thus unjustly influencing the total score. Additionally, Questions 24-29 were excluded from the sum total because they were based on the spatial nature of local produce and did not indicate a favorable or unfavorable opinion towards local foods. Finally, there were six Likert statements in the questionnaire (Questions 6, 8, 11, 12, 13, and 17) that were purposefully framed and presented in a negative manner. For the summation, the values for these six statements were reversed in order to maintain the value of 5 as the most favorable view of local food and the value of 1 as the most unfavorable view of local food. For example, if a respondent answered with a 1 for one of these six statements, the respondent’s answer would then become a 5 and included in the summation as such. A response of 4 became a 2 and vice versa and a response of 3 or 0 remained unchanged. Once these 182 complete responses were manipulated and summed, they were divided into two groups, with one group being respondents that shopped in at least one retail outlet which was observed to contain local-related text and



the other being respondents who did not shop in such retail outlets. This was done to compare means of the two groups to investigate whether or not where a respondent shopped affected their total perception of local foods. Once the means of these two groups were empirically compared, statistical testing was used. Although an independent samples t-test could have been performed to evaluate the difference in means of these two groups, equality of variance could not be assumed according to Levene's Test for Equality of Variances ( $p < .05$ ) and the test was abandoned for the non-parametric Mann-Whitney U test.

#### **4.2.3 Comparison of Consumer and Retailer Data**

To address the objective that aims to assess whether or not consumers who shopped at a retailer that sells local produce perceived values and spatial criteria of local differently than those who did not shop at such retailers, a basic comparison of medians and a test of significance was performed on eight indicator questions. This method compared the questionnaire responses of consumers who did and did not shop at a particular retail location with the textual content that was evident at that particular retailer.

Ultimately, this method gave indication of whether or not consumers combined retailers' creation of local with their own perceptions of values and spatial criteria in order to create a unique space in which the local food environment functions. For example, one retailer spatially defined local produce as coming from a 300 mile radius. Likewise, there was also an item on the consumer questionnaire that collected attitudes about local produce coming from a 300 mile radius. The consumers who answered this particular question were divided into two groups. One group was made of those who

shopped at the particular retailer who defined local as a 300 mile radius and the other group was made of those consumers who did not. The medians of these two groups are then empirically compared and then tested for significance using the Mann-Whitney U test.

## CHAPTER FIVE

### Results

#### 5.1 Results of Observational Store Survey and Consumer Questionnaire

From June to August 2010, 281 food establishments were visited in the study area of which 193 sold at least one type of fresh produce. Nearly all food retailers advertised or promoted the food they sell in some way. Some retailers chose to advertise everyday values, low prices or volume discounts while others chose to emphasize the convenience, ethnic authenticity or kid-friendliness of their products (Figure 5). Regardless of the content of advertisements, retailers highlighted certain aspects of their products in order to generate sales while still operating within the company's business model.

For this reason, it is not surprising that 179 food retailers did not advertise or sell "local" produce in any way, most likely due to the customer base or adherence to company business practices. For example, some larger retailers with multiple stores buy fresh produce to sell only if there is enough to distribute to all stores within the company's district or region (Interviewee 23, July 2010). In this study area, local producers were often not able to supply adequate volume of product to these large retailers or provide a low enough price, which explains why locally produced food may be more appropriate for a niche market. Additionally, some retailers offered very limited fresh produce selections, because their primary business was selling gasoline, convenience foods or liquor products. The produce in these establishments lacked variety and was generally of lower quality and sold inconsistently. Local produce was not found in any of these convenience-oriented establishments. Finally, there were food retailers whose produce selection complimented their general specialization in ethnic

foods. Many produce items in these businesses were imported. In these specialty outlets, retailers tended to focus more on specific varieties and less on the origin of the produce, which explains why locally sourced produce was not common in these establishments.

However, there were 14 individual retail outlets within the Albuquerque study area that both advertised and sold produce that they considered to be “locally” sourced (Figure 6). Out of these 14 retail outlets, there were nine farmers’ markets, two companies that had at least two separate retail outlets each and one company that owned one store. For the purpose of this research, each company has been given a random pseudo name as an identifier to avoid emotions and assumptions attached to well-known retailer names. The subsequent classification supplied for each store is a function of the number of variety and type of produce sold (Duvall et al., 2010). Company A is a large food retailer that has multiple locations throughout the United States of America and specializes in natural and organic food (Table 2). Two of Company A’s stores are located within the urban portion of the study area and are both considered organic specialist stores. Company B owns four stores in total, with two of these outlets being located within the urban portion of the study area. These two stores are community owned, specialize in natural and organic products and are also considered to be organic specialist stores. Company C owns one store, which is located in a more rural portion of the study area. The store is locally owned and can be considered a supermarket.

Lastly are the nine farmers’ markets (FM) throughout the study area, which can be described as temporary or seasonal establishments specializing in goods that are considered by the market to be locally produced. Unless indicated otherwise, the four farmers’ markets that were included in the content analysis are considered one unit and

Figure 5: Example of retail advertising

The first image shows advertisements related to low prices (“silly prices”) while the second image shows marketing to a specific ethnic group.

**Serious Food...Silly Prices**

**THIS IS OUR COMMITMENT TO YOU:**

- We Will Always Offer the Best Quality Food at the Lowest Possible Price**  
"Better-than-supermarket quality at better-than-supermarket prices" is our motto. Great price and great quality equal great value.
- We Buy Big**  
We source directly. We pay our vendors quickly and we buy almost everything by the pallet or by the truckload. That buying power translates into big savings for you.
- We Keep Our Overhead Low**  
No fancy fixtures or high rent. No flashy corporate headquarters. We're just hard-working folks who get a real kick out of negotiating the best possible deal anywhere.
- We Keep It Simple**  
No membership cards. No complicated discount schemes. We don't charge our vendors for shelf space; every one of the items we sell has to earn its place in our stores.

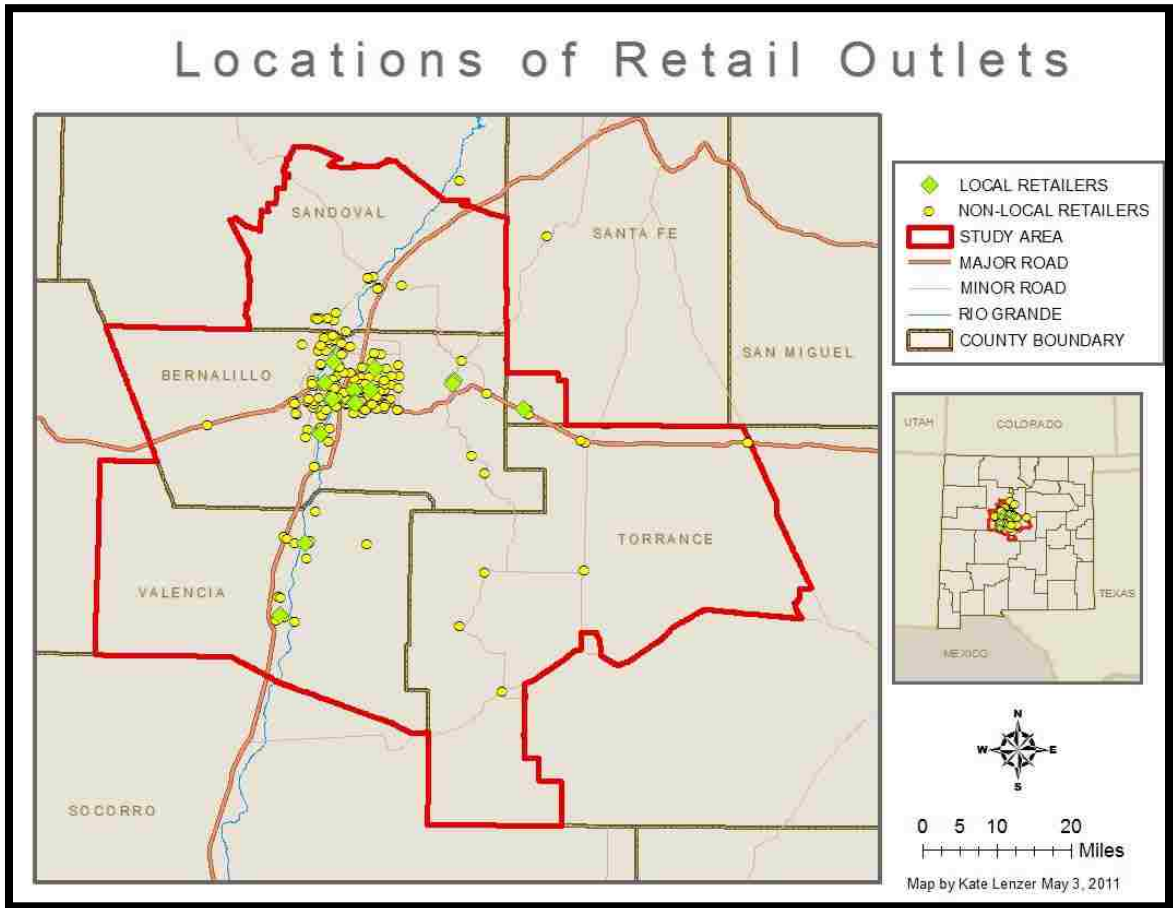
Our customers and suppliers tell us that they find our way of doing business to be a refreshing change. We hope that you'll agree.

Welcome to [REDACTED]

**PRODUCTOS LATINOS**

- JARRITOS, SANGRIA, OR SIDRAL, SORTED FLAVORS, 1.5 LITER: **5\$5** FOR 1 FOR \$1.39
- NIDO KIPCEI 1.500 Ounces: **15.99**
- CAMARONAZO TOMATO & SHRIMP COCKTAIL, REGULAR OR PICANTE, 32 oz.: **2\$3** FOR 1 FOR \$1.99
- SURTIDO RICO GAMESA: **1.99**
- GAMESA SORTIDO COOKIES, 15.6 oz.: **1.99**
- CHIPS: **2.99**
- GUERRERO CORN TORTILLAS, 80 Ct.: **2\$5** FOR 1 FOR \$1.99
- Nescafé Clasico Instant Coffee, 10 oz.: **6.99**
- Valentina Hot Sauce, Red or Black Label, 1 Liter: **1.39**
- La Sirena Sardines, Tomato or Chili, 13 oz. Oval: **99¢**

Figure 6: Retail outlets in which local produce was present or absent



*Table 2: Key characteristics of retailers in which text referring to local was found*

<b>Retailer</b>	<b>National/local?</b>	<b>Stores in study area</b>	<b>Rural/urban</b>	<b>Classification</b>
A	National	2	Urban	Organic Specialist
B	Local	2	Urban	Organic Specialist
C	Local	1	Rural	Supermarket
Farmers' Markets	Local	9	Rural & Urban	Temporary/seasonal

analyzed together. The same is true for Companies A and B which each own more than one store but will be each considered a cohesive unit. Consequently, the 14 retail outlets were aggregated into four retailers.

Within these four retail units, there were 91 separate instances of text that described or referred to local produce by explicitly using the word “local”. There were also five separate images that were used by retailers to support the text about “local” produce. These textual instances occurred on signs throughout the store, on product advertising or price point labels and in take-home literature obtained freely from the retailer.

After analyzing the 91 unique examples of text that referred to definitions and delimitation of local food according to each retailer, two overarching categories of definitions were found to be consistent and informative throughout the retail outlets. These two categories are referred to as spatial boundaries and embedded values. These 91 instances of text were each unique and did not repeat within the same retailer, but could repeat from one retail unit to the next. The first of these categories is spatial boundaries, which refers to the explicit, physical, on-the-ground location from which products come. Three out of the four retailers utilized this spatial category when describing the delimitation from where local produce can be sourced (Table 3). However, it is important to acknowledge that spatial delimitations of local produce, in general, do not come without other implications. For example, if the “local” designation is given to a product because it comes from anywhere in the United States of America, there are both spatial and value oriented aspects that need to be considered. Spatial aspects in this example are clear because the border of the United States of America is a



*Table 3: Counts of local text occurrences by category and retailer*

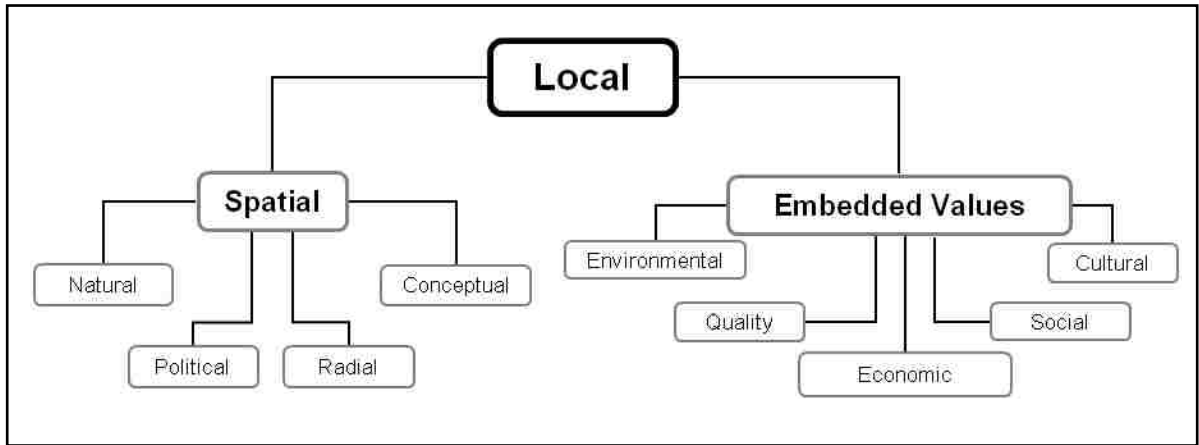
Retailer	Spatial	Embedded values
A	4	13
B	2	22
C	0	4
FM	17	29

well-established political boundary. However, there may also values embedded this “local” designation, such as patriotism or community building. The second main category that was found to be important to retailers when defining local produce is embedded values, or value-driven criteria. All four retailers referred to embedded values when describing their definition of local produce.

All instances of text found within retail outlets that advertise and sell “local” produce could be grouped into either the spatial boundaries or value oriented category. However, this does not provide enough detail to understand the observed food environment in the Albuquerque study area. Therefore, each of these categories has been divided further into several more specific themes (Figure 7). Themes under the spatial category focus on boundaries and include natural, political, radial and conceptual. The category on value driven criteria is classified into themes of environmental, quality, economic, social, and cultural. While all consumer and retailer definitions of “local” fit into at least one of these themes, it is important to note that, in many cases, the definitions of local from retailers and consumers fit into two or more of these themes.

Shifting to the perceived food environment, consumers, like retailers in the Albuquerque study area, were diverse in thoughts, attitudes and perceptions about food. Some consumers found purchasing local food to be very important while others gave little or no attention to their food’s origin. Likewise, other factors that influenced food purchasing may be important to some and not to others, such as low cost, volume discounts or superior flavor. In a survey that asked consumers which factors affected their food purchasing choices, some amount of importance was placed on food qualities, such as taste, freshness and appearance, as well as price and convenience, packaging and

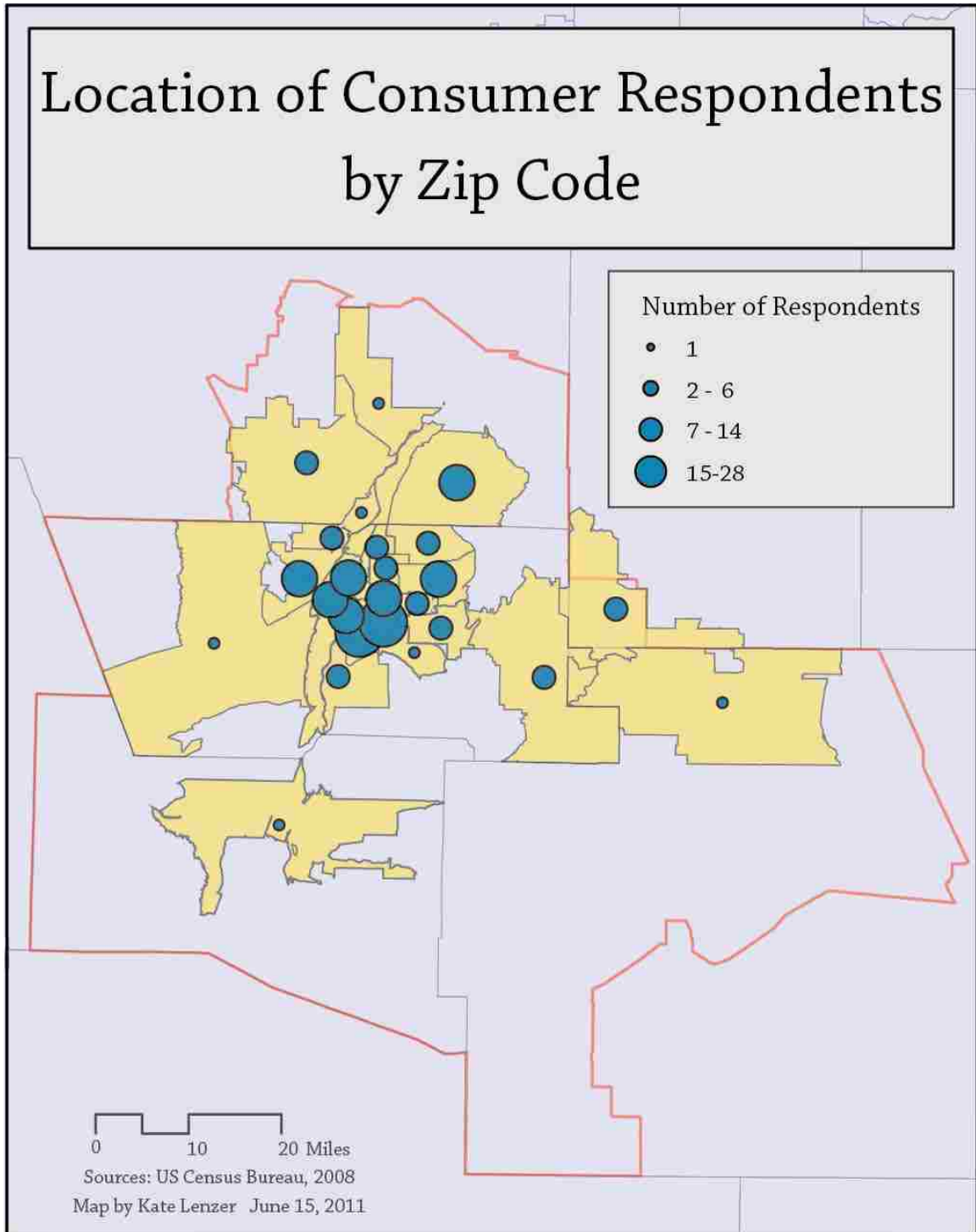
Figure 7: Conceptual framework of categories and themes of local food definitions



brand loyalty, organic production and animal welfare (Weatherell et al., 2003). Likewise, consumer food purchasing choices may be affected by income (Jones, 1997), place of residence (Weatherell et al., 2003), or gender, age and weight control concerns (Glanz et al., 1998).

To investigate such consumer food perceptions about local foods, the Likert scale survey was designed to test consumer attitudes about spatial boundaries and embedded values in local food. The survey was at least partially answered by 265 respondents and fully completed by 182 individuals. Nineteen responses reported a Zip code outside the study area and were subsequently removed from all analyses to make a total of 246 results available for analysis. In total, respondents to the survey lived in 38 different Zip codes (Figure 8). Six (15.4%) of these Zip codes were located in rural areas while the remaining 33 (84.6%) were urban. Rural, in this research, was considered any place that has a population of less than 2500 people (Congressional Research Service, 2005). The high percentage of urban respondents, especially those concentrated around the center and near-eastern portion of Albuquerque indicate that a sampling bias was present. The other demographic information that was collected from respondents was age. From the completed responses, there were respondents in every age category except that of 75 and over (Table 4). Out of the age categories, the most respondents came from the group of 35-44, although there was still representation from the other age categories. The categorical and thematic results of the consumer questionnaire are presented alongside those of the retailer survey due to the notion that the categories and themes relevant in the retailer local food environment were also salient to the consumer questionnaire responses.

Figure 8: Map of questionnaire respondent locations by Zip code.



*Table 4: Number of respondents by age category*

<b>Age group</b>	<b>Number of responses (% of total)</b>
18-24	13 (5.3)
25-34	42 (17.1)
35-44	53 (21.5)
45-54	38 (15.5)
55-64	26 (10.6)
65-74	14 (5.7)
75 or over	0 (0)
No response	60 (24.4)
<b>Total</b>	<b>246 (100)</b>

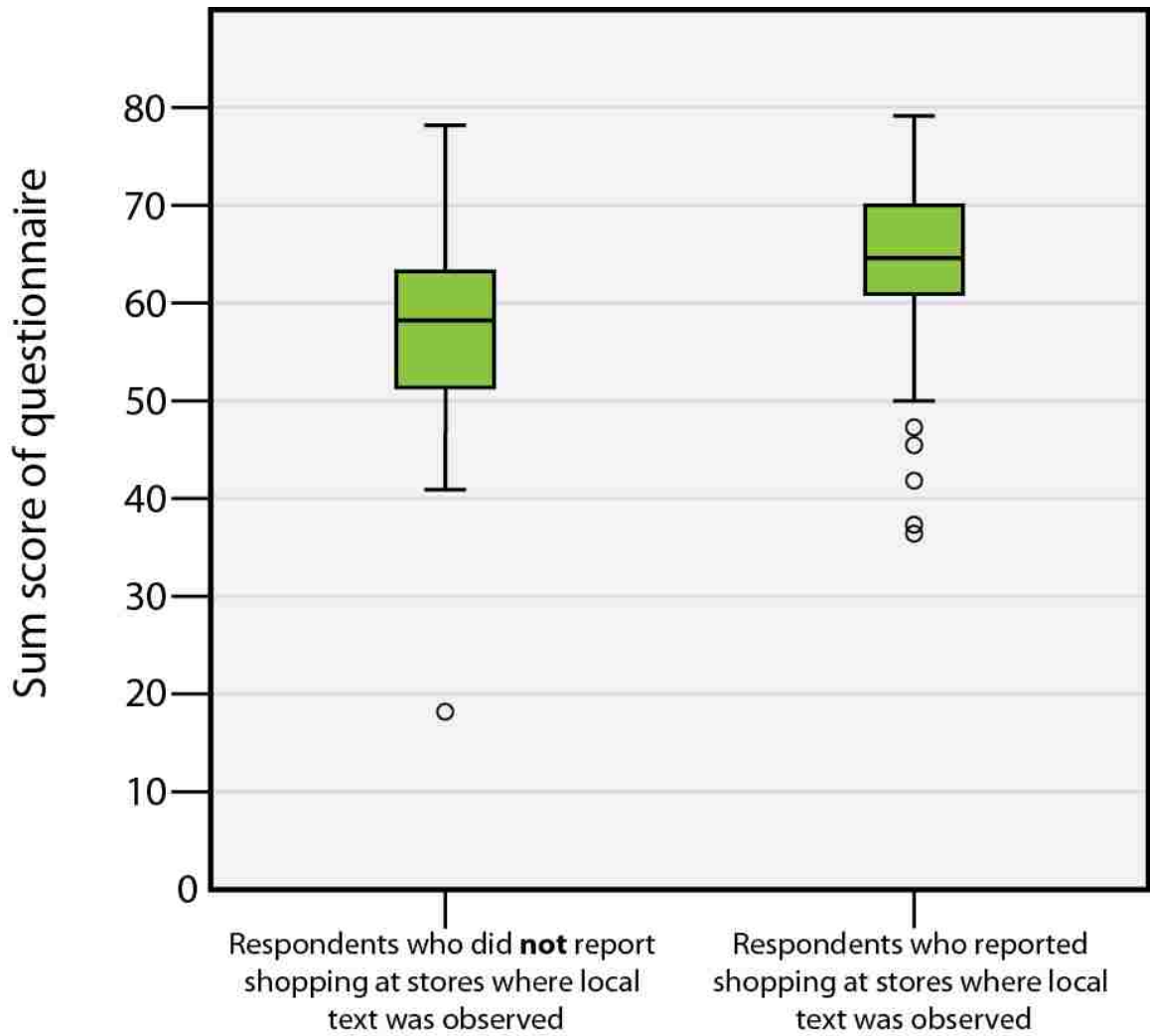
To answer the question of whether or not consumers who shop at retailers which contain local-related text view local produce in a more or less favorable way, total responses were summed of all questionnaire respondents. In total, there were 182 entirely complete responses that were summed. Of these completed responses, 143 respondents shopped at a retailer that contained 'local' text while 39 respondents did not. The mean of all responses is 63.02 with a standard deviation of 8.63. When divided into two groups, results showed that respondents who shopped at any retailer at which local related text was found had a more favorable view of local foods ( $M = 64.57$ ,  $SD = 7.53$ ) than those who did not shop at a retailer in which local related text was found ( $M = 57.36$ ,  $SD = 10.04$ ),  $U = 1491$ ,  $p < 0.001$ . Figure 9 graphically shows that the median response of those consumers who do shop at retailers which contain local text is slightly higher than those consumers who do not shop at such retailers. However, the range of summed scores for consumers who do not shop at retailers with local related text is slightly larger, possibly indicating a larger range of opinions and responses from these consumers.

### **5.1.1 Spatial**

#### *a. Natural boundaries: Retailers*

There were several instances of text that referred to local food as being delimited by natural boundaries. Natural boundaries, in this case, referred to local products that are bounded by naturally formed physical structures, which may include mountains or valleys, for example. Topographically, the study area is divided by both mountains and a river valley (Figure 10). The river valley itself did not affect retailers' definition of "local" produce, nor was it ever a response as a delimiting factor from any vendor within

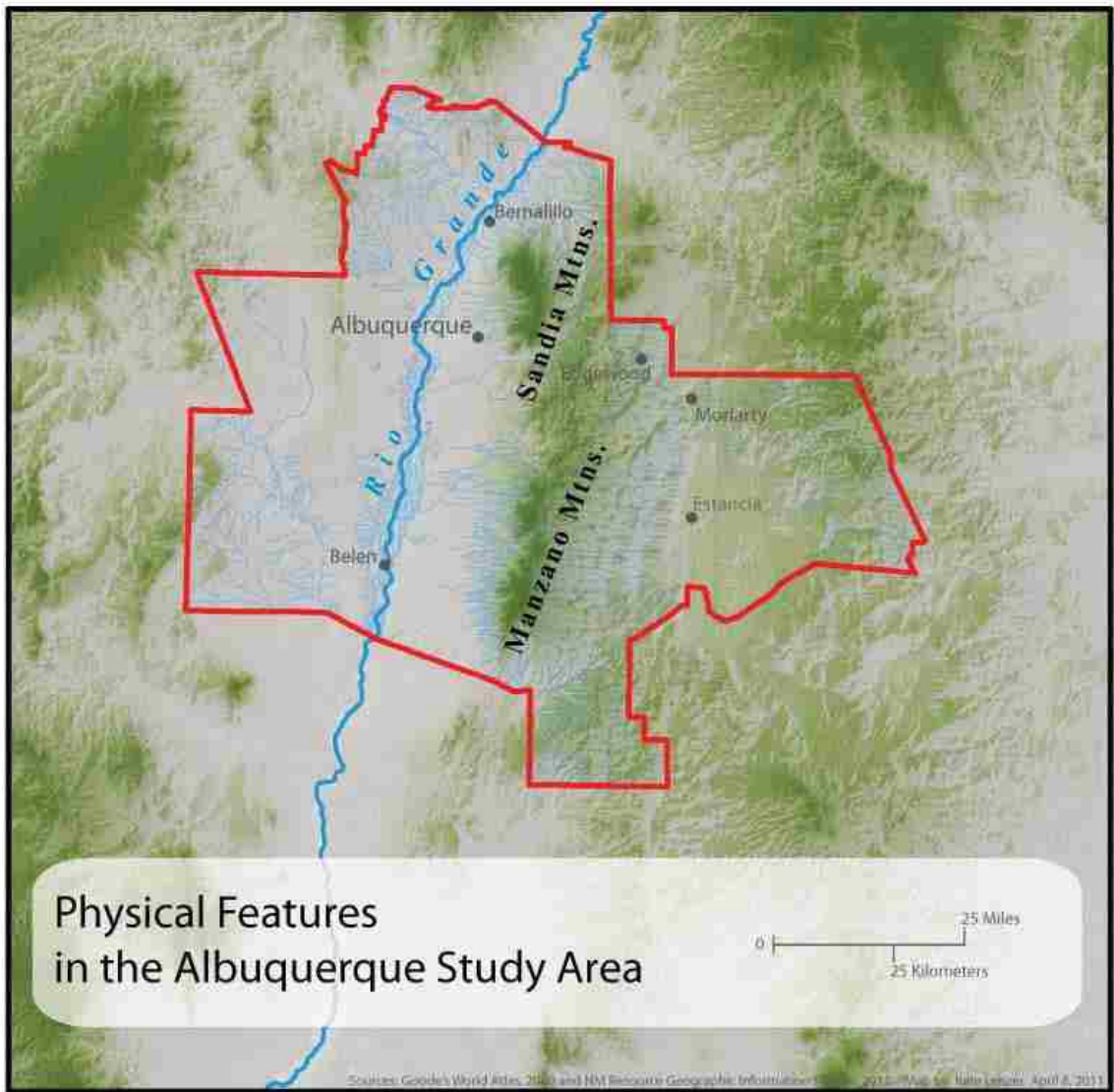
Figure 9: Box plot showing summed response score of consumers who do and do not shop at retail outlets in which text related to local produce was observed.



\* Open circles (O) in the graph indicate outlier data observations



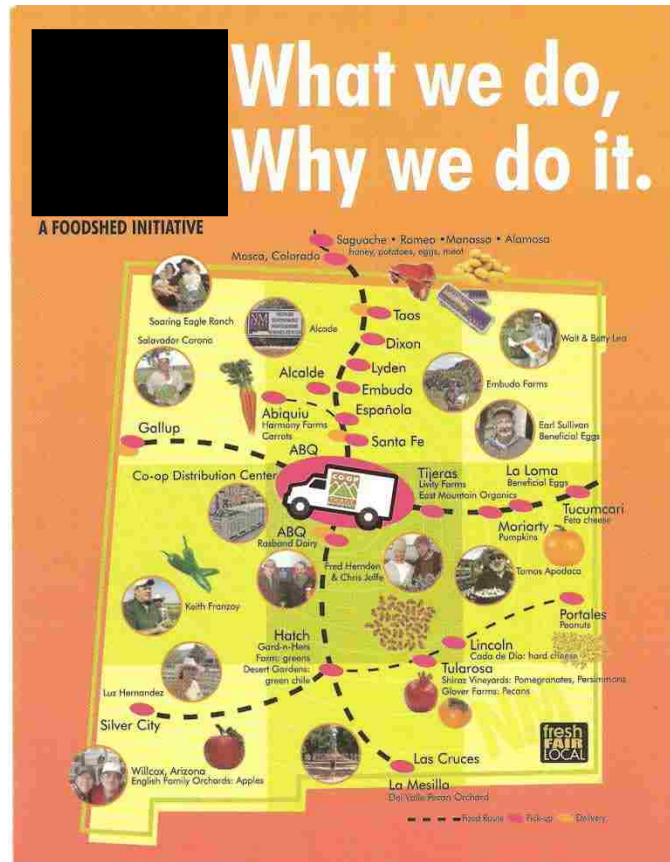
Figure 10: Prominent natural features in the study area



the farmers' markets.

However, the idea of a foodshed as a boundary for local food was present in Company B. In general, the idea of the foodshed was introduced as a way to envision flows of food products within an area based on local watersheds, or water drainage systems that would theoretically allow for self-sufficiency as well as the promotion of social values and environmental justice (Kloppenberget al., 1996). Company B provided text that indicates the use of a "food-shed" as the boundary of "local" that is based around "regional watersheds and traditional acequias" (Company B, informational brochure, July 2010). Acequias are historic communal irrigations systems throughout New Mexico that still provide irrigation to many agricultural sites and communities today and remain a significant part of New Mexican culture and landscape (New Mexico Acequia Association, 2011). The definition of "local" along these natural boundaries could be problematic to understand due to its vagueness and unknown calculation. Interestingly, Company B also quantified the definition of their "food-shed" by including a secondary description of the foodshed as being a "300 mile radius around Albuquerque" (Informational brochure, Company B, July 2010). By doing this, the retailer left the theoretical, natural-unit notion of the foodshed and instead applied a radial distance to define "local" produce. Additionally, Company B was the only retailer that provided a map to visualize their spatial definition of "local" (Figure 11). However, instead of presenting a clear idea of where "local" comes from, this retailer, which already introduced ideas of natural boundaries and radial boundaries, also visualized New Mexico as a political boundary of "local".

Figure 11: Map of spatial delimitation of local products from Company B



Another natural boundary that delimited the source of local produce was the mountain range that divides the city of Albuquerque from the eastern portion of the study area. This portion of the study area, commonly referred to as the “East Mountains”, includes several populated places such as Estancia, Edgewood and Moriarty, but comparatively remains more rural in nature. Vendors in farmers’ markets east of the mountains cited these mountains as the divide between what is considered “local” and what is not “local”. The common response was “‘local’ is anything from the East Mountains” (Interviewee 9, July 2010), which implied a boundary to the west defined by natural features. Interestingly, in these situations, there was never a northern, southern or eastern boundary mentioned, which indicates the strength of conviction that anything from Albuquerque would be viewed as sourced from the outside and would not be considered local. In this case, distance was not the most important factor, but rather the physically dividing features. However, the view from the western side of the mountains is different because the mountains were never cited as being a dividing factor in deciding which products were local or not local. Frequently, retailers in Albuquerque, on the western side of the mountains, included produce from the East Mountains to be considered local. It is important, however, to acknowledge that natural boundaries are extremely flexible and possibly changing by season. Because of this, natural boundaries and political boundaries often coincide, which may be the case when discussing the East Mountains

*b. Natural boundaries: Consumers*

There was one question on the consumer questionnaire that asked respondents about their level of agreement with the statement “Produce grown in the East Mountains

is NOT local (including areas such as Tijeras, Edgewood, Moriarty, Estancia, Mountainair, etc.)”, which directly corresponded to the natural boundary that was found to be a driving factor to retailers on the east side of the mountains, but not the west side. Overall, there was disagreement with this statement (Table 5), which indicated that the East Mountains area was considered to be a place from which local produce can come. This disagreement did not appear to be related to respondent Zip codes. For example, both respondents reporting Zip codes on the east side of the mountains, as well as those respondents with Zip codes on the west side of the mountains, disagreed with this particular Likert statement. From the consumer comments, natural boundaries were not a strong deciding factor on how local produce is spatially defined. There was only one instance in which a respondent supplied a spatial definition of local that was based on natural boundaries was recorded. In this case, the respondent considered local produce to be defined by his/her watershed area.

*c. Political boundaries: Retailers*

Political boundaries as the designation of where local products come from occurred frequently among retailers. Political boundaries refer to the borders created by governmental units, which can be considered sub-national, national or international. Within retailers, the most commonly used political boundary to define where local foods come from was “all of New Mexico”, which could be considered a national or international boundary due to its shared border with Mexico.

However, there were also instances in which local was considered to be from anywhere in New Mexico, Colorado or Texas. One retailer, Company A, also introduced an idea of varying degrees of localness based upon political borders. In this case, the

*Table 5: Responses to Question 27, which refers to natural boundaries of “local”; 5=strongly agree, 1=strongly disagree*

<b>Score</b>	<b>Number of Responses (% of total)</b>
5	2 (1.1)
4	3 (1.6)
3	3 (1.6)
2	31 (16.5)
1	147 (78.2)
0	2 (1.1)
<b>Total</b>	<b>188</b>

Question 27 text: “Produce grown in the East Mountains is NOT local (including areas such as Tijeras, Edgewood, Moriarty, Estancia, Mountainair, etc.)”

retailer considered everything from New Mexico to be “local” while items from Colorado or Texas were considered to be from “nearby”. No indication was given as to why produce was categorized with different degrees of localness, but a hypothesis may include convenience, due to the ability of Colorado and Texas to provide more products than would be available in New Mexico alone. This may also reflect the retailer’s desire to label more produce items as some type of local in order to gain the attention of consumers who are looking for products that are labeled as such. Interestingly, Arizona, Oklahoma, Utah, Kansas and Mexico were not included in this “nearby” category despite the possibility of produce coming from these places being more spatially proximate. In many situations, southeast Texas or northern Arizona may actually be further from Albuquerque than growing areas in Mexico or Arizona, even though these areas were not considered “local” or “nearby” by this retailer.

Political borders, however, are important due to the fixation of the geographic boundaries that they create. National and international borders form the regulatory boundaries for taxes and interstate commerce, which are very relevant when defining the boundaries of local food as well. Furthermore, political boundaries can form the boundaries of personal identification and defensive localism found in early local food movements (Hinrichs, 2003). Remnants of the idea of “us versus them” may remain for many when deciding whether or not a product from a specific, politically defined place is local or not.

International boundaries should also be investigated in terms of their usage to define where local produce comes from, especially in this study area due to its close proximity to the Mexican border. There was ultimately no text that indicated the explicit

inclusion of Mexican produce in the definition of local. However, it appeared to be implied that products from Mexico were not considered “local” due to the presence of produce from Mexico not being labeled as “local”, despite its spatial proximity.

*d. Political boundaries: Consumers*

The consumer questionnaire contained three statements that refer to political boundaries as a way to spatially define local produce. Question 25 states “Produce from another country, such as Mexico, is NOT local”, Question 26 states “Produce grown in Arizona, Colorado and Texas is local” and finally Question 29 states “All produce grown within New Mexico is local”. First, the question that asks for attitudes about the international political border received a high level of agreement from consumers indicating that for more than half of the consumers, produce from Mexico would not be considered “local” (Table 6). Whereas this designation of products as non-local was implicit within retail outlets, it became more explicit through the consumer questionnaire. Question 26, which asks about delimitation of local produce by the way of national borders, received a fairly neutral response with a slight tendency towards disagreement. Because this question was so complex, it is difficult to know whether the disagreement was a result of contestation with one, two or all three boundaries or possibly disagreement with using political boundaries as a way to decide what is considered “local”. The third question that probed consumer attitudes regarding political boundaries was one that tested for agreement with the most common political boundary cited by retailers, which was the whole state of New Mexico. Consumers answered in agreement with the statement most frequently, although the strength of the agreement was not as



*Table 6: Responses to Questions 25-26 and Question 29, which refer to political boundaries of “local”; 5=strongly agree 1=strongly disagree*

Score	Number of Responses (% of total)					
	Q25		Q26		Q29	
5	112	(59.6)	13	(7.0)	47	(25.0)
4	41	(21.9)	25	(13.4)	67	(35.6)
3	17	(9.0)	49	(26.2)	39	(19.1)
2	14	(7.5)	60	(32.1)	26	(13.8)
1	2	(1.1)	38	(20.3)	6	(3.2)
0	2	(1.1)	2	(1.1)	3	(1.6)
Total	188		187		188	

Question 25 text: “Produce from another county, such as Mexico, is NOT local”

Question 26 text: “Produce grown in Arizona, Colorado and Texas is local”

Question 29 text: “All produce grown within New Mexico is local”

high as anticipated given that consumers frequently use this spatial boundary as a defining factor for local produce.

The consumer comments from the questionnaire provided some insight into political boundaries as definitions of local produce. There are seven individual comments that reiterated the idea that any produce from New Mexico is “local”. However, two of these six comments were further qualified by one stating that only “locally owned farms in New Mexico” (Respondent 351104, December 2010) should be considered sources of local produce while the other considers New Mexico grown produce to be local “as long as it is not an agribusiness, just small farmers” (Respondent 351103, December 2010). With regard to Mexico, two consumer comments indicated that Mexico, or at least part of Mexico, should be included as “local” due to its proximity or historical ties to New Mexico. Finally, approaching the issue of international borders in a different manner, there is one comment that defines local to be any produce from the United States of America.

*e. Radial boundaries: Retailers*

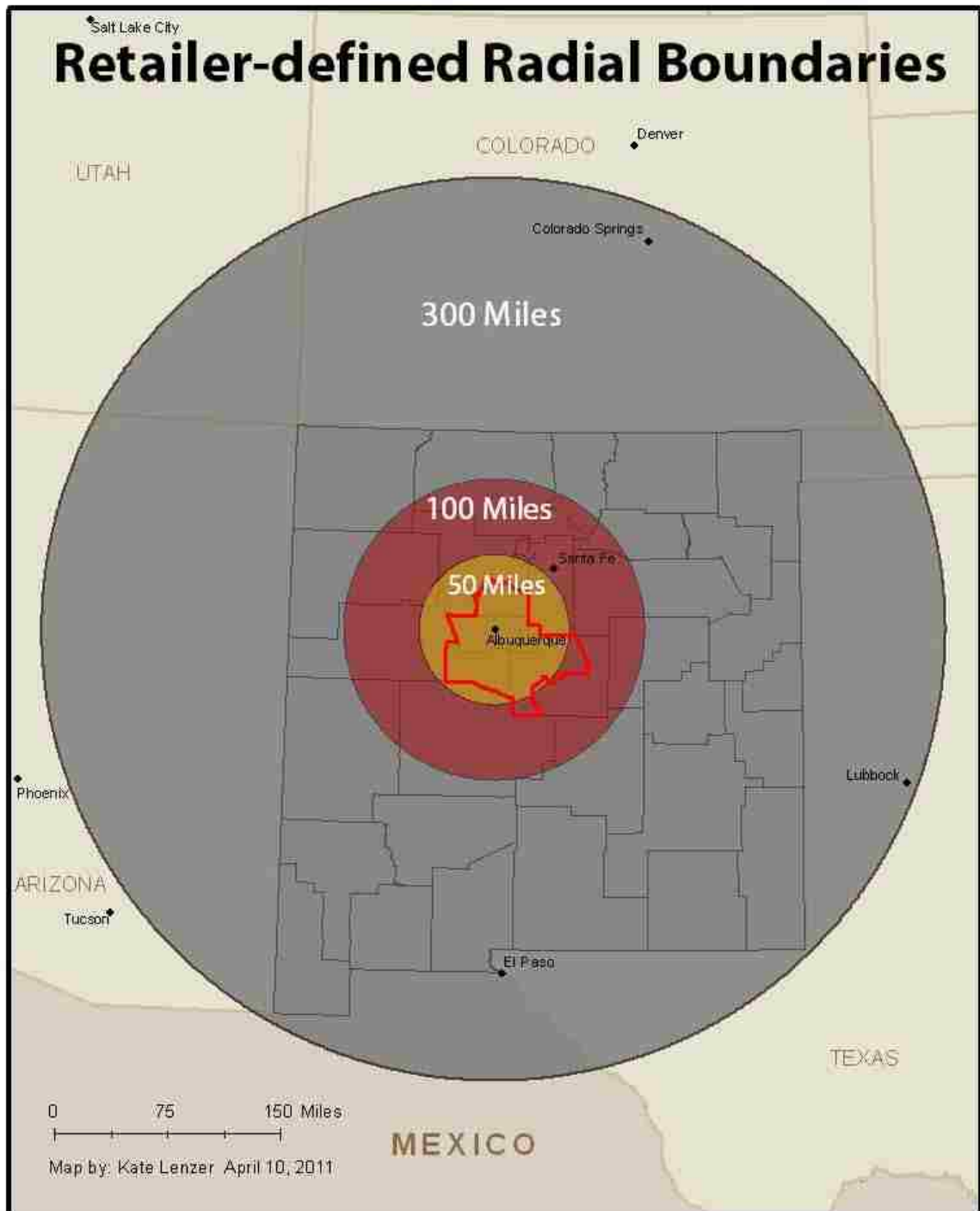
Radial boundaries as a way in which to define where local produce comes from was also a common text found within retail outlets and amongst vendors at farmers’ markets. Radial boundary in this case refers to a boundary that is defined by a measureable, Euclidean (straight line) distance from a fixed center point. As mentioned previously, Company B used a radius of 300 miles in order to quantify the notion of their “food-shed”. A radius distance definition of the source of local produce was also common among vendors in the farmers’ markets. Distances that were used to define the radius varied from 50 miles to 300 miles (Figure 12). No justification as to why these

distances were chosen was ever present, which makes the radial boundary seem arbitrary in most situations. One retailer even included a range of “50-100 miles from where the product is being grown” (Interviewee 14, July 2010), again indicating variability in the designation of the term “local”. Despite its popularity with retailers, a radial boundary definition of “local” could be difficult for common people to define and understand clearly.

*f. Radial boundaries: Consumers*

The consumer questionnaire included two statements that collect attitudes regarding radial boundaries of local produce. The first statement, number 24, asked if “produce grown within 100 miles of my (the respondent’s) home is local” while the other statement, number 28, asked if “produce grown within 300 miles of my (the respondent’s) home is local.” The statement that asked about the 100 mile radius received mostly agreement from respondents and very little disagreement (Table 7). This agreement with a 100 mile definition of local was especially relevant due to the popularity of the “100-mile diet” in popular culture, in which participants make a commitment to only eat foods that come from within 100 miles of where they live (Smith and MacKinnon, 2008). This may indicate that consumers receive ideas about definitions of “local” from many sources other than retailers. The statement that asks about the 300 mile radius received a very neutral response with the same amount of strong agreement and strong disagreement, although these responses are relatively low in number. This may indicate that 300 mile radius is a breaking point for a many people when considering a radial boundary as a way to define where local produce comes from.

Figure 12: Retailer-defined radial boundaries of local produce



*Table 7: Responses to Question 24 and Question 28, which refer to radial boundaries of “local”; 5=strongly agree, 1=strongly disagree*

Score	Number of Responses (% of total)			
	Q24		Q28	
5	73	(38.8)	19	(10.2)
4	77	(41.0)	52	(27.8)
3	23	(12.2)	54	(28.9)
2	9	(4.8)	42	(22.5)
1	2	(1.1)	16	(8.6)
0	4	(2.1)	4	(2.1)
Total	188		187	

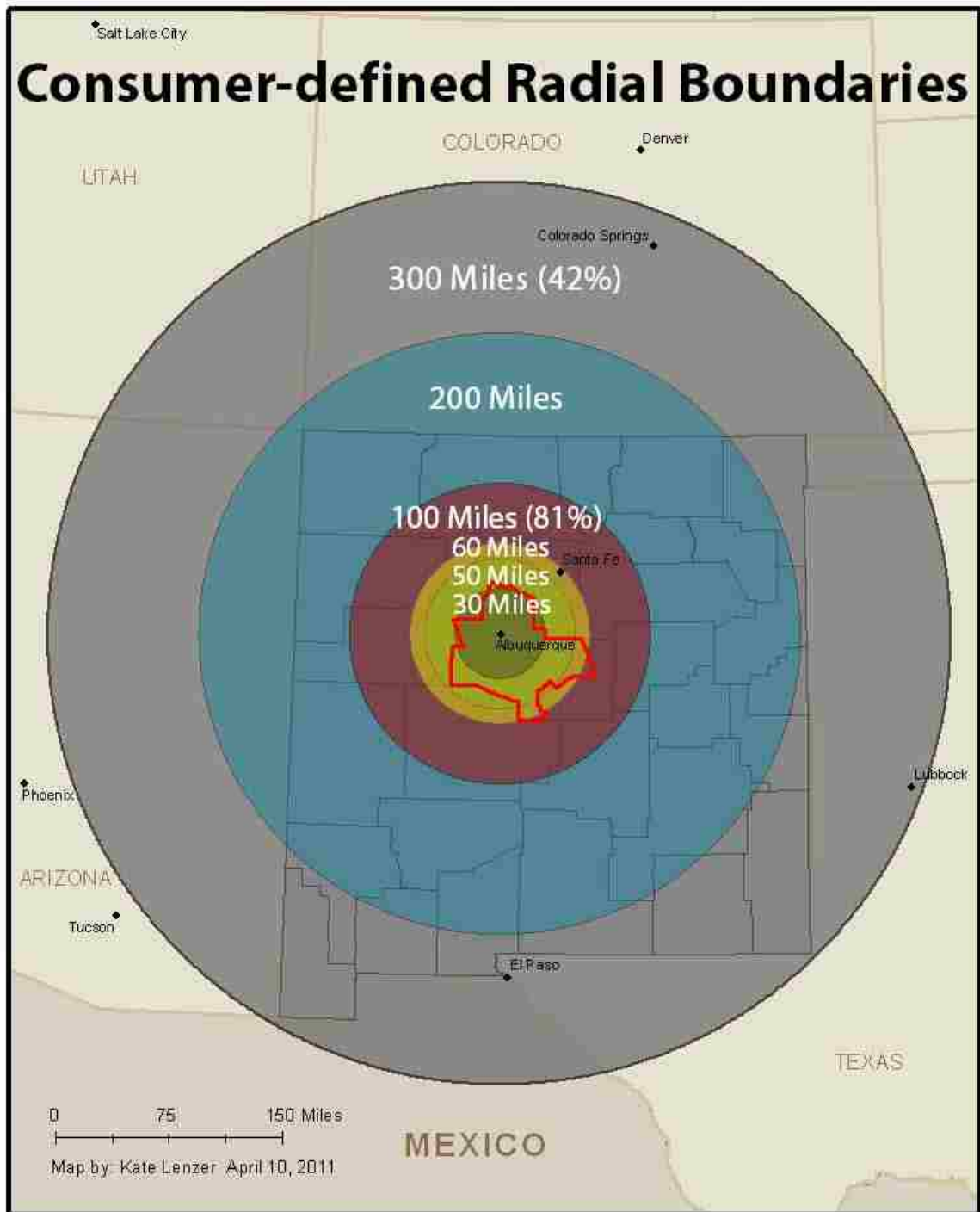
Question 24 text: “Produce grown within 100 miles of my home is local”

Question 28 text: “Produce grown within 300 miles of my home is local”

From questionnaire comments, several consumers indicated agreement with using a radial boundary as the defining factor of what is considered “local” (Figure 13). However, as was seen within retail outlets, there is a diverse span of what the proper distance of this radial boundary should be. Two respondents cited 30 miles as the maximum area that should be considered the source area of “local” produce, while another reported that a 30 mile radius is impractical and 300 miles is more reasonable. Two respondents responded that 50 miles is their preferred radius of “local” produce and an additional seven individuals cited a 100 mile radius as the boundary of “local”, with one respondent explicitly ignoring political boundaries by stating that “...within a 100 miles radius, it is local to me. If that’s in Colorado or Arizona then that’s fine” (Respondent 361667, January 2010). There were also two comments in between the others, with one citing 60 miles and the other 200 miles as radial boundaries. Additionally, two consumers commented that “local” produce is anything that comes from the range of 100-300 miles away. One of these comments is further qualified by differentiating between “local” food, which is from a 100 mile radius and regional food, which comes from a 300 mile radius.

Although consumers further qualified their notion of radial distance boundaries in some of the comments, there was no justification provided as to why 50, 100, or 300 miles was their chosen distance measurement. Again, as seen in the retail outlets, the radial boundaries for defining local often appear arbitrary or defined by convenience. There has been no indication of whether or not consumers understand the actual span of the radial boundaries they define. Consumer perceptions of radial boundaries may be influenced by personal experiences or mental perceptions of distances that may or may be

Figure 13: Consumer-defined radial boundaries of local



truly accurate. This makes using radial distances as delimiters of local produce even more difficult to understand in terms of consumer comprehension. Additionally, when defining “local” by radial boundaries, it is difficult to know whether consumers are conceptualizing space in terms of distance or area. A respondent from the study area may know that Denver, Colorado is about 450 miles from Albuquerque, New Mexico when driving, but these 450 miles may expand to an area much beyond Denver, Colorado when measured with a Euclidean radial distance. Understanding consumer perception of maps, distance and area is critical when evaluating such radial delimitations of local produce.

*g. Conceptual boundaries: Retailers*

The last spatial theme to be included in this research is that of conceptual boundaries, which occurred least often out of the four boundaries in the retailers surveyed. Conceptual boundaries can be described as boundaries that are soft-cut and defined by various ideas that have implications of distance. Often, this category was one that was used due to the inability of categorizing the text into the other spatial themes. This theme was not found within traditional retail outlets but instead stemmed from definitions found with farmers’ markets. For example, one vendor defined “local” products as a “producer’s willingness to drive to market to sell the produce that was picked the previous day” (Interviewee 6, July 2010). In this case, there is no explicit spatial definition of “local”, but instead a cost distance that is bounded by space since a person can only drive so far in a single day to arrive at market in time to sell the produce. Another conceptual boundary that occurred is that the definition of where “local” comes from depends on the product. In this idea, “local” was considered to be the closest possible source for that given product, whether or not it crossed political or natural



boundaries or exceeded a given radial distance. This theme of conceptual boundaries certainly contained the most unique notions of spatially driven definitions of local produce, but also demonstrated best that there is no single spatial definition of “local” that can be considered more correct or applicable than others.

*h. Conceptual boundaries: Consumers*

There were no questions included in the consumer questionnaire that test any form of conceptual boundaries due to their unique character and variable understanding. However, when prompted by the open ended question “If your idea of the origin of local produce varies from the statements above, where do you believe local produce comes from?”, several individual consumer comments indicated some type of conceptual spatial definition of where local produce comes from. Again, this indicated that the understanding of how to spatially define “local” foods is complex and variable, as was illustrated by the conceptual boundaries found within retail outlets. The ideas that are related to these conceptual boundaries include cost distance and product-based “local” designation.

Distance with some variant of cost or relativity was cited frequently in the consumer comments. This notion refers to boundaries that represent some type of distance that is not consistently measureable, but often qualified by other criteria in order to create a definition of “local”. For example, one respondent considered “local” produce to come from “an hour or two drive from my home” (Respondent 350859, December 2010). This use of distance in hours is also likely to be based upon consumer experiences of which city they could drive to in a certain amount of time. Because of this notion, the

delimitation of local produce based on distance in hours is often very rooted in a specific place.

Likewise, another respondent considered fossil fuel usage to be the cost factor by considering produce from the Albuquerque area to be more “local” than produce from 100 miles away due to the lower fossil fuel input (Respondent 350892, December 2010). Consumers also acknowledged the idea that boundaries and distance were relative by responding that the creation of local designations based on state lines could be misleading because “...parts of Mexico are much closer than say south Tx or North CO” (Respondent 350868, December 2010) or “...western Texas is far more local than eastern Texas...” (Respondent 351248, January 2010).

There were also consumer responses that defined “local” based on a specific product or place. As an illustration of a product-based definition of local, one respondent commented that “local” “sometimes depends on the product. Nuts or peanuts for example, travel a bit further than fresh produce such as carrots or lettuce” (Respondent 350989, December 2010) while another considered “local” to be “pecans, onions and green chile from the Hatch and Mesilla Valleys down south...” (Respondent 349795, December 2010). In such situations, consumers were assessing the definition of “local” on a product by product basis that allowed for variable distances based around the product. Product based definitions of “local” in New Mexico are especially intriguing due to the prominence and cultural and economic significance of chile peppers. Green chile has been grown in New Mexico for over 400 years and prior to 1990, very little green chile was imported from Mexico. However, in the last twenty years, New Mexican grown chile has been increasingly sent to Mexico for processing or more commonly,

Mexico grown chile is sent to New Mexico to be included in chile products (Hall & Skaggs, 2003). Subsequently, a movement called “Keep New Mexico Green” has appeared which advocates for the clear and exclusive labeling of New Mexico grown chile (New Mexico Chile Association, 2011). However, without such labeling, a product based definition of local may also inadvertently include products from Mexico or other areas that may or may not be spatially proximate.

### **5.1.2 Embedded Values**

#### *a. Environmental: Retailers*

Text was found within several retail outlets that cited environmental values as an understanding of local produce. This environmental theme encompasses any values that are related to sustainability, land use or other various factors rooted in or affecting the earth’s biophysical natural environment. The most common text in this environmental theme was the use of minimal transportation to get produce from the place of production to distribution to retailing to finally the place of consumption. The idea presented by retailers was that because a “local” product does not use as much transportation, there was not as much stress on the environment due to reduced fossil fuel usage. To exemplify this notion, Company A had a large sign hanging in the produce section that read “carrying locally grown fruits and vegetables reduces stress on the environment because of shorter shipping distances” (In-store advertisement, Company A, July 2010), which was accompanied by an image of a two human hands together near the ground holding soil with a seedling growing out of that soil. The imagery that the retailer chose to use could easily have the effect of making the consumer feel like they are doing something good for the environment by buying the locally sourced produce. The sign

appeared to give sentiments of simplicity and humbleness, linking the human and environment together through the idea of local food. Interestingly, this same retailer gave a contrasting view by having a piece local advertising material that contains the image of a tractor. Although the tractor may be an iconic agricultural image, it did not create the same sentiments about reduced environmental stress.

*b. Environmental: Consumers*

The consumer questionnaire contained two statements that asked explicitly about environmental aspect of local produce. The first, Question 13, asked for the level of agreement on “Locally grown produce does NOT use water resources efficiently”. The responses are shown in Table 8 and indicate a median response of 2, which is simply “disagree”. There was very little agreement with this statement, but more interesting is that this question received the highest number of “0” responses, which means “No Answer”. The reason for this high number of “No Answer” responses is unclear but could indicate either lack of consumer knowledge or lack of consumer opinion. In a region where water resources are often scarce, it was surprising that this aspect of local food did not merit a stronger response on either end of the Likert scale. The other statement that consumers were asked to respond to is Question 15, which stated “Local produce requires less fossil fuel inputs than distantly sourced produce”. Fossil fuel, in this question, could have encompassed transportation of the produce, as well as various production inputs, such as machinery use and fertilizers. It is unknown how each consumer interpreted this particular question. The results for this statement indicated agreement, with “strongly agree” being the most common response. This statement did not receive as many neutral (15.5%) or “No Answer” (6.7%) responses as the previous

*Table 8: Responses to Question 13 and Question 15, which refer to environmental values of “local”; 5=strongly agree, 1=strongly disagree*

Score	Number of Responses (% of total)	
	Q13	Q15
5	1 (0.52)	74 (38.3)
4	5 (2.6)	68 (35.2)
3	66 (34.2)	30 (15.5)
2	40 (20.7)	6 (3.1)
1	56 (29.0)	2 (1.0)
0	25 (13.0)	13 (6.7)
Total	193	193

Question 13 text: “Locally grown produce does NOT use water resources efficiently”

Question 15 text: “Local produce requires less fossil fuel inputs than distantly sourced produce”

environmentally-themed statement, which may indicate more consumer knowledge and opinion on fossil fuel usage of local produce versus distantly sourced produce.

*c. Cultural: Retailers*

Culture, as a theme of local produce, is not one that is often discussed in local food system literature in the United States of America. However, New Mexico has a strong and deeply rooted local food culture (New Mexico Chile Task Force, 2003; Pilcher, 2001; Trigg, 2004). For this research, cultural definitions of local produce included factors that are rooted in the traditions and preferences of a given place. Explicitly, one retailer, Company B, maintained that providing “local” food is a way of supporting the local culture because the foods that can be grown in the area are often traditional. This same retailer uses strategic imagery of the Zia sun on local product labeling to demonstrate the cultural connection to New Mexico. The Zia sun, which is a symbol of the Zia Indian Pueblo, is found on the New Mexico state flag and also represents a culture deeply rooted in tradition (Zia Pueblo, 2011). Implicitly, when a consumer sees that symbol as representative of local produce, they are also making a connection with New Mexican culture. Additionally, this retailer-defined “local” by incorporating acequias, which again indicates a definition of local that is rooted in place, culture and tradition.

Along a similar notion, two retailers hung banners available from the New Mexico Department of Agriculture near their local produce that contain the words “New Mexico, Grown with Tradition” and “New Mexico, Taste the Tradition” (Figure 14). Despite these signs coming from the Department of Agriculture, the retailers’ choice to hang the banners creates a cultural connection between the locally produced food and

New Mexican tradition and authenticity. Such demonstrations can be linked to the idea of terroir, or labels of origin. Labels of origin can be described as the marketing and cultural branding of food through its association with a specific place (Feagan, 2007). This association, therefore, can create a greater value placed on these foods because of the tie to a specific place and tradition, which could ultimately lead to a brand creation based around products from that place (Kneafsey et al., 2001). Returning to the case of New Mexico, the use of such signage that highlighted the products' traditional taste and growth methods created a label of origin that placed a cultural value on food to reach an economic gain.

*d. Cultural: Consumers*

One question on the consumer questionnaire asked about opinions regarding cultural notions of local food. This is Question 22 and stated "Traditional agricultural knowledge will be preserved through the support of local produce". The responses to this question (Table 9) indicate consumer agreement (36.2%) and strong agreement (31.9%). No comments from consumers discussed or mentioned local produce in the context of local culture.

*e. Social: Retailers*

Social values embedded in local produce were touted by several retailers within the study area. This category of values is defined by being related to the interactions of individuals or groups of individuals, which could be producers, retailers, consumers or any other actor within the food system. Although this definition could encompass any number of situations, the main idea that was present in retailer text regarding social values was connections at various scales. On a larger scale, retailer text was found to

*Figure 14: Example of New Mexico Department of Agriculture signage used by two retailers*



Image source: New Mexico Department of Agriculture, 2011



*Table 9: Responses to Question 22, which refers to cultural values of “local”; 5=strongly agree, 1=strongly disagree*

<b>Score</b>	<b>Number of Responses (% of total)</b>
5	60 (31.9)
4	68 (36.2)
3	40 (21.3)
2	10 (5.3)
1	1 (0.5)
0	9 (7.8)
<b>Total</b>	<b>188</b>

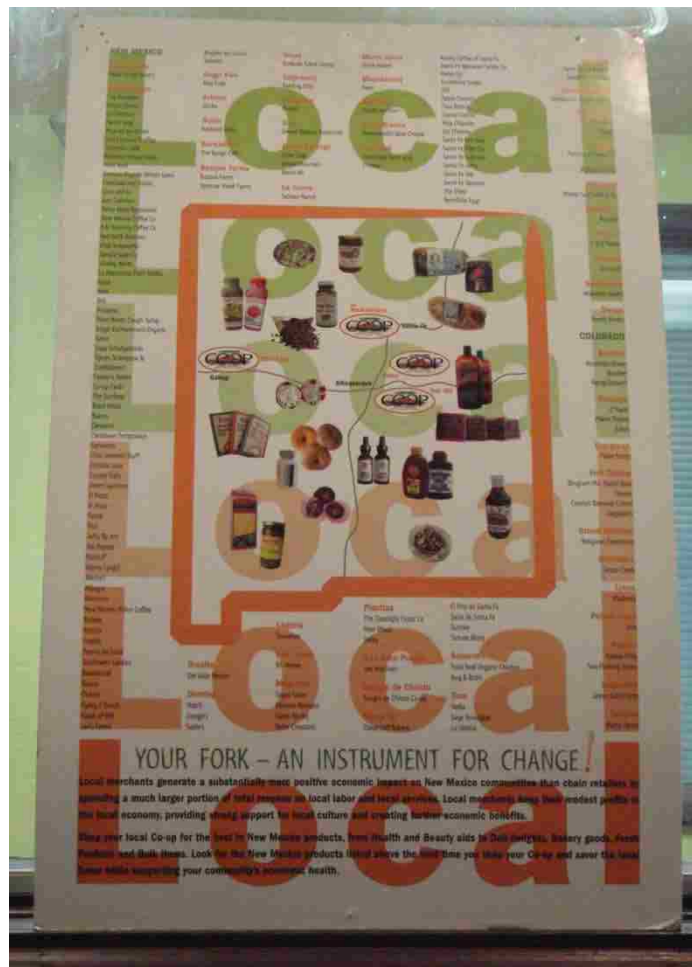
Question 22 text: “Traditional agricultural knowledge will be preserved through the support of local produce”

refer to local produce as a way of trading that “connects urban and rural communities” (Informational brochure, Retailer B, July 2010). In this case, there may not have been direct and open communication between these communities, but there was an abstract social (and direct economic) relationship being created through the flow of local products from rural to urban areas.

At a small scale, retailers emphasized face to face transactions that engaged consumers into the local food system. For example, one traditional retailer, Company C, engaged consumers by providing information on a sign that displayed information about “forging and growing strong connections among people...” (In store advertisement, Company C, July 2010) and then also highlighted, on a personal level, the two people who grow the local product being sold, which in this case, were apricots from La Luz, New Mexico. This relationship, although not direct, could potentially create social capital and loyalty found in farmers’ markets in previous research (Smithers et al., 2008).

Additionally, another retailer used imagery in their advertising of “local” foods that says “I’m Local” (In store advertisement, Company A, July 2010), which also forged a relationship between consumer and the products that the retailer markets as “local”. Relationships between consumers and the products themselves by marketing such as this example has not been a point of previous discussion in local food system literature. Also at a small scale, Company B presented text that described local food as activism by hanging a sign that highlights the local producers that the company buys from and says “your fork, an instrument for change” (In store advertisement, Company B, July 2010) (Figure 15). Again, this retailer’s sign directly highlighted the social connections that can

Figure 15: Signage found within Company B, illustrating social connections of local produce



be forged between producer and consumer, with the retailer standing as the middle man through locally produced products.

*f. Social: Consumers*

The consumer questionnaire contained four questions regarding social aspects of local produce. The first, Question 4, “I know where my produce comes from when I buy local” and was aimed at obtaining attitudes towards small scale social interactions that surround local produce. The underlying notion here is that if a consumer knows exactly where the local produce comes from, a social relationship is forged whether it is direct or indirect. The responses to this statement showed central tendency meaning that some people know where local produce comes from while others do not. Question 7, another item pertaining to social interaction at small scales, did not investigate social relationships between producer and consumer but rather attitudes between consumers. This item, “Many people I know seek to buy local produce”, again showed central tendency with very little negative skew, which was similar to what was shown with Question 4 (Table 10). This indicates that either the respondent is travelled outside their social circles to buy and interact with local produce or that respondent did not buy local food and neither does their acquaintances. Finally, Question 14, “Farmers receive a fair price for their produce if they sell it locally”, was another test of small scale social interactions. The most common response to this question was “Neither agree nor disagree” and there were also a relatively high number of “No Answer” responses, which gives indication that many consumers are not sure if farmers receive a fair price for locally produced items.

*Table 10: Responses to Questions 4-5, Question 14 and Question 18, which refer to social values of “local”; 5=strongly agree, 1=strongly disagree*

Score	Number of Responses (% of total)							
	Q4		Q5		Q14		Q18	
5	21	(10.5)	12	(6.2)	12	(6.2)	64	(34.0)
4	60	(30.0)	51	(26.4)	55	(28.5)	79	(41.5)
3	53	(26.5)	83	(43.0)	86	(44.6)	37	(19.7)
2	35	(17.5)	37	(19.2)	16	(8.3)	4	(2.1)
1	28	(14.0)	6	(3.1)	3	(1.6)	1	(0.5)
0	3	(1.5)	9	(4.7)	21	(10.9)	3	(1.6)
Total	200		193		193		188	

Question 4 text: “I know where my produce comes from when I buy local”

Question 5 text: “Local produce is grown by small farmers”

Question 14 text: “Farmers receive a fair price for their produce if they sell it locally”

Question 18 text: “One benefit of local produce is bringing together rural and urban communities”

One statement also asked for attitudes regarding large scale social interactions that may occur as a result of local produce transactions and was taken directly from retailer text. The questionnaire item, Question 18, states “One benefit of local produce is bringing together rural and urban communities”. This was the one socially oriented question that did not receive a neutral response but rather a majority of agreement and little disagreement or neutrality. Clearly, this large scale interaction is one that was perceived by consumers as taking place as a result of connections surrounding local produce.

*g. Economic: Retailers*

The economic theme that was found to be an embedded value within local food also included some aspects of business practices. This theme can be understood as relating to financial systems, business transactions, or competition dynamics that are present in the local food system. On the business aspect of this theme, Company B included text within their stores that described the fair treatment of local producers through the use of moral value chains. For this particular retailer, the moral value chain emphasizes “both product quality and the values on which every business relationship within the network operates—transparency and trust” (In-store advertisement, Company A, July 2010), which adds value to the product along each step of the food chain, from farm to table. Likewise, another retailer within a farmers’ market stated the essence of local food business as being “organic farms distributing through one efficiently run system” (Interview 1, July 2010). These moralistic notions are often difficult for traditional retailers to negotiate due to the need to maintain supply relationships and marketing professionalism with producers while operating as efficiently as possible

(Guptill and Wilkins, 2002), which could be a playing factor in why locally produced items are isolated to only a handful of stores.

In terms of economics, the most commonly used text found within retailers was the idea that the production, retailing and consumption of local food financially helps a number of actors within the local food system. At a large scale, Company A, hung a sign above the produce section within the retail outlet that had on it “local” in large letters accompanied by the phrase “our goal is to support the family farm as a vital part of America’s food production” (In store advertisement, Company A, July 2010). More commonly, this sentiment was expressed on a smaller scale by highlighting the retailing of local produce as “keeping money in the community” (Interviewee 7, July 2010) or more poetically supplying information that “local merchants spend more revenue on local labor and services” (In store advertisement, Retailer B, July 2010). The notion of keeping money in the community was cited frequently, which demonstrated the high value placed on the community in general. In local food systems, community is often bounded socially as well as spatially (Feagan, 2007), which was evident in the study area, especially in examples where local food was bound by both its support of the community as well as its geographic proximity.

#### *h. Economic: Consumers*

When asked, in Question 6, if “On average, local produce costs more money”, consumers responded with the general attitude that local produce does indeed cost more money to purchase (Table 11). Similar sentiments are found in consumer comments such as one respondent stating that “I would buy 100% local if it were less expensive” (Respondent 350743, December 2010) or even strong sentiments that “The markup for

*Table 11: Responses to Question 6, Question 12 and Question 21, which refer to economic values of “local” 1=strongly disagree, 5= strongly agree*

Score	Number of Responses (% of total)					
	Q6		Q12		Q21	
5	25	(12.6)	2	(1.0)	31	(16.4)
4	73	(36.7)	4	(2.1)	68	(36.0)
3	62	(31.2)	12	(6.2)	64	(33.9)
2	28	(14.1)	32	(16.6)	8	(4.2)
1	7	(3.5)	139	(72.0)	3	(1.6)
0	4	(2.01)	4	(2.1)	15	(7.9)
Total	199		193		189	

Question 6 text: “On average, local produce costs more money”

Question 12 text: “Supporting local producers does NOT make a positive impact on my community’s economy”

Question 21 text: “By purchasing local produce, I am paying the fair cost of production”



'local' and 'organic' produce is the ABQ area makes it not affordable to most people, and frankly reflects price gouging" (Respondent 351133, January 2011). As a follow-up item, Question 21 asked for attitudes about "By purchasing local produce, I am paying the fair cost of production". Responses to this statement vary although the highest percentage of respondents answered with "Agree". However, there were also many consumers who answered on the basis of neutrality with "Neither Agree or Disagree" or "No Answer" responses, which may indicate that although many consumers believe local produce costs more, they do not know if that extra money is paying for a fair cost of production to farmers. Finally, one question, Question 12, asked for consumer attitudes on the statement "Supporting local producers does NOT make a positive impact on my community's economy". This item received a very high amount of disagreement, which indicated that the majority of consumers who responded believe that supporting local produce does help their economy. This response closely mirrors the text found within many retailers.

*i. Quality: Retailers*

The final embedded value is quality, which can be understood a culmination of other values that are placed within local foods. Interest in local foods is often associated with the so-called "quality-turn" which refers to a popular movement in Europe and North America away from mass commodity production and towards production rooted in place, tradition and trust (Goodman, 2003). More broadly, quality foods may be considered foods that have a definable place of origin that are also distinguished by taste that sets it apart from other foods. Through these understandings, it is clear that the

notion of quality is closely tied to social and cultural interaction as well as a spatial definition of foods.

Within the retailers surveyed, all included text that made at least one reference to a quality related aspect of local produce. Most notably, the idea of local food being defined by its freshness and taste was utilized in marketing schemes throughout several traditional retailers. Freshness and taste were generally used as relative phrases that exhibited qualities of a slogan or catch-phrase more than words or phrases with a solid or formal definition. For the retailers, this may have been the strategy in order to set their “local” products apart from other produce in terms of quality, especially because good “quality”, instead of good price is becoming the competition dynamic amongst those who sell food by way of alternative methods (Goodman and Goodman, 2009). Also within farmers’ markets, freshness and “harvested at peak ripeness” (Interviewee 10, July 2010) were found to be defining characteristics of local produce, even over spatially explicit definitions. This finding is similar to that from vendors at farmers’ markets in Ontario, who held the quality of produce to be the most prominent consumer expectation of the produce, followed closely by geographic proximity of where the produce comes from (Smithers et al., 2008).

*j. Quality: Consumers*

Three individual items on the Likert scale questionnaire asked about consumer perception and attitudes towards quality embedded within local food. When asked, in Question 8, if the “overall quality of local produce is NOT any better than that of distantly sourced produce”, consumers answered with disagreement, showing that the majority of consumers did believe that the quality of local food is indeed better than that

of distantly sourced produce (Table 12). To investigate freshness specifically, one Likert scale item, Question 10, stated that “freshness is the most important aspect of local produce”. This was a very strongly worded question, but the majority of consumers either agreed or strongly agreed, which showed that freshness is as important to consumers as it appeared to be to retailers within the study area. Finally, consumers were asked about an item, Question 11, which stated “I cannot trust the safety of local food”. To this statement, there was strong disagreement which, indicated that local food is perceived as generally safe to consumers. Respondent 350871 (December 2010) reiterated this idea by responding that s/he ate local “...for a number of reasons...if something does go wrong (contaminants get in the food supply) it should take much less time to track down the source”.

## **5.2 Comparison of Retailer and Consumer Results**

To compare retailers and consumers, a basic indicator item, question 19, on the questionnaire was first evaluated in order to investigate whether or not consumers who shop at retail outlets with local content “notice advertisements and other marketing material about local food”. The notion is that the consumers who do shop in stores where local text is present will indeed notice these materials more and therefore perhaps construct their understanding of local from the text in the places where they shop. When comparing median responses of this questionnaire item, those who shop at a local retailer (n=148) have a median of 4, while those who do not shop at a local retailer (n=41) have a median of 2, which indicates that local retail consumers do notice advertisements and other marketing materials about local food to a greater degree,  $U = 1746$ ,  $p < 0.001$ .

*Table 12: Responses to Question 8 and Questions 10-11, which refer to quality values of “local”; 1=strongly disagree, 5= strongly agree*

Score	Number of Responses (% of total)					
	Q8	Q10		Q11		
5	5	(2.5)	45	(23.3)	3	(1.6)
4	18	(9.1)	90	(46.6)	6	(3.1)
3	49	(24.8)	34	(17.6)	25	(13.0)
2	66	(14.1)	18	(9.3)	61	(31.6)
1	58	(33.3)	4	(2.1)	94	(48.7)
0	2	(1.0)	2	(1.0)	4	(2.1)
Total	198		193		193	

Question 8 text: “The overall quality of local produce is not any better than that of distantly sourced produce”

Question 10 text: “Freshness is the most important aspect of local produce”

Question 11 text: “I cannot trust the safety of local produce”

To compare results between consumers who shop at retailers that advertise local produce and consumers who do not shop at such retailers, eight additional indicator questions were chosen from the questionnaire. These questions relate directly back to text that was observed within retail outlets and were viewed as important and telling aspects of the local food environment. For example, Question 18 on the questionnaire states “One benefit of local produce is bringing together rural and urban communities”. This question was derived directly from text found within Company B and was found to be a prominent aspect of values inherent in local produce. When using this question as an indicator question, the consumer responses were divided into two groups. One group was those consumers who report buying produce at Company B and the second group was made of the consumers who did not report buying produce at Company B. Then, the medians of each of these two groups were calculated and compared in order to explore whether or not consumers answered a question differently depending on if they shop at a specific retailer or not. Each of the eight indicator questions follows in the this manner and refers to one conceptual theme as defined previously, with the exception of spatial-conceptual due to its absence as a concrete item on the questionnaire. A summary of the questionnaire items used for each thematic category and the retailer associated with each question is provided in Table 13.

The overall results of the retailer and consumer comparison indicate that there is not a significant difference in individual median responses between consumers who shop at a particular retailer and those who do not (Table 14). The median responses between groups are the same for the themes of spatial-natural, spatial-radial, value-environmental, value-cultural, value-social and value-economic. The only comparison in which the

medians are equal that should reject the null hypothesis of observed patterns are due to chance is value-economic (median = 1,  $U = 3263.0$ ,  $p < 0.001$ ). There are two instances in which the median responses differed between respondent groups, with the first being spatial-political and the second being value-quality. The spatial-political theme retains the null hypothesis ( $U = 4128.0$ ,  $p = 0.503$ ) while the results of median comparison for value-quality indicates significant difference between groups ( $U = 2487.5$ ,  $p = 0.005$ ).

*Table 13: Eight indicator questions with the corresponding retailers*

<b>Category</b>	<b>Theme</b>	<b>Questionnaire Item</b>	<b>Corresponding Retailer(s)</b>
Spatial	Natural	27	Farmers' Markets
	Political	26	A
	Radial	28	B
Value	Environmental	15	A
	Cultural	22	A, B, C
	Social	18	B
	Economic	12	B, C
	Quality	8	A, B, Farmers' Markets

Question 8 text: "The overall quality of local produce is not any better than that of distantly sourced produce"

Question 12 text: "Supporting local producers does NOT make a positive impact on my community's economy"

Question 15 text: "Local produce requires less fossil fuel inputs than distantly sourced produce"

Question 18 text: "One benefit of local produce is bringing together rural and urban communities"

Question 22 text: "Traditional agricultural knowledge will be preserved through the support of local produce"

Question 26 text: "Produce grown in Arizona, Colorado and Texas is local"

Question 27 text: "Produce grown in the East Mountains is NOT local (including areas such as Tijeras, Edgewood, Moriarty, Estancia, Mountainair, etc)"

Question 28 text: "Produce grown within 300 miles of my home is local"

*Table 14: Comparison of responses between consumers who do and do not shop at retailers corresponding to indicator questions*

Category	Theme	Total Responses	Group* (N/Y)	Median Response	<i>U</i>	p value	r
Spatial	Natural	188	89	1	4341.5	0.811	0.02
			99	1			
	Political	187	96	2	4128.0	0.503	0.05
			91	3			
	Radial	187	104	3	3759.5	0.119	0.11
			83	3			
Value	Environmental	187	97	4	4244.0	0.729	0.03
			90	4			
	Cultural	187	61	4	3480.0	0.273	0.08
			126	4			
	Social	188	108	4	3708.5	0.062	0.14
			83	4			
	Economic	187	105	1	3263.0	<0.001	0.27
			82	1			
	Quality	198	44	3	2487.5	.005	0.20
			154	2			

\* Group (N/Y) indicates the count of each consumer group depending of if the consumer shops at the corresponding retailer from which the indicator question was derived. The top numbers in each row are those consumers who do not shop at the corresponding retailer, while the number at the bottom represents those consumers who do shop at that corresponding retailer.



## **CHAPTER SIX**

### **Discussion**

The results of this study show that understanding the local food environment in Albuquerque, New Mexico through one set of criteria is inadequate. There are many similarities between the retailer-defined and consumer-perceived definitions local produce through the use of spatial criteria and embedded values, but these definitions are variable and the motivations for retailers and consumers to define various criteria of “local” are different. Additionally, although consumers do not appear to receive information regarding meanings and definitions of local produce exclusively through the retailers at which they shop, both retailers and consumers display a need to have some sort of defined space as local. However, despite this need to define a space as “local”, a stark absence of cartographic visualization was found within retail outlets to communicate the spatial meaning of “local”.

#### **6.1 Motivations for defining a variable local**

The realities of the observed and perceived local food system in Albuquerque, New Mexico are informed by both locational origins of produce as well as various values that have been embedded into the system, which is consistent with previous research (Selfa and Qazi, 2005; Wilkins et al., 2002). However, these definitions of “local” are variable. This variability of definitions occurs both within and between retailers and consumers and indicates that definitions of retailers and consumers are motivated differently. Retailers often displayed tendencies to create definitions of “local” in order to support business decisions and growth, while consumers’ decisions for defining “local” are rooted in space as well as culture or other values.

Retailers defined “local” in varying ways, which were often apparently defined based on business strategy. Company A, the largest retailer in the study area is an entry point for understanding this business-oriented motivation for defining “local” in a variable manner. “Local” was spatially defined by this retailer by two different sets of sub-national political boundaries with one set of criteria being New Mexico and the other including Colorado and Texas. The need to fit the company’s business strategy and encouragement of business growth, however, may inform this retailer’s decision, due to the ability of Colorado and Texas to provide more products that can be labeled as “local” in some way, than would be available in New Mexico alone. Additionally, this retailer abandoned explicit representation of community economic support as a driving factor of support for local produce in favor on engaging consumers through imagery that specifically highlights the embedded environmental values. Similar signage and other marketing materials that are engaging to consumers may be more accessible these larger retailers due to their access to greater resources. Because of this increased engagement with consumers, larger retailers may be in a position to highlight definitions of “local” beyond simple spatial parameters (Dunne et al., 2011). Since this retailer also has the most expansive spatial definition of “local”, they may be unable to correlate local produce with increased economic gain within the community, and subsequently choose to highlight values they can support through their business model.

Likewise, a smaller retailer, Company B, defined local using a natural boundary—the “foodshed”—but defined “foodshed” with a fixed radial distance that represents a non-natural criteria for defining “local”. The motivations for doing this are not exactly known, but the explicit fixed distance has the advantage of putting the

individual retailer at the center point of the local food resource area. However, by putting the retailer at a center point that is not related to the center of the natural “foodshed”, there is neglect of the bioregion from which the definition was originally founded. Additionally, this illustrates retailers’ competing interests of providing local food in large enough quantities to supply the consumer base while supplying a spatial definition of “local” that is accepted by those same consumers.

In general, throughout the study, the largest retailers provided the largest distances that were considered to be source areas of local produce, which remains consistent with previous findings (Dunne et al., 2011). This expansion of “local” space by the larger retailers highlights the concern that retailers, and local food movements in general, cannot become too large without the risk of sacrificing integrity of product and original purpose (Johnston and Baker, 2005). Finally, the expansion of “local” space and differing degrees of local by the largest retailer may indicate that marketing and labeling produce items as “local” does not indicate a change in sourcing, but rather a strategy to appeal to consumers’ demands for “local”.

Consumers also display variable definitions of “local” that are motivated by various factors, often different than those of retailers. Social values such as face-to-face transactions have been discussed as favorable components of the local food system (Hinrichs, 2000; Selfa and Qazi, 2005), which was also evident in the current research. Interestingly, aspects of transparency including fair prices for farmers and knowing exactly where local produce comes from appeared to be less important to consumers, who displayed neutral attitudes or a general lack of knowledge. However, consumers did display favorable attitudes about bringing together rural and urban communities through

local markets, which was evident though the general inclusion of both rural and urban areas as providers of local produce. Consumers may view this notion as a way to connect these diverse communities in order to both spatially and socially conceptualize the local market area (Selfa and Qazi, 2005).

Along similar lines, economic support for communities stood out in this research as a major driving motivation for consumers to engage with the local food system. Questionnaire respondents repeatedly used phrases similar to “keeping money in the community” to express their motivation for purchasing local food and 74.1% of respondents disagreed with the statement of “supporting local producers does NOT make a positive impact on my community’s economy” (Table 5.11). However, there needs to be a more thorough understanding of what “community” means in this context. This exploration of “community” may provide an opportunity to investigate how “local” is frequently understood in order to avoid a fetishized or unrealistic construction of “local” (Harris, 2010). Finally, the current research indicates that cultural and traditional values are important motivating factors for consumer definitions of local, due to consumers’ ability to identify with particular products and sentiments. Despite its relevance in this research, cultural and traditional values as being embedded values in local food systems has not been previously discussed.

With this variability in how to define and create meaning for “local”, it is critical to understand the retailers’ role in educating and transferring meaning to their respective consumers. Researchers have identified control points of the local food system to be “decisions that food retailers may make to exercise control over the said system” (Dunne et al., 2011: 55), and include retailers’ ability to educate consumers on local food and use

marketing materials to influence consumers' view of local food. Consumers in the current research who shopped at a retailer in which local marketing was found did tend to notice advertisements and marketing materials about local food more than those consumers who did not buy produce at such retail outlets. This is sensible since consumers who do not shop in retail outlets where advertisements about local food exist do not experience exposure to such marketing materials.

Likewise, consumers who did shop at retailers where "local" text was found were expected to experience a higher level of transferability of meanings of "local" from retailers' marketing and advertising devices (Dunne et al., 2011; Guptill and Wilkins, 2002). However, results show that consumers frequently respond the same to questions regarding nuanced views of the spatial and embedded aspects of local regardless of where they shop for produce. This demonstrates a deviation from previously mentioned research. For example, the indicator question about embedded environmental values, "Local produce requires less fossil fuel inputs than distantly sourced produce", has a median response of 4 by both groups of consumers (Table 14).

Such indicator questions that did not display a difference in responses between consumers puts into question the retailers' educational role that has been viewed as a control point of the local food system in previous literature (Guptill and Wilkins, 2002; Dunne et al., 2011). Such results indicate that placing retailers as the sole entity from which consumers receive information regarding local food is too simplistic or too scripted given that not every consumer can be influenced to fit into retailers' business models. As research on the interactions between local food consumers and retailers

continues, there should be continued acknowledgement that consumers are certainly influenced by, but more importantly, beyond retailers' signage and advertising schemes.

In contrast, the current research does support previous studies that have found that there is a complex relationship between food consumers and food retailers. This view of the relationship concludes that consumers engage reflexively with retailer messages given about local food in order to include their own values and understanding of space (Blake et al., 2010). Such view allows for other influences such as popular media, personal relationships and conceptions of place. While alternative ways of consumer education of definitions of local have not been identified in the present research, it is important to acknowledge the danger in reifying the "local" due to its variable, nuanced and socially constructed meanings.

The uncertainty about the motivating factors for defining variable definitions of local highlight the need of further study and methodological refinement are necessary in order to continue to theorize and understand local food systems. Similar to the current research, numerous studies (Blake et al., 2010; Dunne et al., 2011; Hinrichs et al., 2003; Morris and Buller, 2003; Selfa and Qazi, 2005; Wilkins et al., 2002), have focused attention on the local food system at the sub-national or narrower scale. While perspectives from this scale are valuable and necessary, very few studies have produced broadly generalizable results due to the acknowledgement that local food systems are very nuanced and influenced by the environment and people of a specific area. Therefore, a promising line of future research will be to compare the local food environments in two or more distinct areas using the same methodologies in order to determine if there are consistent similarities in the how each member of the food system

understands and creates a meaning for “local”. Additionally, consumer motivations for defining “local” in a specific way are beyond the scope of this research but could involve engaging with popular media and cross-cultural understandings of “local” in general.

## **6.2 Local spaces**

When understanding the spaces and boundaries of local food, researchers acknowledge that local is often bound by political boundaries (Hinrichs, 2003) or radial distances (Selfa and Qazi, 2005), but have neglected to recognize a detailed view of the spatial aspect of local food spaces. In the current research, political boundaries and fixed distances were cited as indicators of the origins of local produce by both consumer and retailers, but local spaces are also understood in terms of natural and conceptual boundaries. Despite the variation of these boundaries, retailers and consumers consistently display a need to create some sort of defined space to represent the area from which local produce comes. However, although this need of defined space exists, it does not always hold consistent or meaningful implications.

Political boundaries as delimiters of “local” were found in this research to be commonly used by both retailers and consumers. Simply “New Mexico” was cited by many as the source location of local produce, which follows along with sub-national borders believed to be a relic of agrarian development in United States (Hinrichs, 2003). However, it is impossible to state that New Mexico is understood by everyone as the exclusive source of local produce. Often, definitions of “local” based on political boundaries spread beyond one sub-national unit to include several others, such as Colorado and Texas in this research. It remains curious why one popular retailer includes Colorado and Texas as “nearby”, but neglects to include Arizona, Oklahoma or even

Utah, which are equally proximate in terms of shared borders and straight-line distance. This may be a further indication of favorable business decisions by retailers, since company districts or regions are often defined by state boundaries due to tax regulations and commerce laws. “Local” defined purely by political borders is indicated as clear-cut, easy to understand, and economically advantageous, but does not take into account factors such as distance, food system connections, product availability or bioregions.

The international border that New Mexico shares with Mexico also provides an opportunity for which to understand how “local” is conceived. This border is informative because there was not inclusion of Mexican produce as “local” despite its spatial proximity. These sentiments echo that of defensive localism, which aligns local directly against the global in an uninformed and homogenized fashion (Goodman, 2003; Hinrichs, 2003). Perhaps greater knowledge amongst U.S. consumers and retailers of Mexican sub-national political boundaries, agricultural regions and methods of production would allow for a localism that does not isolate people and products as an outside and unwanted force.

Beyond political borders, both consumers and retailers in the study area often indicated a radial distance as the delimiter of areas from which local produce came, with responses and observations varying from 30 miles to 300 miles. Given this range of variations, there is overlap, but very little consistency within and between consumers and retailers, which points to an arbitrary distance rather than one based around a common notion or measureable consequence. Instead, these fixed distance boundaries again appear to stem from the need to place spatial boundaries around “local”. However,



despite this need, it is not clear whether or not retailers and consumers understand the spatial implications of radial boundaries.

Finally, the presence of conceptual boundaries also highlights the perceived need to create a bounded space in which the local food environment occurs. These boundaries are often created by taking into account constraints such as climate, driving time and agricultural productivity. However, the spaces defined as “local” are often based on stretching the spatial limits of “local” or including certain areas in order to obtain a certain product. The outcome effect of these definitions is that “local” becomes only mildly rooted in relationships of community (Harris, 2010) or bioregions (Dunne et al., 2011).

This research indicates that local food movements may have difficulty moving away from a “local” defined by explicitly by space (meaningful or otherwise) and towards a local defined purely by values. This research has also raised questions regarding cross-country local food relationships through the intriguing Mexican-New Mexican international border. Activist notions of reduction of food miles and reduced fossil fuel usage are challenged due to spatial proximity to a productive agricultural region across an international border. Further investigation of perceptions and observations of local food near the border may reveal that cultural connections, community relations, product recognition and place creation are more important in determining what is local than purely distance relationships. The reification of “local” is neither advocated nor achieved in this research. Continued study that engages geographers with the spaces and subsequent places that are created as a result of varying understandings of local food systems would be both practical and salient.

### **6.3 Visualizing the local**

Throughout the study area, Company B was the only retailer that provided a map which illustrated a spatial definition of “local” (Figure 11). However, there are other establishments that are not explicit grocery retailer in the Albuquerque study area that depict definitions and meanings of “local”. While a map may be seen as a way to clarify spatial delimitations of “local”, this particular map only confused the definition of “local”. In this instance, the definition of “local” was confused because Company B stated that their definition of “local” was naturally based, but then included a map that depicted both radial and political boundaries of “local”. Given the range of differences in how retailers and consumers define and understand “local”, cartographic visualization may help to communicate these boundaries, especially since both retailers and consumers seek to define a bounded space to identify the meaning of “local”. The largest retailer in the study area also created a variable definition of “local”, but did not provide a map of the area they considered “local” despite higher purchasing power and other uses of imagery to highlight environmental values embedded in “local”.

Cartographic visualization and spatial cognition of local food is also promising area of inquiry due to the need to define space and yet the lack of visualization of those spaces. Future research could analyze examples of cartographic output that describes local in order to investigate whether or not meanings are muddled through this avenue of communication. Additionally, the ability of consumers to identify the spaces that they consider to be “local” could be investigated given the seemingly arbitrary and variable spaces that are often used as spatial definitions of “local” produce. The radial boundary maps provided in this work (Figure 12 and Figure 13) illustrate what can be gained by

this type of visualization. Clear and explicit maps of radial distances could impact the use political boundaries as delimiters of “local” since there are few locations within the United States of America that are less than 300 miles from a national or international border. Additionally, clearer depictions of cost distance and road networks would make visualizing local more realistic since these conceptual boundaries are frequently cited as definitions of local produce. Finally, natural boundaries, such as the “foodshed”, could be depicted by retailers in order to maintain this definition rather than confuse or dilute the meaning by using political or radial boundaries.

## CHAPTER SEVEN

### Conclusions

#### 7.1 Broader Significance

This research contributes to geography and the emerging study of local food systems through its engagement with the observed and perceived local food environments in Albuquerque, New Mexico. Geographers have made attempts to understand the intricacies of how local food systems are conceived, perceived and negotiated in space by various actors. Not only has this research provided a careful analysis of how space and values influence the extremely variable and nuanced construction and meaning of “local”, it has also contributed much needed new insights on how consumers and retailers have varying motivations that affect how the term “local” is defined. While the current research contributes another specialized study of the local food environment in a distinct location, the challenge will be to link together these specialized studies to create a more holistic and realistic understanding of local food systems. In addition, researchers should engage each member of the food system, including producers, distributors, retailers and consumers, to allow for the flow and development of ideas throughout the system to refine understandings of local food perceptions, definitions and realities.

#### 7.2 Limitations

Despite careful project planning and design, there are several limitations of the research that should be noted. First, the retailer collection of data did not take into account every outlet for buying produce due to its exclusion of community supported agriculture (CSA) schemes. Although several CSA schemes did market their produce at

farmers' markets, the explicit exploration of CSAs in the study area may have revealed more information regarding the observed food environment. Additionally, the research did not consider retailers that temporarily sell produce or restaurants that sell produce, although it is unlikely that these types of retailers would significantly affect representations of "local". Although the current research is consistent with previous research, the farmers' markets were combined into one retail unit. While this is justifiable, some detail was lost from individual vendors and markets since all of the information was combined. This created a situation in which the meanings and origins of local food within farmers' markets often became muddled due to the combination of many diverse opinions and perceptions. Finally, an explicit image analysis of the images found within each retailer would have helped to understand more of the undertones, agendas and intricacies of the retailers as they attempt to sell local produce.

Additionally, the consumer questionnaire posed a number of difficulties. Although the respondents to the questionnaire were ideally any adult produce consumer, from any demographic who may or may not have interest in local food, the survey received more responses from those consumers who do have an active interest in local food. Reasonable attempts were made to reach a wide variety of consumers, regardless of interest in local food, but this skewed representativeness should be properly acknowledged. The second limitation related to the consumer questionnaire refers directly to question 27, which specifically asks "Produce grown in the East Mountain is NOT local (including areas such as Tijeras, Edgewood, Moriarty, Estancia, Mountainair, etc)". Although this question attempts to probe consumer attitudes on natural boundaries of local, it should have included a follow-up statement that asks consumers whether or

not areas west of the mountains are considered local. Furthermore, there was no collection of consumers' socioeconomic data, which reduced the ability to distinguish how perceptions of local relate to income and race/ethnicity.

Finally, this research would have benefited from a more thorough investigation of local food within popular media. Numerous books, movies and documented movements, about local food, both locally and nationally, have appeared in popular culture the past several years and could have provided another entry point into understanding how the perceptions and attitudes of consumers regarding local food are informed.

APPENDICES

APPENDIX A: HARVEST CALENDAR OF EDIBLE CROPS IN NEW MEXICO

 = Northern Central and Eastern New Mexico  
 = Southern New Mexico

VEGETABLES	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov
Arugula										
Asparagus										
Beans (green, wax, purple, string)										
Beets										
Bell Pepper										
Black-eyed peas										
Broccoli										
Cabbage										
Carrots										
Cauliflower										
Chile (green)										
Chile (red)										
Corn										
Cucumber										
Eggplant										
Fennel										
Garlic										

VEGETABLES	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov
Greens (kale, chard, collards)										
Herbs										
Kohlrabi										
Leeks										
Lettuce										
Okra										
Onion										
Peas (shelling, sugar snap)										
Potatoes										
Pumpkins										
Radishes										
Salad greens										
Spinach										
Summer squash										
Winter squash										
Sweet potatoes										
Tomatoes										
Tomatillos										
Turnips										



<b>FRUITS AND BERRIES</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>
Apples										
Apricots										
Blackberries										
Cherries										
Figs										
Grapes										
Melons										
Nectarines										
Peaches										
Pears										
Plums										
Raspberries										
Rhubarb										
Watermelon										
<b>NUTS</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>
Pecans										
Pistachios										

Source: New Mexico Farmers' Market Association, 2011c

**APPENDIX B: IN-STORE SURVEY DATA COLLECTION INSTRUMENT**

Store \_\_\_\_\_

Location \_\_\_\_\_

Date \_\_\_\_\_

ID# \_\_\_\_\_

Type of content	Location in Store	Images?	Content

**TAKE HOME MATERIALS:**

**OTHER NOTES:**

### APPENDIX C: TYPES OF QUALITATIVE CONTENT ANALYSIS

<i>Type of Content Analysis</i>	<i>Study Starts With</i>	<i>Timing of Defining Codes or Keywords</i>	<i>Source of Codes or Keywords</i>
Conventional content analysis	Observation	Codes are defined during data analysis	Codes are derived from data
Directed content analysis	Theory	Codes are defined before and during data analysis	Codes are derived from theory or relevant research findings
Summative content analysis	Keywords	Keywords are identified before and during data analysis	Keywords are derived from interest of researchers or review of literature

Source: Hsieh & Shannon, 2005:1286

APPENDIX D: QUESTIONNAIRE ADVERTISEMENT

# SHARE YOUR OPINIONS ABOUT LOCAL FOOD!

**Believe it or not, food may travel up to 2000 miles to reach your dinner plate!**<sup>1</sup> As a result, many people have begun looking for produce and other food from sources closer to home. However, where “local” produce comes from and what “local” means is described and understood differently by every person. Therefore, I’m interested in YOUR opinions. Even if you don’t know much about “local” food, don’t worry...there are no right or wrong answers!

1. Halwell, B., 2002. Worldwatch Paper 163: Home Grown: The case for local food in a global market. Washington DC: Worldwatch Institute.

[www.nmlocalfoods.com](http://www.nmlocalfoods.com)

This survey is being conducted by Kate Lenzer, Graduate Student in the Department of Geography at the University of New Mexico

Have questions?  
Email: [klenzer@unm.edu](mailto:klenzer@unm.edu)



Local Food Survey  
[www.nmlocalfoods.com](http://www.nmlocalfoods.com)  
Questions? [klenzer@unm.edu](mailto:klenzer@unm.edu)

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Questions? [klenzer@unm.edu](mailto:klenzer@unm.edu)

## APPENDIX E: CONSUMER QUESTIONNAIRE

Found at [www.nmlocalfoods.com](http://www.nmlocalfoods.com) or <https://esurvey6.unm.edu/opinio/s?s=29056>

Believe it or not, food may travel up to 2000 miles to reach your dinner plate!<sup>1</sup> As a result, many people have begun looking for produce and other food from sources closer to home. However, where “local” produce comes from and what “local” means is described and understood differently by every person. Even if you don’t know much about “local” food, don’t worry...there are no right or wrong answers!

Remember, this survey will ask you about your attitudes and opinions related to “local” produce. The information gained from your responses will help the researcher investigate the consumer-created meaning of “local”. Just as a reminder, for the purposes of this study, produce refers to unprocessed fruits and vegetables. For example, fresh green chile is considered produce, chopped and canned green chile is not. You may also notice the phrase “distantly-sourced produce” in many questions. This phrase will also have a different meaning to each person, but refers to produce that comes from outside the area that you consider to be “local”.

Again, should you have any questions or concerns, the researcher can be reached at [klenzer@unm.edu](mailto:klenzer@unm.edu). Let's Begin!

1. Halweil B. 2002. Worldwatch Paper 163: Home Grown: The case for local food in a global market. Washington DC: Worldwatch Institute.

### **Questions 1-3 will gather some basic information about your shopping habits**

1. Please indicate ALL places where you buy fresh produce: (check all that apply)

- 99 Bahn
- Albertson’s
- Costco
- El Mesquite Market
- John Brooks
- La Montañita Co-op
- Lowe’s Supermarket
- Nice N Fresh
- Pro’s Ranch Market
- Sam’s Club
- Smith’s
- Sunflower Farmers’ Market
- Ta Lin
- The Fruit Basket
- Trader Joe’s
- Vitamin Cottage
- Wal-Mart Supercenter/ Wal-Mart Neighborhood Market
- Whole Foods
- Community Supported Agriculture (CSA)
- Farmers’/Growers’ Market
- Other (please specify)

2. Please indicate ONE place where you buy fresh produce MOST OFTEN: (check one)

- 99 Bahn
- Albertson’s

Costco  
El Mesquite Market  
John Brooks  
La Montañita Co-op  
Lowe's Supermarket  
Nice N Fresh  
Pro's Ranch Market  
Sam's Club  
Smith's  
Sunflower Farmers' Market  
Ta Lin  
The Fruit Basket  
Trader Joe's  
Vitamin Cottage  
Wal-Mart Supercenter/ Wal-Mart Neighborhood Market  
Whole Foods  
Community Supported Agriculture (CSA)  
Farmers'/Growers' Market  
Other (please specify)

**3. How often do you buy local produce?**

No Answer  
Never  
Rarely  
Occasionally  
Very Frequently  
Always

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For questions 4-29, please indicate how strongly you agree or disagree with the given statement, using the scale provided below:

0=No Answer  
1=Strongly Disagree  
2=Disagree  
3=Neither Agree nor Disagree (undecided)  
4=Agree  
5=Strongly Agree

**Questions 4-9 will gather information about your general opinions regarding local produce**

4. I know where my produce comes from when I buy local
5. Local produce is grown by small farmers
6. On average, local produce costs more money
7. Many people I know seek to buy local produce
8. The overall quality of local produce is no better than that of distantly sourced produce
9. Government officials should define regulations about where local food comes from

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**Questions 10-23 will gather information about values associated with local food**

10. Freshness is the most important aspect of local produce

11. I cannot trust the safety of local produce
12. Supporting local producers does NOT make a positive impact on my community's economy
13. Locally grown produce does NOT use water resources efficiently
14. Farmers receive a fair price for their produce if they sell it locally
15. Local produce requires less fossil fuel inputs than distantly sourced produce
16. TEXT BOX: Comments or concerns so far?

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17. In urban areas, land would be used more productively if it were NOT being used to grow local produce
18. One benefit of local produce is bringing together rural and urban communities
19. When I shop, I notice advertisements and other marketing materials about local food
20. Local produce grown in rural areas uses land productively
21. By purchasing local produce, I am paying the fair cost of production
22. Traditional agricultural knowledge will be preserved through the support of local produce
23. TEXT BOX: Comments?

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**Questions 24-31 will gather your opinions about where local produce comes from**

24. Produce grown within 100 miles of my home is local
25. Produce from another country, such as Mexico, is NOT local to me
26. Produce grown in Arizona, Colorado and Texas is local
27. Produce grown in the East Mountains is NOT local (including areas such as Tijeras, Edgewood, Moriarty, Estancia, Mountainair, etc.)
28. Produce grown within 300 miles of my home is local
29. All produce grown within New Mexico is local
30. TEXT BOX: If your idea of the origin of local produce varies from the statements above, where do you believe local produce comes from?
31. TEXT BOX: Additional comments

**Questions 32&33 collect basic demographic information that cannot be used to personally identify you**

32. How old are you?
  - 18 to 24 years
  - 25 to 34 years
  - 35 to 44 years
  - 45 to 54 years
  - 55 to 64 years
  - 65 to 74 years
  - 75 to 84 years
  - 85 years and over
33. What is your current residential Zip Code? \_\_\_\_\_

## REFERENCES

- Adobe Systems Incorporated. 2010. Adobe Illustrator CS5. San Jose, CA.
- Allen P., FitzSimmons M., Goodman M., Warner K. 2003. Shifting plates in the agrifood landscape: the tectonics of alternative agrifood initiatives in California. *Journal of Rural Studies* 19: 61-75.
- Anderson MD. & Cook J. 1999. Community food security: practice in need of theory? *Agriculture and Human Values* 16: 141-150.
- Arce A. & Marsden T.K.. 1993. The Social Construction of International Food: A New Research Agenda. *Economic Geography* 69: 293-311.
- Atkins PJ. 1988. Redefining Agricultural Geography as the Geography of Food. *Royal Geographical Society*. 20: 281-283.
- Bell D. & Valentine G., 1997. *Consuming Geographies: We are Where We Eat*. Routledge: London.
- Blake MK., Mellor J., Crane L. 2010. Buying Local Food: Shopping Practices, Place and Consumption Networks in Defining Food as “Local”. *Annals of the Association of American Geographers* 100: 409-426.
- Born B. & Purcell M. 2006. Avoiding the Local Trap: Scale and Food Systems in Planning Research. *Journal of Planning, Education and Research* 26: 195-207.
- Bowler IR & Ilbery BW. 1987. Redefining Agricultural Geography. *Royal Geographical Society* 19: 327-332.
- Bryman A. 2008. *Social Research Methods*. 3<sup>rd</sup> Edition. Oxford: Oxford University Press.
- Buchanan EA. & Hvizdak EE. 2009. Online Survey Tools: Ethical and Methodological Concerns of Human Research Ethics Committees. *Journal of Empirical Research on Human Research Ethics* 4: 37-48.
- City of Albuquerque. 2009. Climate Action Task force Recommendations to Mayor Martin J. Chávez. <http://www.cabq.gov/cap/strategies/local-food-and-agriculture/CAPREV08forWEBLFA.pdf> (last accessed April 30, 2011).
- Congressional Research Service. 2005. Agriculture: A Glossary of Terms, Programs, and Laws, 2005 Edition. CRS Report for Congress. <http://ncseonline.org/nle/crsreports/05jun/97-905.pdf> (last accessed April 30,2011).
- Cook I. 2004. Follow the thing: papaya. *Antipode* 36: 642-664.



- \_\_\_\_\_. 2006. Geographies of food: following. *Progress in Human Geography* 30: 655-666.
- Cook I. & Crang P. 1996. The world on a plate: culinary culture, displacement and geographical knowledges. *Journal of Material Culture* 1: 131–153.
- Dreaming New Mexico. 2010. <http://www.dreamingnewmexico.org/food> (last accessed April 13, 2010).
- \_\_\_\_\_, 2011. <http://www.dreamingnewmexico.org/food/ff-healthy> (last accessed April 22, 2011).
- Duffy R., Fearne A., Healing V. 2005. Reconnection in the UK food chain: bridging the communication divide between food producers and consumers. *British Food Journal* 107: 17-33.
- Dunne JB, Chambers KJ, Giombolini KJ & Schlegel. 2011. What does ‘local’ mean in the grocery store? Multiplicity in food retailers’ perspectives on sourcing and marketing local foods. *Renewable Agriculture and Food Systems* 26:46-59.
- DuPuis EM. & Goodman D. 2005. Should we go “home” to “eat”: toward a reflexive politics of localism. *Journal of Rural Studies* 21: 359-371.
- Duvall CS, Howard P & Goldsberry K. 2010. Apples and oranges? Evaluating criteria for classifying food retailers in a Midwestern U.S. city. *Journal of Hunger and Environmental Nutrition* 5: 526-541.
- Edible Santa Fe. 2011. <http://www.ediblecommunities.com/santafe/> (last accessed April 30, 2011).
- ESRI. 2010. ArcGIS Desktop Release 10.0. ESRI, Redlands, CA.
- Feagan R. 2007. The place of food: mapping out the ‘local’ in local food systems. *Progress in Human Geography* 31: 23-42.
- Feenstra GW. 1997. Local food systems and sustainable communities. *American Journal of Alternative Agriculture* 12:28-36.
- Feinberg B. 2003. *The devil’s book of culture. History, mushrooms and caves in southern Mexico*. Austin, TX: University of Texas Press.
- Fischer E. & Benson P. 2006. *Broccoli and desire. Global connections and Maya struggles in postwar Guatemala*. Palo Alto, CA: Stanford University Press.
- Foodprint NM, 2011. UNM Sustainability Studies Program. <http://sust.unm.edu/index.php?page=FoodPrintNM> (last accessed April 30, 2011).

- Food Corps. 2011. <http://food-corps.org/> (last accessed May 2, 2011).
- Friedberg S. 2003. Editorial: not all sweetness and light: new cultural geographies of food. *Social and Cultural Geography* 4: 3-6.
- George D & Mallery P. 2003. *SPSS for Windows step by step: A simple guide and reference*. 4<sup>th</sup> edition. Boston: Allyn & Bacon.
- Glanz K, Basil M, Maibach E, Goldberg J & Snyder D. 1998. Why Americans Eat What They Do: Taste, Nutrition, Cost, Convenience, and Weight Control Concerns as Influences on Food Consumption. *Journal of the American Dietetic Association* 98: 1118-1126.
- Gliem JA & Gliem RR. 2003. Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales. Refereed paper presented at the Midwest Research to Practice Conference in Adult, Continuing, and Community Education, Columbus, OH.
- Goodman D. 2002. Rethinking Food Production-Consumption: Integrative Perspectives. *Sociologia Ruralis* 42: 272-277.
- Goodman D. 2003. The quality 'turn' and alternative food practices: reflections and agenda. *Journal of Rural Studies* 19: 1-7.
- Goodman D. & DuPuis E.M. 2002. Knowing food and growing food: beyond the production-consumption debate in the sociology of agriculture. *Sociologia Ruralis* 42: 5-22.
- Goodman D & Goodman M.K. 2009. Food Networks, Alternative. In *International Encyclopedia of Human Geography*, edited by Rob Kitchin and Nigel Thrift, 202-207. Amsterdam: Elsevier.
- Guptill A. & Wilkins J.L. 2002. Buying into the food system: Trends in food retailing in the US and implications for local foods. *Agriculture and Human Values* 19: 39-51.
- Guthman J. 2008. "If They Only Knew": Color Blindness and Universalism in California Alternative Food Institutions. *The Professional Geographer* 60: 387-397.
- Guthman, J. 2009. Food. In *Dictionary of Human Geography*, edited by Derek Gregory, Ron Johnston, Geraldine Pratt, Michael Watts and Sarah Whatmore, 258-260. Oxford: Wiley-Blackwell Publishing.
- Hall TY & Skaggs RK. 2003. New Mexico's Chile Pepper Industry: Chile Types and Product Sourcing. *New Mexico Chile Task Force Report 8*. New Mexico State University, Las Cruces, NM.

- Halweil B. 2002. *Worldwatch Paper 163: Home Grown: The case for local food in a global market*. Washington DC: Worldwatch Institute.
- Harris E. 2010. Eat Local? Constructions of Place in Alternative Food Politics. *Geography Compass* 4/4: 355-369.
- Head L. & Atchison J. 2009. Cultural ecology: emerging human-plant geographies. *Progress in Human Geography* 33: 236-245.
- Hinrichs CC. 2000. Embeddedness and local food systems: notes on two types of direct agricultural market. *Journal of Rural Studies* 16: 295-303.
- \_\_\_\_\_. 2003. The practice and politics of food system localization. *Journal of Rural Studies* 19: 33-45.
- Hinrichs C. & Kremer KS. 2002. Social Inclusion in a Midwest Local Food System Project. *Journal of Poverty* 6: 65-90.
- Holloway L. & Kneafsey M. 2000. Reading the Space of the Farmers' Market: A Preliminary Investigation from the UK. *Sociologia Ruralis* 40: 285-299.
- Holloway L., Kneafsey M., Venn L., Cox R., Dowler E., Tuomainen H. 2007. Possible Food Economies: a Methodological Framework for Exploring Food Production-Consumption Relationships. *Sociologia Ruralis* 47: 1-19.
- Hsieh HF & Shannon SE. 2005. Three Approaches to Qualitative Content Analysis. *Qualitative Health Research* 15: 1277-1288.
- IBM. 2010. SPSS Statistics Software 19.0. IBM, Somers, NY.
- Ilbery B. & Kneafsey M. 1998. Product and place: promoting quality products and services in the lagging rural regions of the European Union. *European Union and Regional Studies* 5: 329-341.
- \_\_\_\_\_. 2000. Producer constructions of quality in regional specialty food production: a case study from south west England. *Journal of Rural Studies* 16: 217-230.
- \_\_\_\_\_. 2000b. Registering regional specialty food and drink products in the United Kingdom: the case of PDOs and PGIs. *Area* 2000: 317-325.
- Ilbery B., Holloway L., Arber R. 1999. The geography of organic farming in England and Wales in the 1990s. *Tijdschrift voor Economische en Sociale Geografie* 90: 285-295.
- Jarosz L. 2008. The city in the country: Growing alternative food networks in Metropolitan areas. *Journal of Rural Studies* 24: 231-244.

- Jamison S. 2004. Likert scales: how to (ab)use them. *Medical Education* 38: 1217-1218.
- Johnston J. & Baker L. 2005. Eating outside the box: FoodShare's good food box and the challenge of scale. *Agriculture and Human Values* 22:313-325.
- Jones E. 1997. An Analysis of Consumer Food Shopping Behavior Using Supermarket Scanner Data: Differences by Income and Location. *American Journal of Agricultural Economics* 79: 1437-1443.
- Jordan J. 2007. The heirloom tomato as cultural object: investigating taste and space. *Sociologia Ruralis* 47: 20-41.
- Kloppenburg J., Hendrickson J., Stevenson GW. 1996. Coming in to the foodshed. *Agriculture and Human Values* 13: 33-42.
- Kondracki NL & Wellman NS. 2002. Content analysis: Review of methods and their applications in nutrition education. *Journal of Nutrition Education and Behavior* 34:224-230.
- Kneafsey M, Ilbery B. and Jenkins T. 2001. Exploring the Dimensions of Culture Economies in Rural West Wales. *Sociologia Ruralis* 41: 296-310.
- Krippner GR. 2001. The Elusive Market: Embeddedness and the Paradigm of Economic Sociology. *Theory and Society* 30: 775-810.
- Kuzon WM, Urbanchek MG & McCabe S. 1996. The seven deadly sins of statistical analysis. *Annals of Plastic Surgery* 37: 265-272.
- La Montañita Co-op. 2010. <http://www.lamontanita.coop/> (last accessed April 13, 2010).
- Lacy W. 2000. Empowering communities through public work, science, and local food systems: revisiting democracy and globalization. *Rural Sociology* 65: 3-26.
- Lewis K., Kaufman J., Gonzalez M., Wimmer A., Christakis N. 2008. Tastes, ties, and time: A new social network dataset using Facebook.com. *Social Networks* 30: 330-342.
- Lind D. & Barham E. 2004. The social life of the tortilla: Food, cultural politics, and contested commodification. *Agriculture and Human Values* 21: 47-60.
- Little, J. 1999. Otherness, representation and the cultural construction of rurality. *Progress in Human Geography* 23: 437-442.
- Los Poblanos Organics. 2010. <http://lospoblanosorganics.com/> (last accessed April 13, 2010).

- Marsden T.K. & Arce A. 1995. Constructing quality: emerging food networks in the rural transition. *Environment and Planning A* 27: 1261-1279.
- Marsden T., Munton R., Ward N., Whatmore S. 1996. Agricultural geography and the political economy approach: a review. *Economic Geography* 72: 361–375.
- Martin R. and Sunley P. 2001. Rethinking the “Economic” in Economic Geography: Broadening Our Vision or Losing Our Focus? *Antipode* 33: 148-161.
- Maye D., Kneafsey M., and Holloway L. 2007. Introducing Alternative Food Geographies. In *Alternative food geographies: representation and practice*, edited by Damien Maye, Moya Kneafsey and Lewis Holloway, 1-22. Amsterdam: Elsevier.
- Miller D. 2010. Farmers’ Markets: The Public Face of Local Food. *Green Fire Times*. March, p.7, p27.
- Morgan K & Murdoch J. 2000. Organic vs. conventional agriculture: knowledge, power and innovation in the food chain. *Geoforum* 31: 159-173.
- Morris C. & Buller H. 2003. The local food sector: A preliminary assessment of its form and impact in Gloucestershire. *British Food Journal* 105:559-566.
- Morris C. & Evans N. 2004. Agricultural turns, geographical turns: retrospect and prospect. *Journal of Rural Studies* 20: 95-111.
- Morris C. & Young C. 2000. ‘Seed to shelf’, ‘teat to table’, ‘barley to beer’, ‘womb to tomb’: discourses of food quality and quality assurance schemes in the UK. *Journal of Rural Studies* 16: 103-115.
- Murdoch J & Miele M. 1999. ‘Back to Nature’: Changing ‘Worlds of Production’ in the food Sector. *Sociologia Ruralis* 39: 465-483.
- New Mexico Acequia Association. 2011. <http://www.lasacequias.org/> (last accessed May 2, 2011).
- New Mexico Chile Association. 2011. <http://www.keepnewmexicogreen.org/> (last accessed April 30,2011).
- New Mexico Department of Agriculture. 2011. Taste the Tradition® and Grown with Tradition ®. <http://nmdaweb.nmsu.edu/marketing-and-economic-development/New%20Mexico%20Taste%20the%20Tradition%20and%20New%20Mexico%20Grown%20with%20Tradition.html> (last accessed April 30, 2011).
- New Mexico Farmer’s Market Association. 2010. <http://farmersmarketsnm.org/> (last accessed April 13, 2010).

- \_\_\_\_\_. 2011a. Definition of a Farmers' Market. [http://farmersmarketsnm.org/About\\_the\\_NMFMA/Definition\\_of\\_a\\_Farmers\\_\\_Market/index.html](http://farmersmarketsnm.org/About_the_NMFMA/Definition_of_a_Farmers__Market/index.html) (last accessed March 7, 2011).
- \_\_\_\_\_. 2011b. CSAs [http://farmersmarketsnm.org/Farmers\\_Markets/CSAs/index.html](http://farmersmarketsnm.org/Farmers_Markets/CSAs/index.html) (last accessed March 7, 2011).
- \_\_\_\_\_. 2011c. Harvest Calendar. [http://farmersmarketsnm.org/Farmers\\_Markets/Harvest\\_Calendar/index.html](http://farmersmarketsnm.org/Farmers_Markets/Harvest_Calendar/index.html) (last accessed April 23, 2011).
- New Mexico Food and Agriculture Policy Council. 2009. *A Food System Approach to Cultivating Health and Wealth*. PowerPoint Presentation. <http://www.farmtotablenm.org/policy/new-resource-a-food-systems-approach-to-health-and-wealth-in-new-mexico/> (last accessed April 13, 2010).
- New Mexico Legislature. 2011. 2011 Regular Session. SB63: Government Food Purchasing Requirements. [http://www.nmlegis.gov/lcs/\\_session.aspx?chamber=S&legtype=B&legno=%20%2063&year=11](http://www.nmlegis.gov/lcs/_session.aspx?chamber=S&legtype=B&legno=%20%2063&year=11) (last accessed March 2, 2011).
- Object Planet. 2010. Opinio Version 6.3.3. Oslo, Norway.
- Pascual-de-Sans A. 2004. Sense of place and migration histories *Idiotopy* and *idiotope*. *Area* 36.4: 348-357.
- Pilcher J. 2001. Tex-Mex, Cal-Mex New Mex, or Whose Mex? Notes on the Historical Geography of Southwestern Cuisine. *Journal of the Southwest* 43: 659-679.
- Renting H., Marsden TK., Banks J. 2003. Understanding alternative food networks: exploring the role of short food supply chains in rural development. *Environment and Planning A* 35: 393-411.
- Richardson P. & Whatmore S.J. 2009. Food Networks. In *International Encyclopedia of Human Geography*, edited by Rob Kitchin and Nigel Thrift, 202-207. Amsterdam: Elsevier.
- Roy P. 2010. Improving Children's Health and the Farming Economy: NM-Grown Fresh Fruits and Vegetables for School Lunches. *Green Fire Times*. March: p7-8.
- Sage C. 2003. Social embeddedness and relations of regard: alternative 'good food' networks in the south-west Ireland. *Journal of Rural Studies* 19:47-60.
- Selfa T. & Qazi J. 2005. Place, taste, or face-to-face? Understanding producer-consumer networks in "local" food systems in Washington State. *Agriculture and Human Values* 22: 451-464.
- Slocum R. 2007. Whiteness, space and alternative food practice. *Geoforum* 28:520-533.

- Slow Food International. 2011. <http://www.slowfood.com/> (Last accessed April 30, 2011).
- Smithers J., Lamarche J., & Joseph AE. 2008. Unpacking the terms of engagement with local food at the Farmers' Market: Insights from Ontario. *Journal of Rural Studies* 24:337-350.
- Smith A & MacKinnon JB. 2008. *Plenty: Eating Locally on the 100-Mile Diet*. New York, NY: Harmony Books.
- Starr A., Card A., Benepe C., Auld G., Lamm D., Smith K., Wilken K. 2003. Sustaining local agriculture: barriers and opportunities to direct marketing between farms and restaurants in Colorado. *Agriculture and Human Values* 20: 301-321.
- Strassart P. & Whatmore SJ. 2003. Metabolising risk: food scares and the un/re-making of Belgian beef. *Environment and Planning A* 35: 449-462.
- Trigg H. 2004. Food choice and social identity in early colonial New Mexico. *Journal of the Southwest* 46: 223-253.
- US Census Bureau , 2000a. New Hampshire QuickFacts from the US Census Bureau. <http://quickfacts.census.gov/qfd/states/33000.html>. (last accessed January 21,2011)
- \_\_\_\_\_. 2000b. New Mexico QuickFacts from the US Census Bureau. <http://quickfacts.census.gov/qfd/states/35000.html>. (last accessed January 21, 2011).
- \_\_\_\_\_. 2000c. *Table DP-1. Profile of General Demographic Characteristics: 2000*. <http://www.edd.state.nm.us/images/uploads/msas/ABQ%20MSA.pdf> (last accessed September 15, 2010).
- \_\_\_\_\_. 2010. <http://www.census.gov/popest/metro/CBSA-est2009-annual.html> (last accessed May 5, 2010).
- US Department of Commerce. 1956. U.S. Census of Agriculture: 1954. *Vol 1, Counties and State Economic Areas, Part 30*. U.S. Government Printing Office: Washington DC.
- USDA. 1992a. The Census of Agriculture. Volume 1, Chapter 1: U.S. State-Level Data, New Mexico. [http://www.agcensus.usda.gov/Publications/1992/Volume\\_1/New\\_Mexico/index.asp](http://www.agcensus.usda.gov/Publications/1992/Volume_1/New_Mexico/index.asp) (last accessed April 13, 2010).
- \_\_\_\_\_. 1992b. Historical Highlights: 1992 and Earlier Census Years. [http://www.agcensus.usda.gov/Publications/1992/Volume\\_1/New\\_Mexico/nm1\\_01.pdf](http://www.agcensus.usda.gov/Publications/1992/Volume_1/New_Mexico/nm1_01.pdf) (last accessed November 14, 2010).

- \_\_\_\_\_. 1997. Historical Highlights: 1997 and Earlier Census Years. [http://www.agcensus.usda.gov/Publications/1997/Vol\\_1\\_National,\\_State\\_and\\_County\\_Tables/New\\_Mexico/nm-31/nm1\\_01.pdf](http://www.agcensus.usda.gov/Publications/1997/Vol_1_National,_State_and_County_Tables/New_Mexico/nm-31/nm1_01.pdf) (last accessed November 14, 2010).
- \_\_\_\_\_. 2002. Historical Highlights: 2002 and Earlier Census Years. [http://www.agcensus.usda.gov/Publications/2002/Volume\\_1,\\_Chapter\\_1\\_State\\_Level/New\\_Mexico/st35\\_1\\_001\\_001.pdf](http://www.agcensus.usda.gov/Publications/2002/Volume_1,_Chapter_1_State_Level/New_Mexico/st35_1_001_001.pdf) (last accesses November 15, 2010).
- \_\_\_\_\_. 2007. USDA/NASS QuickStats Ad-hoc Query Tool. <http://quickstats.nass.usda.gov/results/D514EF3F-0AD9-359D-95FF-C813EB8FA534>. (last accessed May 2, 2011).
- \_\_\_\_\_. 2009. 2007 Census of Agriculture: New Mexico State and County Data, Volume 1. [http://www.agcensus.usda.gov/Publications/2007/Full\\_Report/Volume\\_1,\\_Chapter\\_1\\_State\\_Level/New\\_Mexico/nmv1.pdf](http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/New_Mexico/nmv1.pdf) (last accessed April 13, 2010).
- \_\_\_\_\_. 2010a. 2009 State Agriculture Overview: New Mexico. [http://www.nass.usda.gov/Statistics\\_by\\_State/Ag\\_Overview/AgOverview\\_NM.pdf](http://www.nass.usda.gov/Statistics_by_State/Ag_Overview/AgOverview_NM.pdf) (last accessed April 13, 2010).
- \_\_\_\_\_. 2010b. Food and Nutrition Service: Farmer's Market Nutrition Program. <http://www.fns.usda.gov/wic/fmnp/fmnpfaq.htm> (last accessed April 13, 2010).
- \_\_\_\_\_. 2010c. Food and Nutrition Service: Senior Farmer's Market Nutrition Program. <http://www.fns.usda.gov/wic/SeniorFMNP/SeniorFMNPoverview.htm> (last accessed April 13, 2010)
- Watts M, Ilbery B. & Maye D. 2005. Making reconections in agro-food geography: alternative systems of food provision. *Progress in Human Geography* 29: 22-40.
- Weatherell C., Tregear A., Allinson J. 2003. In search of the concerned consumer: UK public perceptions of food, farming and buying local. *Journal of Rural Studies* 19: 233-244.
- Wells B., Gradwell S., Yoder R. 1999. Growing food, growing community: community supported agriculture in Iowa. *Community Development Journal* 34: 38-46.
- Whatmore S. & Thorne L. 1997. Nourishing networks: alternative geographies of food. In *Globalising Food: Agrarian Questions and Global Restructuring*. 287-304, London: Routledge.
- Wilkins JL, Bowdish E., & Sobal J. 2002. Consumer Perceptions of Seasonal and Local Food: A Study in a U.S. Community. *Ecology of Food and Nutrition* 41:415-439.



Winter M. 2003. Geographies of food: agro-food geographies—making reconnections. *Progress in Human Geography* 27: 505-513.

Zandbergen PA, Duvall CS, Lenzer KE, & Santos R. Validation of food store environment characteristics and implication for spatial accessibility analysis. University of New Mexico, Albuquerque.

Zia Pueblo. 2011. About the Zia Pueblo in New Mexico. [http://www.zia.com/home/zia\\_info.html](http://www.zia.com/home/zia_info.html) (last accessed May 2, 2011).