Exploring the Barriers within the Local Food Movement:
A Case Study of Boulder County, Colorado

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ABSTRACT

The Local Food Movement (LFM) has been heralded by many as the best Alternative Food Network; providing a sustainable approach to food production. However, success of LFM depends largely on reducing the number of barriers for member participation. What is local food and what does the LFM look like in a specific community context? This paper seeks to answer these questions in Boulder County, Colorado and the possible difficulties the LFM encounters within this community. This study aims to broaden the understanding of these barriers locally and in other communities interested in supporting a LFM by contributing to additional data to overcoming LFM barriers present communities. The approach used for data collection was multiple case studies. Between November, 2012 and March, 2013, eight participants that represented educational, production, and distribution components of the LFM in Boulder County were interviewed. The findings of this study are the LFM in Boulder County has a strong reliance on community, varied perceptions as to what local food is and a lack of shared knowledge on LFM issues that affect perceptions issues and problems.
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To my family and dog Behr: I love you. Thank you for believing in me when I did not, believe in myself.
TABLE OF CONTENTS
LIST OF TABLES ........................................................................................................................ vii
ABBREVIATIONS ..................................................................................................................... viii
INTRODUCTION ......................................................................................................................... 1
LITERATURE REVIEW .................................................................................................................. 3
   Defining the “local” in Local Food ........................................................................................... 5
KNOWN OR PERCEIVED BENEFITS OF LOCAL FOOD ................................................................. 6
   Sustainability ................................................................................................................................ 6
LIMITATIONS OF LOCAL FOOD .................................................................................................. 11
   Additional components that reflect on the Local Food System ................................................. 14
   Politics of “Localism” ................................................................................................................. 15
METHODOLOGY .......................................................................................................................... 17
THE CASE FOR COLORADO LOCAL FOOD .................................................................................. 19
BACKGROUND OF BOULDER COUNTY ....................................................................................... 19
   Transition Colorado: .................................................................................................................. 22
   Urban Food ................................................................................................................................. 22
   Community Supported Agriculture (CSA) .................................................................................. 27
   Boulder County Local Food Policy Council (BCLFPC) ............................................................... 28
   Current LFM Issues .................................................................................................................... 29
EDUCATION .................................................................................................................................. 31
   Growing Gardens ...................................................................................................................... 31
   Growe Foundation ...................................................................................................................... 33
   Boulder County Agriculture Extension – Adrian Card .............................................................. 36
PRODUCTION .............................................................................................................................. 39
   63rd Street Farm ........................................................................................................................ 39
   Jacob Springs Farm and First Season Meat CSA ...................................................................... 42
DISTRIBUTION ............................................................................................................................ 45
   The Second Kitchen Co-Op ........................................................................................................ 45
MM Local .................................................................................................................................................. 48
CAFÉ Aion ............................................................................................................................................. 51
ANALYSIS .............................................................................................................................................. 53
GENERAL CONCLUSIONS AND RECOMMENDATIONS .................................................................... 57
APPENDIX ............................................................................................................................................... 80
Interview Protocol .................................................................................................................................... 80
Participant Informed Consent Form ....................................................................................................... 81
Interview Information ............................................................................................................................. 83
LIST OF FIGURES

Figure 1. Types of Food Production Systems in the United States ................................................. 5
Figure 2. Map of Food Deserts (USDA, 2013)............................................................................. 13
Figure 3. Concept Map of Relationships within the Boulder County LFM .............................. 18
Figure 4. Heil Valley Ranch hiking Mountain biking trail (Boulder County, 2013)............... 20
Figure 5. Eat Local Guide Colorado (Boulder County, 2013)................................................... 21
Figure 6. Jonny's Truck Farm (Jonny Copp Foundation, 2013).................................................. 23
Figure 7. Front Yard Farm Boulder Colorado (The Second Kitchen, 2013).............................. 24
Figure 8. Map of Community Gardens within Boulder County (Growing Gardens, 2013)......... 25
Figure 9. CSA Growth in the United States (Local Harvest, 2013)........................................... 28
Figure 10. Function of Local Food Policy Council (Lane County, 2013).................................. 29
Figure 11. Children at Growing Garden's CSA pickup (Growing Gardens, 2013).................. 32
Figure 12. Retreat Center at 63rd St. Farm Figure 13. Intensive Planting at 63rd St. Farm ....... 41
Figure 14. MM Local Flavors: pickles, picked beets, peaches and tomato sauce (MM Local, 2013)............................................................................................................................................. 48
LIST OF TABLES

Table 1. List of perceptions about local food ................................................................. 6
Table 2. Example of reference table used for formatting interviews ............................. 18
Table 3. Boulder County Food System Numbers ............................................................ 21
Table 4. Boulder County LFM actors ........................................................................... 31
Table 5. Growing Gardens LFM Barriers ................................................................. 33
Table 6. Growing Gardens Perceptions of Boulder County LFM Barriers ................. 33
Table 7. Growe Foundation's LFM Barriers ............................................................... 35
Table 8. Growe Foundation's Perceptions on Boulder County LFM Barriers ............ 36
Table 9. Boulder County Ag. Extension LFM Barriers .............................................. 38
Table 10. Boulder County Ag. Extension Perception of BC's LFM Barriers .................. 38
Table 11. 63rd St. Farm's LFM Barriers ................................................................. 41
Table 12. 63rd St. Farm's Perception of LFM in Boulder County .............................. 42
Table 13. Jacob Spring Meat CSA LFM Barriers .................................................. 45
Table 14. Jacob Spring's Perceptions on Barriers Boulder County LFM ................. 45
Table 15. The Second Kitchen LFM Barriers ............................................................. 47
Table 16. TSK Perception's on Barriers Boulder County LFM Barriers ..................... 47
Table 17. MM Local's LFM Barriers ............................................................................ 50
Table 18. MM Local's Perception on Boulder County LFM Barriers ......................... 51
Table 19. Cafe Aion's LFM Barriers ........................................................................... 53
Table 20. Cafe Aion's Perceptions of Boulder County LFM Barriers ....................... 53
Table 21. Definition of LF by Boulder County LFM organizations ............................. 55
Table 22. Comprehensive list of barriers to LFM success in Boulder County .......... 57
Table 23. Interview Details ......................................................................................... 81
ABBREVIATIONS

1. AFN Alternative food network
2. BC Boulder County
3. BCLFPC Boulder County Local Food Policy Council
4. BFRIN Beginning Farmers and Ranchers in Development
5. CSA Community Supported Agriculture
6. GG Growing Gardens
7. GMO Genetically Modified Organisms
8. JS Jacob Springs Farm
9. LF Local Food
10. LFM Local Food Movement
11. LFS Local Food System
12. MML MM Local
13. SNAP Supplemental Nutrition Assistance Program
14. TSK The Second Kitchen
INTRODUCTION

“Eating is an agricultural act,” as Wendell Berry famously said. It is also an ecological act, and a political act, too.” – Michael Pollan

Consensus among scholars, consumers, and environmental activists is that our food system is unsustainable (Allen et.al, 2003; Horrigan, 2002; Pollan, 2006; Mckibben, 2011). Many of our health and environmental problems can be traced back to the industrial farming system (Pollan, 2006; Kush, 2011). Problems such as environmental degradation, loss of biodiversity, and poor food quality are products of industrial or conventional agriculture (Kimbrell, 2002). Sustainable agriculture on a local level promises to solve many of these problems, but the implementation of a successful food system requires a strong local food movement (LFM) (Hinrichs, 2003).

Local food (LF) production and consumption depends on place and its success is directly correlated to overcoming barriers within LFM (Follet, 2009). These barriers are: i) lack of marketing experience by LF farmers; ii) high cost of LF; iii) determining the viability of a LFM; iv) addressing politics associated with the movement; v) consumer preference to eat food that is not locally produced (Coit, 2008; Goodman et al., 2012).

As a resident of Boulder County, I have noticed an increase in reference to LF. The last seven years the farmer’s market I frequent in Boulder County has grown from several tents, to a large Saturday event. There are food trucks, music, and products labeled Colorado Proud or Local. Personal interest in food re-localization in Boulder County led to an interest in the role LF has within the economy and community. However, there are many short term challenges and long term barriers that LFM participants potentially face. These issues have been researched in other communities around the country in places like San Mateo County, California and
Burlington Vermont. These studies do not depict what is occurring in the LFM within my county, and my community.

My research goal was to understand whether the LFM in Boulder County has barriers and if so, what are they? Can they be solved with local policy initiatives, or is the LFM system flawed regardless of initiatives presented? I review the literature pertaining to the background of the LFM as well as its benefits and limitations. Then, I present necessary information about Colorado and the LFM in Boulder County. My case study will be based on interviews of different Boulder County LFM participants. Finally, I provide my overall recommendations for Boulder County and other LFMs. Participants for the case study were recruited based on their connection to the LFM in Boulder County. Different backgrounds were sought out to make this study comprehensive. Local food Community Supported Agriculture (CSA) programs, distribution, and educational organizations were all interviewed for this study. Recruitment and interviews took place between December 9, 2012 and March 24, 2013.

I thought I would find economic barriers such as the cost of LF and land in Boulder County to be the greatest barriers. I also anticipated that the structural limitations of the high plains water limited environment to also create barriers for participants. Instead, I found that social barriers are the prevalent challenges LFM participants must overcome within the county. This is a unique finding because for most LFMs social barriers are not substantial in comparison to economic or structural limitations (Goodman et al., 2012).
LITERATURE REVIEW

Background

Agriculture is the most basic relationship between nature and society because it provides people with the nutrients to sustain life (Allen et al., 2003). For this reason, agrarian society has been a dominant part of human history, until recently (Walker, 2012). Seventy years ago, the nature of agriculture changed as technology advanced. This period of change to the agriculture system is known as the Green Revolution.

The Green Revolution was pioneered by Norman Borlaug (Kush, 2001). His approach to agriculture increased the productivity of high yield variety crops (HYVs). Examples of HYVs include corn, rice, wheat, and other cereal grains (Kush, 2001). To increase productivity, planting methods became intensive and relied on more fertilizers, fossil fuels and machinery (Horrigan, 2002). This mechanized approach to agriculture has left detrimental effects on the environment. Top soil depletion, loss of plant biodiversity, and habitat destruction are all attributed to industrial farming practices (Horrigan, 2002). Industrial agriculture has also changed the American farm structure (Kimbrell, 2002; Pollan, 2006). The average farm size increasing, the number of farmers decreasing, and there are fewer family farms (Kimbrell, 2002; Evenson and Golin, 2003). Higher crop productivity from intensive agriculture contributes to a more global food system and increased consumption of imported food (Pollan, 2006; Martinez et al., 2010). Knowledge about the negative impacts of industrial agriculture continues to grow, and alternatives to our current food system are being explored (Dupuis and Goodman, 2008).

Options for the consumption and cultivation of agriculture that is not industrial or conventional are categorized as Alternative Food Networks (AFNs) (Dupuis and Goodman,
AFNs strive to produce food without causing environment degradation, human health problems, or significant inputs of petroleum (Goodman et al., 2008). AFNs are synonymous with Alternative Food Systems. Each encompasses the different components that allow a food system to function such as; producers, consumers, and the intermediaries such as retailers and restaurants (Follet, 2008; Hinrichs, 2003). The most known AFNs are Organic, Food Security, and Food Justice Networks. Each are similar in their desire to create more localized systems, produce pesticide and chemical free food, while providing equal access to nutritious food (Kloppenburg et al., 2000; Hesterman, 2011; Goodman & Goodman, 2008).

Before the rise in popularity of the LFM, the Organic AFN was viewed as the most viable and desirable (Goodman and Goodman, 2008; Rogers, 2010). However, recent controversy over the meanings of food labeling such as “organic,” “USDA Certified Organic,” “natural”, and “all natural,” have led to a distrust of labeling and food produced from distant companies (Hutchins et al., 1997; Rogers, 2010; Kristiansen & Merfield, 1997; Rogers, 2010).

Many “organically produced” products do not reflect sustainable agriculture approaches, and are increasingly mirroring their industrial counterparts (Pollan, 2010; Yakovleva, 2007; Follett, 2009; Richardson, 2011). In addition, the cost of buying an organic certification is often greater than what the average family farmer or smaller producer can afford (Kristiansen & Merfield, 2006; Yue, 2009). Certification marginalizes those who cannot afford to purchase it, even though their products are produced to the highest organic standards (Rogers, 2010; Zepeda & Leviten-Reid, 2004; Hesterman, 2009; Martinez et al., 2010).

The culmination of these issues has shifted support to the LFM, and it is becoming the most promising AFN (Goodman et al, 2012). However, local food like its predecessors, takes
many different forms, encompasses several movements, and is ambiguous in definition (Seyfan, 2006; Nestle, 2002; Hinrichs, 2000)

Defining the “local” in Local Food

A clear definition of local food does not exist. This is partly because of the emphasis on place. Place varies in climate, size, geography, and community. Every individual, whether a producer or consumer has different approaches to defining LF (Franklin et al., 2011). This disagreement is rooted in the structure of the LFM. The LFM is a product of several individual movements: The Environmental Movement, Slow Food Movement, Food Justice Movement, and The Food Security Movement (Figure 1; Guptil and Wilkins, 2002).

Figure 1.Types of Food Production Systems in the United States

All of these movements’ possess different missions and goals, but together all support locally sourced and grown food (Allen et al., 2003; Hinrichs, 2003; Nestle, 2010). The diverse range of the LFM has led to a common problem—no widely accepted LF definition. Marion
Nestle (2012), a known local food advocate and nutritionist stated: “The local food movement does not seem to be organized in any visible way and is composed of mini-and-not-so-mini movements that have developed independently” (Richardson, 2009, p.p.12).

People who define their eating practices as “locavore” demonstrate this problem. Locavores are committed to eating within 100 miles of a place believing that LF can only be sourced from a 100 mile radius (Benson, 2010). Whereas others would define local as within state or county, (Hinrichs, 2003; Zepeda and Li, 2006; Hinrichs, 2000), locavores do not consider this valid (Benson, 2012). The majority of LF data defines local food as that which is produced within 400 miles from where it was consumed (Martinez et al., 2010). Whole Foods provides yet another definition, labeling a product “local” if it is produced within one day’s drive of a store (Whole Foods, 2013).

Though not cohesive, the LFM still does address many interrelated concerns with environmental and agricultural sustainability, and helps support or build community (Starr et. al., 2003).

**KNOWN OR PERCEIVED BENEFITS OF LOCAL FOOD**

**Table 1. List of perceptions about local food**

<table>
<thead>
<tr>
<th>Common word associations</th>
<th>General Perceptions</th>
</tr>
</thead>
</table>
| Sustainability, organic, farm-to-table, healthy, fresh, farmer-grown, community, alternative, green. | 1. Less environmentally harmful  
2. Fuels local economy  
3. Better than “industrial” alternative  
4. Environmentally conscious |

**Sustainability**

The most common statements are that LFM practices are better for the environment, long term economic vitality, and community (Dupuis and Goodman, 2005; Alex Franklin et al.,
2011; Martinez et al., 2010; Mardsen et al., 2000). The sentiment that LF is “more sustainable” is heard often. Sustainability is the concept that actions of the present generation do not prevent future generations from living to the same standards (Merriman Webster, 2012). The most common association between a LFS and sustainability is that it is better for the environment, limits “food miles,” and sustains local economies.

Environmental and ecological sustainability are often used interchangeably in most LF literature (Eriksen, 2008). Each is based on the principal that there is value in sustaining populations of native biota. Perceiving the environment as inherently valuable was a reason behind better land management practices, but now environmental preservation is perceived as important because of its economic contribution (Leopold, 1986; Costanza et al., 1998; Berry, 2000). The cost of ecosystem services yearly is estimated in the trillions of dollars (Costanza et al., 1998). LF is characterized by small scale operation and responsible land management practices; therefore, it has less detrimental impact on the environment (DeWeerdt, 2009). This is consistent with the higher levels of stakeholder involvement in a LFM (Feenestra, 1997). Stakeholders are those who are directly affected by the success or failure of a LFM system. Community Supported Agriculture (CSAs) programs represent this relationship in the LFM. In a CSA, shareholders will pay the farmer in advance for a share of the food that is growing throughout the season. Money is paid prior to the growth season to aid with costs associated with production. The motivations for long term productive lands increase the practice of biodynamic agriculture, agro-ecology, and other approaches that result in more responsible land managers and a healthier land base (Richardson, 2011; Feenestra, 1997).

Furthermore, a local approach to food provides more protection of plant biodiversity (Seibert, 2011). The industrial food system grows a limited variety of plants and vegetables.
Local farmers and producers offer unique heirloom varieties that rate higher in consumer taste tests yet are not frequently available through chain super markets (Somer and Somer, 1979; Pirog and McCann, 2009; Hinrichs, 2011). Heterogeneity within the agriculture food system has been protected by home gardens and the push for more local products can only increase plant diversity. (Steinbert, 2008; DeWeerdt, 2009). This heterogeneity protects diminishing biodiversity in our food system. As climate change intensifies, having a diverse crop base increases the chance of finding plant varieties best suited to the changing climate (Mckibben, 2011; Dunne et al., 2002; Johns & Sthapit, 2004). For example, the year 2012 was the hottest year on record for the United States and drought has affected crop production across the Midwest (Gilis, 2013). Industrial agriculture does not support biodiversity, which is a considerable issue for a world food system facing climate change (Horrigan et al., 2007; Johns & Sthapit, 2004).

Possessing biodiversity within a food system increases the chance of finding a plant variety best suited to a changing environment.

A global food system means longer distance traveled from production to consumption. As the price of gasoline increases, so does the cost of transporting food. The external cost of burning fossil fuels when transporting food is one argument for the support of a more sustainable option. Books and articles commonly refer this transportation externality as the “real cost of carbon”(Seyfang, 2006; Dokoupi, 2008). This argument for shortening supply chains will significantly limit fossil fuel inputs (Werber and Mathews, 2008). The average distance traveled for a super market product is anywhere from 1,500 to 3,500 miles depending on product and season (Halweil, 2002; Blake et al., 2009). However, the validity of this claim has been refuted by some (Smith et al., 2005; Weber & Matthews, 2008) who say, limiting food miles does not limit carbon costs in a significant way. The majority of carbon from agriculture is emitted in
the production phase (83%) and limiting food miles only saves an estimated 4-5% of the total carbon within a product (Weber and Matthews, 2008). These measurements do not account for the total external costs of conventional farming, which rely on more petroleum based fertilizers and more tractors that use fossil fuels. Different types of transportation methods also can reduce the estimated 5% of carbon used during transport; for example food shipped by sea freight produces much less carbon dioxide than truck transportation. Large bulk shipments coming from farther distances also have the potential to limit carbon, because more bulk means fewer small trips being made (Dokoupi, 2008; Englehaupt, 2008). The data differ based on context of place, food item, proximity, methods of agriculture practiced, and mode of transportation. Although LFM do reduce transportation miles, the amount has not been found to be “significant” enough to dramatically lower a product’s carbon footprint (Hinrichs, 2003; Yakovleva, 2007).

A strong LFM can improve economic vitality within a community (Transition Colorado, 2013; Pollan, 2006; Coit, 2008; Kloppenburg et al., 2000). Community members support each other by the purchasing and growing of local food (Coit, 2008). The price of local food is comparable to super markets (Pirog and McCann, 2009). People are also more willing to pay more for an item that is produced locally than one that is not (Blake et al., 2010).

One of the most advantageous relationships correlated to strengthening a LFM is rural development (Martinez et al., 2010). Communities that grow their own food create markets and stimulate revenue (Martinez et al., 2010). For this reason the USDA has created programs such as the Farm-to-School and Building Young Farmers to create more viable market options for local farmers. Federal funds are also allocated for the marketing of local food within states to promote economic vitality (Martinez et al., 2010; Coit, 2008; Dupuis & Goodman, 2005). However in a LFM, lack of universal access and economic viability is a concern. The advent of
community gardens, land use change toward urban city centers and provision for SNAP vouchers at farmer’s markets have helped to mitigate this problem (Martinez et al., 2010). A Colorado CSA share of a week’s vegetables for 1-2 people is roughly eighteen dollars per week, which is lower than the average cost of that same organic produce bought in stores (Local Harvest, 2013). Some LF is price competitive, and sometimes even cheaper, but it should be considered in conjunction with location and additional factors such as seasonality.

Convenience, accessibility and affordability are all factors that make sustainable consumption more difficult (Coit, 2008). Consumers who place high value in responsible consumption and are involved with sustainability have strong intention to buy locally. Those less likely to buy local, perceive that there is low availability of locally produced products (Verner and Verbeke, 2006). Bridging the consumer intention buying gap is where proactive local and state policy is vital. Local farmers cannot rely solely on federal programs and policies to create a necessary direct market (Hamilton, 2002; Martinez et al., 2010, Starr et al., 2003).

Moreover, “placelessness” is one description given to the current industrial food system. Social capital is limiting in a conventional agriculture system whereas it is abundant in a LFM (Delind, 2006). LFM’s create a mutually beneficial relationship between farmers and consume and high social capital influx creates positive results (Glowacki-Dudka et al., 2012).

A positive impact of LF is documented through research pertaining to gardening. Community gardens and school gardens promote lifelong positive environmental attitudes, and support healthy eating habits (Meyer-Smith et al., 2007; Popkin and Gordon-Larsen et al., 2004; Renee Johnson et al. 2012). Moreover, LF is not just about consumption, these relationships also build trust. Desire for known connection to food sources is greatly valued today because we consume food that cannot always be traced to its source, and lack of food safety has resulted in
illness and even death in children as with Kevin Kowalcyk (Doeg, 2005). Kevin was two when he ate a hamburger contaminated with E.Coli; he died twelve days later. The burger source could not be traced and to this day there is no conclusive evidence as to where the meat came from (Center for Food Borne Illness, 2013). Though food safety has increased, tracking food products from source to table is still extremely difficult (Adrie Buelens et al., 2005). LF offers a relationship, a face, and increased food safety (Arronson, 2012). This complete lack of trust and connection within a conventional agriculture system has fueled more LFM efforts (Follet, 2009; Hamilton, 2002; Hesterman, 2011). Through consumption of LF, people make significant connections to nature and place (Hamilton, 2002; Seyfang, 2006; Delind, 2006; Johnson et al., 2012).

LIMITATIONS OF LOCAL FOOD

LFMs have known benefits, but also barriers that vary in communities and locations. Some barriers that are consistently reported are; marketing failures, access, and geographic restrictions (Follet, 2009). Direct marketing is the most successful avenue for farmers. The growth of farmer’s markets has increased every year since 1994, with over a nine percent increase in 2009 (Martinez et al., 2010). Though there has been a rise in direct to consumer marketing the relationship between local producers and intermediaries is limited, or nonexistent (Starr et al., 2003; Follet, 2009). Marketing is a cost that many farmers cannot afford (Martinez et al., 2010). Websites like LocalHarvest.org attempt to bridge this gap, but the problem is still widespread (Kimbara and Crispin, 2002; Starr et. al, 2003). In addition, the relationships between restaurants and farmers have diminished with the disappearance of small family restaurants (Follet, 2009). Large chain restaurants source food from large industrial farms (Pollan, 2006; Martinez et al., 2010; Thilmay & Watson, 2004). The relationship between local
farmers and mid-level industry needs more expansion and support (Coit 2008; Feenestra 1997; Follet 2009; Hamilton, 2002).

Perception about the lack of equitable access to LF is an argument against the localization of food. The majority of those who participate in the LFM are primarily white, educated, affluent citizens (Dupuis and Goodman, 2002; Hesterman, 2012; Hinrichs, 2003; Rogers, 2010). Conversely those most affected by access to food are typically low income and racial minorities, who often do not have access to nutritional food within their communities (Figure 2) (Carter, 2008; Hesterman, 2010; Horrigan et al. 2002). While this is true in some contexts, there are some exceptions. Inner city Detroit is one example where citizens have benefited greatly from the LFM by reclaiming unused land and making it productive (Rich, 2012). Additionally the availability of redeemable SNAP (Supplemental Nutrition Assistance Program) coupons at local farmer’s markets has helped those who qualify to access local food. (Martinez et al. 2010). Food deserts in Colorado have been re–imagined as productive epicenters of development both economically and in the community; the Grow Haus in Denver is one Front Range example (Grow Haus, 2013). LF is also typically grown in an organic manner, but because of the cost of formal certifications it does not always label itself as such (Hesterman, 2012). The need for food security in low income areas is great and there is support for government programs like Food Corps, which focuses on producing healthy food, locally (Martinez et al. 2010).

A counterpoint to the inaccessibility of LF is that it is more viable for communities to grow their own food in a food desert than to lobby a supermarket chain to open a store (Cockrall-King, 2012). This approach has seen great success in areas such as Milwaukee, Wisconsin and Commerce City, Colorado (Cockrall-King, 2012; Grow Haus, 2013).
Comparative advantage is one of the most fundamental laws of economics, and a component in LFM arguments. Places that have the most advantageous conditions for agriculture should grow food. Areas that have longer growing seasons should produce more food. This is valid; however, eating locally emphasizes eating what is grown close to where one lives, and adapting a palate accordingly. Some argue that LFMs are inefficient and that industrial agriculture is more efficient. Widespread lack of access to super markets in our current system does not support this argument (Weis, 2010; Figure 5). Much of the food produced in the United States agricultural system is grown via irrigated land and some of the best land has been developed (Weis, 2010)

French-Canadian scholars Pierre Desrochers and his wife Hiroko Shimisu argue against the concept of local food. They state that our food system compares to our technological and societal growth by mechanizing agriculture; we have made it more efficient (Desrochers and Shimisu, 2012). In today’s world few people are farmers and few want to go back to that life;
they ask “if it was so good, then why did we change it?” This contrasts with the demographics of the LFM in the U.S. today. Though the average age of a farmer in America is 57, there is a growing social movement of young farmers. Called “Greenhorns”, there are an increasing number of college-educated young people who are turning to agriculture as a livelihood (Greenhorns, 2013; Kitroeff, 2012). Federal programs like Future Farmers of America (FFA) and Building Farmers (BF) are promoting this change. Efficiency of a LFM is attainable with less detrimental costs, but again, depends on what an area is predisposed to grow.

*Additional components that reflect on the Local Food System*

There is substantive literature on the LFM, but it is not always consistent because of the contextual differences of place (De Lind, 2006). Every location has different challenges and different approaches to LF practices. Geography, demography, arable land, available resources, affluence, and climate all play a role in what is available for local food consumption.

The success of the LFM depends greatly on geography. Whether in San Mateo County California or inner-city Detroit, LFMs need consumers who can not only access local food, but can also afford it (Wooten, 2010). While local food prices can be comparable to super market prices; supplies do not always meet demand, and demand can help or hinder the market price dramatically (Godfray et al., 2010; Pirog and McCann 2009). For instance, consumers may desire food that is not regionally supplied. Eating seasonally is a lifestyle habit that can be learned, but is not often practiced in a global food system (Richardson 2011; Benson, 2010). City ordinances against front-yard farms, livestock within city limits and housing associations also limit the ability for individuals to raise their own food (Pollan, 2006; Bartling, 2012). College institutions have a high demand for local food, but also present barriers for supporting the movement; with lack of on-campus gardens being one of these challenges (Roosevelt, 2005).
Politics of “Localism”

“Local” can provoke nativism and reactionary politics (Hinrichs, 2003). This response correlates to the alternative ethic of those who practice and support alternative food networks. The “alternative ethic” refers to an ideology that is largely a product of 1960s’ counter-culture associated with anti-government and anti-globalization as well as self-sufficiency and care for the environment (Allen et al. 2003; Hinrichs, 2000; 2003; Winter, 2003). However, reactionary politics take many different forms and food re-localization often gives rise to a wide range of politics (Dupuis and Goodman, 2005). A common political tension in local food is between farmers and their different approaches to growing food (Hinrichs, 2003; Mardsen et al. 1999). This may present as traditional and conventional agriculture versus alternative farming methods (Allen et al., 2003; Campbell, 2004; Dupuis and Goodman, 2005; Guntham, 2004).

In LFM politics there is often a small group of narrow minded elite, with ideological approaches to food that create “unreflexive” politics (Duupis and Goodman, 2005). Inability to compromise or change food ideology is characteristic of unreflexive politics and creates a defensive culture and segregated interactions (Duupis and Goodman, 2005; Hinrichs, 2003). Agro-food studies have cautioned that aligning with unreflexive political elites within a local food system can isolate actors from achieving full participation within a food system (Delind, 2002; Dupuis and Goodman, 2005; Hendricksen and Hefferman, 2002). Localism efforts should be aware of the potential for reflexive politics and generate ways to achieve a democratic outcome. These politics are important in the success or failure of a LFM and can be mitigated with increasing stakeholder inclusion (Campbell, 2004; Hinrichs, 2003).

Race also presents a trend in LFM politics because of the “pervasive of whiteness” within LFM (Dupis and Goodman, 2005; Gutham, 2008). Eating the “right way” and support for the
LFM correlates to the “politics of perfection;” which describes the US reform movements of the 1960s that are deeply rooted in race—the US food reform movement and LFM are among these groups (Dupuis and Goodman, 2005).

Scholars have cautioned that food localism efforts can often reinforce political tensions already present; however, if localism can be approached in a way that does not evoke defensive or unreflexive politics. This approach is based on diversity-reception or cosmopolitan localism that protects the richness of a place, and recognizes that the world we live in is versatile (Hinrichs 2000; Sachs 1999). This blend is often seen at Farmer’s Markets. They are always local staples, but also items not historically grown in an area. Ways to promote diversity-reception of local food and prevent against unreflexive politics is to increase communication between agriculture stakeholders (Campbell, 2004; DuPuis and Goodman, 2005; Hinrichs, 2003).
METHODOLOGY

To understand the differences among the actors and institutions within the local food movement, I chose to use case studies. A case provides information from a number of sources over a period of time, permitting for a more holistic study of complex social networks. Case study analysis is grounded in observations and concepts about social action and structure in its natural setting which is ideal for a LFM study (Feagin et al., 1991).

The research for this study is a combination of both primary and secondary sources. The secondary research for this study is a history and introduction to the LFM within Colorado and Boulder County. This background provides the necessary foundation to understand current LFM initiatives and participants within the case study. It presents the many LFM initiatives present in Boulder County such as community gardens, CSA programs, and farmer’s markets. Figures added throughout the text are presented to give readers additional context and understanding.

Primary research was collected through semi-structured interviews lasting approximately thirty minutes. Questions were open ended, to promote a narrative response and limit researcher bias. Informants were selected based on their relationship to LFM in Boulder County. Experience, knowledge and connection to the Boulder County LFM were there considerations for selecting informants. Questions were focused on understanding the role each organization within Boulder County’s LFM, barriers often encountered and how to successfully address them. The interviews then were analyzed for themes categorizing data by the types of barriers encountered (Table 2). I grouped barriers into economic, social, and structural. This enabled me to categorize organization specific barriers that had overarching trends.

Economic barriers were things like had to do is with money, consumer demand and support. Social barriers related to community, people’s support or knowledge of local food and
relationships between many local food organizations and businesses. Structural barriers related to place, limitations of growing season, government certification of food or crowdedness at the farmer’s market. I created these categorized based on trends I saw within the secondary literature as well as my own experience within the Boulder County LFM.

Table 2. Example of reference table used for formatting interviews

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>STRUCTURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of local food</td>
<td>Community desire for food not produced locally</td>
<td>Limited season for growing</td>
</tr>
<tr>
<td>Not enough capital to expand</td>
<td>Marketing for programs</td>
<td>USDA certification</td>
</tr>
<tr>
<td>Creating a profitable economic model for farmers</td>
<td>Definitions of local food</td>
<td>Crowded farmers’ markets</td>
</tr>
</tbody>
</table>

Figure 3. Concept Map of Relationships within the Boulder County LFM
THE CASE FOR COLORADO LOCAL FOOD

Colorado is able to produce its own food due to ample sunlight, growing temperatures, and land available for grain production; in theory, state sufficiency is possible (Starr et al., 2003; Transition, 2013). In actuality, Colorado imports ninety-seven percent of its food (Transition Colorado, 2013). Like many areas with a growing LFM there are barriers to its implementation.

Some of the known barriers to local food consumption in Colorado are marketing challenges and difficulty executing federal programs on a local level. Marketing between intermediaries has been one of the core infrastructural challenges in Larimer County (Starr et al., 2003). Limited communication between stakeholders, a system of corporate policies that do not have accommodations for LF production, and limited supplies produced by small production are additional factors (Starr et al. 2003). The nationwide Farm to School food program, set with a purpose of creating a market for farmers as well as better nutrition for school children, has also had difficulties in northern Colorado. In a study based on surveyed food service professionals, there were not adequate kitchen services to prepare unprocessed food items and limited knowledge of techniques to prepare farm fresh items (Nurse et al. 2012). Therefore this program was not successful in connecting LF producers to school systems. The Front Range has the most viable farmland with water access in Colorado, but development is increasing and this land is disappearing (Card, 2013).

BACKGROUND OF BOULDER COUNTY

Boulder County (BC) originally was settled as a gateway to the Rocky Mountain mining operations and was populated with settlers via the Homestead Act or 1862 (Boulder County, 2013). However, the gold is long gone, and what remains is a highly educated populous amidst a background of jagged Flatirons and high plains. BC consists of four cities—Boulder, Longmont,
Lafayette Louisville; and eleven unincorporated towns and communities including Lyons, Nederland and Niwot (Boulder County, 2013).

Boulder County is a known mecca for the health conscious, outdoor enthusiast and politically liberal individuals (Frommers, 2012; Williams, 2008). This is partly due to the area’s employers from educational and scientific institutions including The University of Colorado Boulder, Naropa University, National Center for Atmospheric Research, National Ocean and Atmospheric Administration, and the National Institute of Standards and Technology. There is also a technology bubble with firms such as IBM, Segate, Tendril and Xilinx. The City of Boulder is the largest city and the county seat. Now home to roughly 300,000 residents; BC is unified with an environmental and sustainability centered mission outlined both in its mission statement and programs that it supports. County and city policies and plans call for the preservation of open space, and a variety of commitments to sustainability (City of Boulder, 2013).

One example of progressive policy in relation to conservation is Boulder County’s Open Space. The City of Boulder became the first city in the nation to use public funds for the acquisition and conservation of open space, and the county has continued this tradition (Boulder County, 2013; Hickcox, 2007). Currently, BC manages 98,000 acres of open space, 35% of that land is designated for agricultural purposes and the remaining is used for recreation (Figure 3.) One issue that has been identified with open space in the county is that few minorities or low income individuals use BC open space, despite paying taxes for it (Hickcox, 2007).

**Figure 4. Heil Valley Ranch hiking Mountain biking trail (Boulder County, 2013)**
Another example of the county’s support for sustainability is its commitment to growing a LFM. The county sees room for economic growth through agriculture, with Boulder county residents spending $197.9 million on produce and only $31.8 million going to local growers (Table 3). The county also has an Eat Local Resource Guide (Figure 4). It contains Front Range agriculture news as well as global news and resources to find local products one would want to consume. It is most easily accessible online (eatlocalguide.com/bouldercounty/). This guide creates an avenue for farmers to reach individual consumers and local restaurants. It is comprehensive and covers; dairy products, grains, meats, eggs, and produce (Figure 5).

**Figure 5. Eat Local Guide Colorado** (Boulder County, 2013)
**Transition Colorado:**

*Transition Colorado* is an organization leading the local food shift in BC and the state. Transition Colorado received a $10 million anonymous donation to aid its creation of a “local food shed.” Its goals are to see LF production increase to 20% by 2020 (Bosworth, 2011). Based on the Transition Movement in the United Kingdom, Transition Colorado is focused on a campaign to get businesses to consume 10% of their food from locally sourced products.

Possessing roughly 2% of the state’s farmland with an average farm size 10 to 49 acres, Boulder County has open space for agriculture and land to grow more food (Meter, 2009). Their website moniker is “Think Like a Foodshed.” Throughout the year Transition funds events with local food entrepreneurs and economists, and provides a directory of local food area offerings (Local Food Shift, 2013).

**Urban Food**

Boulder County is categorized as an urban area, and thus all the food produced within Boulder County is considered urban (Morril et al., 1999). Boulder County urban food takes a variety of forms. Front yard farms, truck-farms, and community gardens are all present. One example in
Boulder County, is Community Roots; a neighborhood initiative in the Martin Acres neighborhood in the City of Boulder that has created a food production model using front yard farms. It recruits homeowners to convert lawns to gardens for food production (Lawrence, 2011). Another example of urban gardening is guerilla gardens where vacant lots or side streets that have been converted to growing food, without explicit permission (Sandlin et al., 2010). These are present throughout cities in Boulder County. The Johnny Copp Truck Farm also roams the roads in Boulder County to promote more consciousness about food (Figure 6). However, the majority of urban food grown by individuals and organizations in Boulder County is within community gardens.

**Figure 6. Jonny's Truck Farm (Jonny Copp Foundation, 2013)**
Community gardens are public gardens in ownership, use and control; they offer green-space in urban areas as well as means for affordable food production (Richardson, 2009). Community gardens offer a means of connection to nature and food, and can play a role in violence reduction within inner city areas, encourage physical activity, and help strengthen community relationships (Mayer Smith et al., 2008). Boulder County has numerous community gardens both within the city and surrounding areas. The community garden at the Boulder County Fairgrounds has been around for 30 years. There are 7 identified locations for community gardens with plots ranging from $30- $80 in cost for the growing season. The average size is roughly 600 square feet and there is space available throughout Boulder County. Local organizations provide maps of these resources and help coordinate wait lists (Figure 7). Community gardens are dispersed throughout the county, near or in city centers (Figure 7).
Figure 8. Map of Community Gardens within Boulder County (Growing Gardens, 2013)
The Federal Farm-to-School Program was introduced to address the lack of market options for small farmers as well as the poor nutrition in public schools (Martinez et al. 2010). Schools that receive federal funding for this program are evaluated by the presence of students that receive free and reduced price lunch. Despite the lack of federal funding for farm to school programs there is a movement for school gardens, both as a function for food production, and as an educational tool. Income level is too high to qualify for significant Federal aid for these programs in Boulder County (Brown, 2013; Farm to School, 2013). In 2009, Boulder Valley School District began a major change in food policy phasing out highly processed food for healthier options (Farm to School, 2013). The Growe Foundation, founded in 2005, is a nonprofit operating in BC and the surrounding areas to provide gardens and local food education in school districts. Growe’s food production and harvest is usually limited to short season growing plants, and it has had a positive community impact with interest growing in surrounding counties. Farm-to-school programs are still new both in Boulder County and nationwide; however, the benefits of this type of educational programming is supported by research, and demand for these programs is growing. (Klemmer, Waliczek, & Zajicek, 2005; Johnson et al., 2009; Martinez et al., 2010)

Farm-to-table restaurants are also an emerging trend in the LFM in Boulder County and nationally; they seek to connect food to the source (Martinez et al., 2010; Halweil, 2002; Allen, 2010). There are over 15 restaurants within Boulder County that source the majority of their food from local sources. The Kitchen and Black Cat are both farm-to-table restaurants that have their own farm. Farm-to-table restaurants are a niche market that cater to those who have money and are willing to pay more for a more sustainably produced meal (Mills et al., 2011). A vegetarian entree is around 19 dollars, and a meat entree can cost upwards of 30 dollars. This is
substantially more expensive for those who average a meal out for 2 people at around 25 dollars (USDA, 2013).

For many residents of Boulder County, the most common means of participation with the local food movement is purchasing goods from the local farmers’ markets. There are currently four farmer’s markets within Boulder County. Saturday markets take place in Boulder, Longmont, Louisville and Lafayette (Eat Local Guide, 2013). Farmers’ markets offer one of the most universally available opportunities to interact with the local food movement for most residents. Farmer’s markets represent direct markets for local food and the only measurable data to indicate the rise in LF consumption by individuals or small businesses (Martinez et al., 2010). Other types of direct marketing are programs such as, farm stands and U-pick operations (Martinez et al., 2012). However, the majority of sales of local food come from Farmer’s Markets. Farmer’s Markets have also increased by 120% from 1997-2007, a revenue increase to 660 million (Martinez et al., 2010). Most established markets have hired individuals that oversee the planning and organization of the market, funding for these services coming from vendor fees (Martinez et al., 2010). Nation-wide, the growth of farmer’s markets expanded from 1,755 in 1994, to 5,274 in 2009 (Martinez et al., 2010).

*Community Supported Agriculture (CSA)*

The concept of CSAs came to America from similar approaches used in both Japan and Switzerland (Farnsworth et al., 1996). People buy a share of the farm’s product; usually produce in the beginning of the growing season. That money is then used by the farmer for cultivation and guarantees that a farmer will not be the only one who takes the risk of crop failure. This shareholder model is becoming more common because it eliminates food transportation to markets, is a reliable source of income, and creates a relationship between farmer and consumer
for a full season (Figure 5) (Martinez et al., 2010). There are CSA fairs held around the state that showcase the price and options for interested buyers, these occurred in the second week of March for the 2013 growing season. The exact number of CSAs shares is not known for BC, but is estimated to be over 500 (Mcfadden and Sullins, 2012).

Figure 9. CSA Growth in the United States (Local Harvest, 2013)

Boulder County Local Food Policy Council (BCLFPC)

Boulder County also has a Local Food Policy Council. Active since 2007, it seeks to bring different stakeholders together to influence policy in ways that benefit the whole LF community (Figure 10). Among its goals are: i) increasing local food production; ii) improving the economic vitality and access to agriculture in Boulder County; iii) regenerating and conserving natural resources in Boulder County; and iv) improving the overall health of the community (Figure 10). Members include Boulder County Parks and Open Space staff,
producers, and grocers with vested interests in buying local because of customer demands.

BCLFPC meets monthly.

![Function of Local Food Policy Council (Lane County, 2013)](image)

**Figure 10. Function of Local Food Policy Council (Lane County, 2013)**

*Current LFM Issues*

Boulder County became a hotbed for food political debate in the case of growing GMO crops on public lands. In 2008, several farmers wanted to grow ‘Round-up ready” sugar beets on Boulder County Open Space Land. The public was against the use of a GMO crop on county lands because much of the long term effects and pollination spreads are unknown (Snider, 2013). After debates and city hearings, Boulder County commissioners voted to allow “some” GMO sugar beets to be grown on open space land. This event is still referenced in media and at LFM events as a failure on BCs part to protect public interests (Bryne and Fromhenz, 2003; Sinder, 2011)

Climate change and the devastating fires of 2012 have affected the growing season of 2013. Last summer 62 of Colorado’s 64 counties were declared crop disasters by the governor (Bunch, 2013). “Extreme drought” measures for all of Colorado have already been established (Card, 2013). These climatic events have directly impacted Boulder County farmers. Hygiene
cattle rancher Bill Berg already struggled last year with the price of hay increasing from roughly four dollars a bale to over ten dollars, if he could even find it. These conditions have limited the herd size ranchers can support and made it extremely difficult to make a profit (Wallace, 2013). Grant Family Farms, a large-scale organic farm active since 1953, which provided food for some Boulder County businesses and restaurants declared bankruptcy in January of this year (Migoya, 2013).

On a more uplifting note, in the past few months there have been several developments that could change the long-term culture for the Boulder County LFM. One of these is an amendment to the current zoning policies Boulder County’s “suburban residential” laws to allow for backyard bee keeping and chickens (Fryar, 2013). These practices are currently prohibited on land zoned for residential use only. This could open up more than 2,000 parcels of land to people who want to pursue personal food production (Fryar, 2013). Residential land production practices like backyard bee keeping and front yard farms have increased in popularity and access nationwide (Bartling, 2012; Pollan, 2006). Amendments to agriculture code for the county also includes the freedom for farmers to conduct farm-to-table events, such as wedding receptions or other events where “gathering and eating” occur. This would allow Boulder County farmers a direct outlet to showcase their crops, meet customers, diversify their income and become more engaged with the local community (Fryar, 2012).

**CASE STUDIES**

To assess the barriers that different actors and institutions face within the local food movement, this study examined participants from a variety of LFM backgrounds to better understand of the movement as a whole. Each case is presented individually, and then all are analyzed for trends and results for this research.
Table 4. Background of Boulder County LFM in study

<table>
<thead>
<tr>
<th>LFM Case Study Participants and Relation to LFS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer/Farmer</td>
<td>63rd St. Farm, Jacob Springs Meat CSA</td>
</tr>
<tr>
<td>Farm-to-table Restaurant</td>
<td>Café Aion</td>
</tr>
<tr>
<td>Local Food Company</td>
<td>MM Local</td>
</tr>
<tr>
<td>Non-Profit/Education</td>
<td>Growing Gardens, Growe Foundation</td>
</tr>
<tr>
<td>Co-op/sustainable food buyer</td>
<td>The Second Kitchen</td>
</tr>
<tr>
<td>Local Food Policy Council</td>
<td>Adrian Card</td>
</tr>
</tbody>
</table>

EDUCATION

Growing Gardens

Growing Gardens (GG) is a nonprofit urban agriculture project based in Boulder County since 1999. Its mission is “to cultivate community through urban agriculture” (Growing Gardens, 2013). It received this land from the Long Family, a third generation Boulder County farming family. The land consists of an eleven acre plot to be used for education and agriculture. GG’s land is the only remaining land zoned for agriculture left in the City of Boulder. GG fulfills its mission and vision to encourage a deep connection with land and one another through four unique programs located at the Hawthorne Garden. The GG interview was conducted with Annie Sweeny, a program director with Growing Gardens. She emphasized that education is GG’s most important role within the community.

This educational role is demonstrated through several programs that take place at the Hawthorne Gardens. The first program is the Children’s Peace Garden. It is tailored to fit the needs of children ages 4-10 and introduces the importance of gardening, plant biodiversity, and nutrition. The second program is ¡Cultiva! For young adults ages 12-19. ¡Cultiva! youths gain experiences in production and cultivation of agriculture practices while learning accountability for future employment such as showing up on time, and being responsible. GG also maintains
community gardens for all residents and horticultural therapy garden for seniors and disabled individuals, making access to LF experiences universal.

Ms. Sweeny defined LF as food “produced within the community and should be organic and GMO free.” Despite being established for over a decade, finding consistent funding is a yearly challenge. Limited space is also a barrier in the growth of their programs and day to day operations. The year long wait list for growing space on GG’s community garden plot is a testament to this issue. Structural barriers has also lead GGs to an all CSA model, forgoing the farmers’ market altogether. Ms. Sweeny states that the farmer’s market is “so crowed our (GG) kids get lost. I don’t even go to support LF and I’m even a member of the LFM community.”

Despite this structural challenge Ms. Sweeny still feels that Boulder County has a strong food movement. However, she feels this movement can be strengthen with education, and the introduction of a “seasonal consciousness.” Education can also change people perceptions that gardening is “too hard.” Through changing to a CSA model, GG has been able to address the structural barriers they have had with the Farmer’s Market. One consistent theme in Ms. Sweeny’s interview was that good food should be accessible in the community to those who need it most. For GG their excess produce is redistributed to those in need by Boulder Food Rescue; a food redistribution nonprofit organization. GG also spreads their message and opportunities throughout the community and attempts to target those most in need.

Figure 11. Children at Growing Garden's CSA pickup (Growing Gardens, 2013)
Table 5. Growing Gardens LFM Barriers

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>STRUCTURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding consistent funding</td>
<td>Increasing the community’s knowledge/awareness on what Growing Gardens offers in terms of education and LF</td>
<td>Farmer’s Market overcrowded and not a good option for selling produce to the community</td>
</tr>
<tr>
<td>Marketing, finding the best ways to reach the community about their projects and purchasing shares within their CSAs</td>
<td>Overcoming people’s perceptions that gardening is “difficult”</td>
<td>Lack of land available for community gardens and growing space</td>
</tr>
</tbody>
</table>

Table 6. Growing Gardens Perceptions of Boulder County LFM Barriers

| 1. Financial availability | “All of them” |
| 2. Lack of knowledge and education of growing food practice |
| 3. Structural limitations (climate, land/water availability) |
| 4. LF compliance/co-existence with government standards and policies |
| 5. Logistics of small scale LF producers and finding viable markets (storage of LF, transportation etc..) |
| 6. Consumer preference to eat non local |

Growe Foundation

The Growe Foundation is another Boulder County based nonprofit that uses school gardens to connect children to their food, healthy eating and caring about the environment
(Brown, 2013). Founded in 2005 by Bryce Brown, this garden-to-table model within school districts is attempting to be a “catalyst for reconnecting children to their nutrition and food” (Growe Foundation, 2013). Growe promotes learning your “E’s”: education, eating and environment. Growe’s representatives see the foundation as “facilitating a food culture change.” Mr. Brown was interviewed for this study and sees Growe’s garden initiatives in schools as addressing one of the biggest barriers seen within the Boulder County LFM: Lack of awareness and education about our food system. Bryce says that initiatives such as Jamie Oliver’s Food Revolution, and Michelle Obama’s efforts to reform school nutritional policy, have brought more national attention to the very apparent problems of childhood obesity, but there is still not enough education, as evidenced by growing rates of childhood obesity. Grow perceives this trend in obesity as an educational barriers and it is what they are trying to address (Popkin and Gordon-Larsen, 2004).

Brown defines local food as food grown “as close to the source as possible.” He states one of the top concerns the LFM should address is the distance food travels (food miles). Local Food also should reflect seasonality in Colorado. Local Food is food that which reflects the “co-concentric circle of seasonality.” For Brown, local food and his mission is affected by federal policy; especially in relation to funds that are allocated for school lunch programs, currently about $1.25 per meal. This creates an unfair “playing field” and makes it difficult to implement programs with nutritious food because it costs more.

Despite having community support and a positive reputation within the community funding is a constant challenge for Growe’s operation. Additional school districts want to add Growe’s program to their curriculum, but there is not enough funding to expand at this point. Growe does not receive federal funding from the federal Farm-to-School programs because the
schools they work with do not qualify for Federal aid. Brown states that grants are not the most consistent source of funding for their operation. Growe receives most of its funding from the community and will also be a recipient of this year’s *Microbreweries for the Environment* fundraiser in Boulder.

Growe has cultivated relationships within the school district and community, but there is also a substantial sector of the community that does not know about the Growe Foundation and its mission. Brown states the success of Growe is founded on the idea that it “takes a village to raise a child” and we (Boulder County Community) “need more community involvement.” This barrier correlates to another one of Growe’s ongoing challenges, which is, marketing. Finding the best, most cost effective way of getting their mission and program “out there,” is a struggle. They have a website, are represented under the Boulder Valley School Food Program, and have been featured in local press, but this hasn’t been enough to increase reach and funding.

As for BC having a “strong local food movement,” Brown feels that it is “getting there.” There is a lot of local food access with farmer’s market, and even local companies like Justin’s Nut Butter; however, there is still a lack of education and knowledge about where the majority of our food comes from and agriculture policy. He thinks that one policy initiative that would benefit Growe’s mission was if the city and county could provide support for the continuation of this program. This would help to establish a local food and nutrition curriculum long term.

**Table 7. Growe Foundation's LFM Barriers**

<table>
<thead>
<tr>
<th><strong>ECONOMIC</strong></th>
<th><strong>SOCIAL</strong></th>
<th><strong>STRUCTURAL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding for expansion of program</td>
<td>Increasing community knowledge about Growe</td>
<td>Land available on school site for garden</td>
</tr>
<tr>
<td></td>
<td>Changing the “consciousness” of kids to understand where their food is coming from</td>
<td>Academic School year- not representative of a growing season in Colorado</td>
</tr>
<tr>
<td></td>
<td>Financial availability</td>
<td>Yes,</td>
</tr>
<tr>
<td>---</td>
<td>------------------------</td>
<td>------</td>
</tr>
<tr>
<td>2.</td>
<td>Lack of knowledge and education of growing food practice</td>
<td>“absolutely” … purpose of Growe’s mission</td>
</tr>
<tr>
<td>3.</td>
<td>Structural limitations (climate, land/water availability)</td>
<td>Yes, seen with seasonality in their own programs and for Colorado as well</td>
</tr>
<tr>
<td>4.</td>
<td>LF compliance/co-existence with government standards and policies</td>
<td>Yes</td>
</tr>
<tr>
<td>5.</td>
<td>Logistics of small scale LF producers and finding viable markets (storage of LF, transportation etc…)</td>
<td>Yes</td>
</tr>
<tr>
<td>6.</td>
<td>Consumer preference to eat non local</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Table 8. Growe Foundation's Perceptions on Boulder County LFM Barriers**

**Boulder County Agriculture Extension – Adrian Card**

Adrian Card is the head of the Colorado State University (CSU) Agriculture Extension to Boulder County and provides information on soil sciences, water rights, and drought information. He also serves as a liaison for farmers’ markets, and provides knowledge on federal and national policies. Card states that in his nine years at this position, it has evolved to an intermediary communication source between the different sectors of the Boulder County agriculture industry, the county, businesses and others who have shared interest in agriculture issues. For Card, LF is as “defined as by the USDA—Food produced within 400 miles of the source.” He says that two things that are important to a functional local food system are providing information and educational resources as well as building trust.

This institutional resource is pertinent because Card has the ability to influence policy related to the LFM. Card states that his position had a lot of political stigmatisms. Long-time traditional farmers in the area saw him as trying to influence Boulder County to start producing only organic produce. Card describes this as “being in the same game, but on different teams.” This misconception has changed in years following; however, the politics around LF represent
the different defensive views that exist between each of these food producers. He also states that local media outlets have misquoted and misrepresented his position, adding to this tension. One initiative that has helped address these barriers are harvest dinner functions where all the food producers in the county as well as creating more stakeholder involvement with the creation of policy bodies such as the BCLFPC.

Card emphasized the agricultural history of the county and the changes we are currently seeing. Boulder County is in the high plains where Ute and Arapahoe native Americans lived for generations eating a primarily meat-based diet. The traditional modern agriculture in this region is dry-land wheat, barley, beets and corn; ideally crops that possess a very high temperature a tolerance and low water inputs. In the last twenty years there has been a shift to producing more vegetable crops, many of which are temperature intolerant and require more water and therefore not well suited to a high plains environment. This general attitude toward the limitations of BC’s climate is directly linked to the lack of knowledge about seasonality and what LF is in BC. Collaboration among all food producers can also help with water availability. If a farmer on the land above and below irrigation call water at same time, they can get more than if each called separately. According to Card, the most difficult political issue is arbitrarily drawn county lines which contribute to county “sovereignty issues.” Broadening county boundaries to create a more regional food system it could help change the paradigm and shift ideology about what LF is. This could also make more sustainable LFs because much of BC wheat is low-protein and by including other neighboring counties better products could be produced.

Boulder County has commissioned several studies on the potential to increase community food security, but navigating the management and water rights has proven challenging. LF production can be increased, but not everything we eat can be produced here. BC has many
growing limitations and an increasing Front Range population which will compete with agriculture land availability. Card feels some views on agriculture within the county are unrealistic and not representative of what BC can really produce.

Card also says that much of Boulder County’s programs to support young farmers such as BFRID (Beginning Farmers and Ranchers in Development) would not be possible without federal funding. Boulder County farmers also have access to resources like an agriculture extension agency made possible through federal funding. Worker wage protection in Boulder County has been a very important benefit the federal policies have enforced. The Federal government did prosecute a farm in BC for not paying workers a fair wage (Card, 2013). Protections like these would not have been possible without Federal policy. Card sees the common barriers associated with LFM present in Boulder County. However, he perceives Federal policies as a positive thing, whereas the previous interview participants did not (Table 10).

Table 9. Boulder County Ag. Extension LFM Barriers

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>STRUCTURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A CSU paid employee, but has this situation where other members would like him to be more involved in county activity, but it is not representative of his employment goals ect..</td>
<td>Created a “public value nucleus” around the importance of agriculture, if it is seen as important support will grow.</td>
<td>The ever evolving agricultural system is difficult to keep up with this because it changes yearly and LF conditions are never the same from season–to-season.</td>
</tr>
<tr>
<td>Helping new farmer approach their food production as a business BRFDD</td>
<td>Traditional Ag vs. direct market Ag</td>
<td>Water limitations, and disappearing agriculture land due to development</td>
</tr>
</tbody>
</table>

Table 10. Boulder County Ag. Extension Perception of BC’s LFM Barriers

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Financial availability</td>
<td>Yes.</td>
</tr>
<tr>
<td>2. Lack of knowledge and education of growing food practice</td>
<td>Yes, mostly on the community’s approach to LFM</td>
</tr>
<tr>
<td></td>
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<td>---</td>
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</tr>
<tr>
<td>3. Structural limitations (climate, land/water availability)</td>
<td>Yes, seen with seasonality in their own programs and for Colorado as well</td>
</tr>
<tr>
<td>4. LF compliance/co-existence with government standards and policies</td>
<td>Yes, Federal policy has been a positive thing, without funding for programs like BFRID wouldn’t be possible</td>
</tr>
<tr>
<td>5. Logistics of small scale LF producers and finding viable markets (storage of LF, transportation)</td>
<td>Yes, farmers market structure issues and finding the best options for direct market outlets</td>
</tr>
<tr>
<td>6. Consumer preference to eat non local</td>
<td>Yes, only 2.5% of total food sales returns to the community</td>
</tr>
</tbody>
</table>

**PRODUCTION**

*63rd Street Farm*

In its 7th season, 63rd Street Farm is founded on the “intention of developing community and wellness through developing permaculture principals.” It offers 23 weeks of vegetables as well as eggs and meat for CSA members and has a retreat center on the property that serves as a space for education programs and workshops about agriculture, education, and wellness (Figure 12). The farm is owned and operated by farmer Amanda Scott and her husband. Prior to becoming a farmer, Scott spent 10 years in the restaurant industry and ran many successful businesses on the Front Range.

Scott believes LF should be grown in Colorado, provide a sense of community and reflect the character and seasons of a place. She gave an example of this: “February is kale season and root vegetables, not asparagus season.” She also does not think it has to be only produced in the narrow confines of the county; Scott states “I love Palisade peaches, and would consider those to be locally produced.” She emphasized that Coloradans should be eating preserved or canned fruits from summer harvests rather than eating off seasonal fruits that travel a long way to get here. 63rd Street Farm’s experience translates in similar perceptions of what BC experiences on a macro level (Table 11).
The interview took place during noon meal time in the retreat center at the farm. Escoffier Culinary School in Boulder works with Scott to educate its students on farm-to-table practices and where LF comes from. Students visiting the farm prepared squash and root vegetable soup, kale salad and meat raised on the farm. The environment was warm, friendly and displayed Scott’s emphasis on a LFM community relationship. She thinks it is important to connect people to where their food comes from and sees one of her primary roles in the LFM is as an educator. When students and community members attend workshops on the farm they learn and see how a chicken is butchered, what goes growing food and what is required to manage a run a farm.

Scott approaches farming like building a successful business that contributes to the community solely with a CSA program. She states that bringing her food to the farmer’s market weekly diminishes its profit substantially due to the cost of gas and amount of time needed. Being a self-described unconventional farmer, the farm uses mostly human labor: they only have one tractor and plant intensively without chemicals (Figure 13). They grow organically, but do not have a USDA organic certification, because she does not believe it represents true organic; requiring vegetables to be washed in a 10 percent bleach solution.

Computer technology is another challenge, but has been mitigated through doing trades for services. As Scott says “farmers are screwed when it comes to technology.” These types of technology needs include online CSA ordering, the ability to process credit card transactions, and keeping a farm website. Technology is time intensive, takes a specific skill yet hiring someone with these skills is expensive. Scott has found a trade with a web designer to update the 63rd St. Farm website this season, but these trades are not always available.
The politics of pricing is something that Scott has noticed and one of the reasons she has stayed with doing CSAs singularly and not participating in the Boulder farmer’s market. Politics of pricing refers to the increase and decrease in the cost of produce; depending on what a competitor is charging for their items. As of February the 63rd St. Farm CSA had almost sold out for the 2013 growing season, with many people seeking alternatives because of the closing of Grant Family Farm.

Scott says there that there is a community with a wide range of knowledge and interest in food, and that unlike other places this has been met with support. She references the January 2013 land use changes allowing for suburban agriculture. This was an initiative put together by BCLFPC that includes bee keeping, and options for backyard chickens. Scott feels Boulder County has an “anti-community competitive relationship” between other local food produces. Instances of competition that Scott describes are a “don’t look at what I am doing here” and “secrecy” attitude among LF producers. These attitudes create tensions and competition that is not “what a food community should be about.”

Figure 12. Retreat Center at 63rd St. Farm  Figure 13. Intensive Planting at 63rd St. Farm

Table 11. 63rd St. Farm’s LFM Barriers

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>STRUCTURAL</th>
</tr>
</thead>
</table>

41
<table>
<thead>
<tr>
<th>Getting technology resources, like web designer (but over come through trades)</th>
<th>“re-education” of Americans about consumption of food/the time it takes, connection</th>
<th>Government certifications for USDA is #1 barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Politics of pricing” her food</td>
<td>Competition among other farmers in the area</td>
<td>Market “oversaturation” of vegetables</td>
</tr>
<tr>
<td></td>
<td>Elitist approach to LF that exists in BC “upscale.”</td>
<td>Issues of growing food in the high plains, water scarcity, intense seasons</td>
</tr>
</tbody>
</table>

**Table 12. 63rd St. Farm’s Perception of LFM in Boulder County**

<table>
<thead>
<tr>
<th></th>
<th>Cost of LF</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Yes,</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Lack of knowledge and education of growing food practice</td>
<td>Yes, little specialized education (butchering)</td>
</tr>
<tr>
<td>3.</td>
<td>Structural limitations (climate, land/water availability)</td>
<td>Yes, lack of water, and high risks of growing in the high plains</td>
</tr>
<tr>
<td>4.</td>
<td>LF compliance/co-existence with government standards and policies</td>
<td>Yes, USDA certifications</td>
</tr>
<tr>
<td>5.</td>
<td>Logistics of small scale LF producers and finding viable markets (storage of LF, transportation)</td>
<td>Yes! It is not possible to be profitable if you spent all your time driving and delivering food. Produce must be picked up on time too, because 63rd does not have storage facilities.</td>
</tr>
<tr>
<td>6.</td>
<td>Consumer preference to eat non-local</td>
<td>Yes, Scott says she sees this “every day,” but not a bad thing, it is about balance.</td>
</tr>
</tbody>
</table>

*Jacob Springs Farm and First Season Meat CSA*

Jacob Springs Farm is a family farm run by Andre Housney. Located about ten miles from downtown on Arapahoe Avenue it grows vegetables, and is pioneering a Meat CSA this season. Jacob Springs Meat CSA Co-Founder Steven Kluck was interviewed for this study. He explains a meat CSA is where a person is buying a share of a variety of meat products. In the beginning of the season, meat shares will be smaller animals such as chicken or rabbit. An end of the season share will be composed of larger animals such as lamb, swine, and beef. Kluck mentioned that they have just been featured in a video by documentary film maker Graham Merriweather as a segment of “American Meat,” a film featuring sustainable meat production in the U.S. Jacob Springs sees agriculture as supporting community and creating a context for conversation, friendship, and relationship building.
Kluck defined LF differently than anyone thus far. He first said what LF is not: “nameless and faceless.” LF for Kluck is about “shaking hands with the producer who grows food for your family; whether that occurs at 20 miles or 200 miles.” He illustrated this concept by telling a story from his own experience. Raising organic chickens requires a lot of organic feed, which Jacob Springs can only source from Nebraska. Kluck and Housney call up their “farmer friend” with their needs. They have worked with him for several years, see him multiple times a season and have developed a relationship beyond producer-consumer. Kluck says LF for him is all about “openness,” and having the community “come see where their food comes from.”

Kluck and Housney are devout Christians, who believe agriculture should be “as God intended, and mimic the divine.” Their organic and ethical approach to agriculture is largely rooted in theology. This is their first season operating a meat CSA and there are several barriers they have encountered and others that will “mostly likely emerge.”

The first problem they have had is marketing: Figuring out how to spread the word and “convince” people that their product is of ‘high quality.” Housney has a Facebook page for the farm, has attended Transition Colorado CSA events and has an account on localharvest.org. At the time of their interview they had roughly 60% of the shares for the 2013 season, many to their church community members. Marketing aside, Kluck has said that Jacob Springs has struggled the most with USDA certification processing and laws around selling their meat. Because Boulder County does not have its own USDA certified meat processing facility, and they do not have their own they cannot sell their meat as certified organic. Since they are planning on butchering their own animals they cannot “sell meat.” The CSA structure allows them to “sell a share of an animal,” operating in what is described a legal “gray area.” The CSA structure allows
the freedom to operate without separate a processing facility and provides capital to start the operation.

Beyond the startup challenges the new meat CSA program is facing, Kluck feels that there are persistent barriers that hinder his and other small farmers. Those most emphasized by Kluck were national food policies: it is difficult to sell meat at a higher price because industrial methods and government subsidies have kept prices of meat artificially low. Current policy supports this ‘disconnection from food.” Kluck states that “from my perspective we feed animals food God didn’t design them to eat—it’s morally wrong.”

What is not a barrier for Jacob Springs is land and water availability. Housney is the current President of the Cottonwood irrigation ditch. They have “good” water rights and enough land. In addition to their 6 acre farm they have land leased or given to them by church members, totaling about 80 acres within Boulder County. In return, they will hold a cookout and end of the season farm dinner for members within their church community. A barrier more easily addressed for Kluck is the knowledge barrier. Though he and Housney have attended meat butchering clinics, there is always more to learn. One action Kluck would like to see Boulder County take would be to create more incentives for local farmers or work to bring a USDA certified processing facility to the county because they are not only ones have this problem. This facility would create opportunities for them to sell meat directly to restaurants.

Kluck perceives Boulder County as having barriers to a successful LFM. He feels that the county is unique in its high level of food knowledge, even if people “don’t usually eat seasonally.” He also sees the high plains climate and storage opportunities for LF to be a challenge for him and other farmers in his same position (Table 14).
Table 13. Jacob Spring Meat CSA LFM Barriers

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>STRUCTURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not enough capital flow for full time employees etc.</td>
<td>Marketing the CSA how to spread the word effectively</td>
<td>USDA processing facilitating Legality of CSA “owning a share of an animal not the meat”</td>
</tr>
<tr>
<td>Investing in coolers and other expensive equipment used in meat processing</td>
<td>Explaining the difference between LF and it benefits, in comparison to industrial ag</td>
<td>Finding and/or potentially building a meat processing facility</td>
</tr>
</tbody>
</table>

Table 14. Jacob Spring's Perceptions on Barriers Boulder County LFM

<table>
<thead>
<tr>
<th>1. Financial availability</th>
<th>Yes,</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Lack of knowledge and education of growing food practice</td>
<td>Somewhat.. this is an educated community, but the practices are always evolving</td>
</tr>
<tr>
<td>3. Structural limitations (climate, land/water availability)</td>
<td>Yes, seen with seasonality in their own programs and for Colorado as well</td>
</tr>
<tr>
<td>4. LF compliance/co-existence with government standards and policies</td>
<td>Yes, USDA certifications are very hard and prohibit JS to sell their meat</td>
</tr>
<tr>
<td>5. Logistics of small scale LF producers and finding viable markets (storage of LF, transportation ect..)</td>
<td>STORAGE is huge, due to the nature of the a meat CSA they must butcher the day of and invest in expensive coolers</td>
</tr>
<tr>
<td>6. Consumer preference to eat non local</td>
<td>Yes</td>
</tr>
</tbody>
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DISTRIBUTION

*The Second Kitchen Co-Op*

The second kitchen is a student and community run co-op that is in its second year of existence. It was started by students who wanted to eat more sustainably, support local farmers, and build community for an affordable price. It functions as a “food buying cooperative.” Open to all, it asks members to commit a onetime hundred dollar payment upfront or on a payment plan to serve as initial capital and ensure member commitment. Its mission is to purchase food locally, organically and sustainability in order to change our current food system. By purchasing food in bulk TSK eliminates packaging and is committed to creating awareness around how we
feed ourselves (The Second Kitchen, 2013). For TSK, local food is: “Food where a person knows it was grown, where has a relationship with the farmer. It is not about the miles, the distance; it is about the closeness of community.”

This interview was conducted with a TSK’s Co-founder, who preferred to remain unnamed. This Co-Founder emphasized TSK as “being an education outlet for those looking to learn about local food and create partnerships with farmers—it is much more than just a food distribution organization.”

Members sign up and commit to monthly food measuring and packaging orders, which are placed online by Wednesday the week prior. Being a member-run, TSK makes its food buying decisions and investments with member input. Rather than apply for 501(c) 3 status, TSK wants to one day have a formal space with a side café. Presently, The Second Kitchen runs in a “second kitchen.” TSK Co-Founder says this “Second Kitchen” is a basement space donated to the co-op by two of its involved and appreciative members. The Co-Founder states that while current members have embraced this space, other members would like to seek a “permanent space, which is more professional.”

This lack of an affordable, central space has been a challenge for the co-op in trying to grow membership outside of the student community. Though started a student co-op, TSK would like to diversify its membership and address one barrier TSK has struggled with—students graduate. The Co-Founder sees “food as community,” and connecting to the greater Boulder community is the future goal for the co-op.

Growth also creates some friction in ideology. TSK is committed to buying bulk, sustainable food, which does not always include the staples so many of have come to love. Bananas and citrus are popular with members, but do not align with the co-op’s commitment to
purchasing sustainable food. The Co-Founder also states that Boulder has a “rap as a local food hub, in an elitist or super food pretentious way” TSK seeks to broaden the community to break away from this stereotype. This also creates a system where producers are able to mark up the cost of a product, and the willingness to pay is higher in Boulder than other places. Yet for TSK price mark-ups are not always affordable, as in the case of eggs.

The TSK representative felt that the barriers their organization faces were similar to others in Boulder County LFM: their organization struggles with the cost of local food, what can be produced by the climate, as well as access viable markets (Table 16). The barriers that the Co-Founder expressed that resonated with other study participants included the the lack of education and consumer preference to eat non-local food. The Co-Founder commented that these two barriers are interrelated; people less knowledgeable about food are less likely to consumer locally.

Table 15. The Second Kitchen LFM Barriers

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>STRUCTURAL</th>
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<tbody>
<tr>
<td>Cost of space, with a location that makes sense</td>
<td>Promoting sustainable eating behavior, like seasonality</td>
<td>No formal space, and not enough where TSK is currently</td>
</tr>
<tr>
<td>Member fees, though essential and flexible it can create an environmental justice issue</td>
<td>Community building, expanding membership, attracting a diverse audience</td>
<td>Access, the order forms are open Sunday to Wednesday, there is not a lot of</td>
</tr>
<tr>
<td>Affording things like organic eggs, and supporting ethical production- even if it does not represent the market value</td>
<td>Member accountability</td>
<td>“Growing pains”</td>
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<td></td>
<td></td>
<td>National policy subsidies that make it difficult for small farmers to be productive</td>
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</tbody>
</table>

Table 16. TSK Perception’s on Barriers Boulder County LFM Barriers

<p>| 1. Financial Availability (cost of LF) | For TSK no, for members yes |
| 2. Lack of knowledge and education of growing food practice | Yes |</p>
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<tbody>
<tr>
<td>3.</td>
<td>Structural limitations (climate, land/water availability)</td>
<td>Yes</td>
</tr>
<tr>
<td>4.</td>
<td>LF compliance/co-existence with government standards and policies</td>
<td>Yes</td>
</tr>
<tr>
<td>5.</td>
<td>Logistics of small scale LF producers and finding viable markets (storage of LF, transportation act..)</td>
<td>Yes</td>
</tr>
<tr>
<td>6.</td>
<td>Consumer preference to eat non local</td>
<td>Yes</td>
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**MM Local**

MM Local is a food preservation company that is now in its fifth year. It preserves local foods, usually as a type of pickle or sauce. One of the reasons behind its success is that it has been able to close the gap between ripe foods in abundance and the “hungry season.” The product is preserved with artisan flavors and in beautiful jars (Figure 14). An employee who has been with MML for 3 years was interviewed and preferred to remain unnamed.

![MM Local Flavors: pickles, picked beets, peaches and tomato sauce](MM Local, 2013)

Products include Curried Boulder Beets, High Desert Peppers, Pearl Street Pickled Onions and Paonia Pears. These are sold at local retailers around Colorado and by CSA share. In the past year they have moved their operation from a rented kitchen space to their own processing facility in downtown Denver. In the facility they clean and preserve the product through a vacuum sealing process. Their product is processed and carried by different retailers, diminishing the direct farmer contact so valued within the LFM. However, the employee
emphasized that the connection to the local aspect of food is paramount for the company. For this reason, MML has biographies and pictures of every Colorado farmer they source from and a detailed map of farm locations in case consumers would like to visit their producers.

Though a company that produces “local” food, MML does not have a specific definition for it; in fact when asked the question, the MML employee declined to answer saying “there are a lot of conflicting definitions and MML does not have one, but the farmer relationship matters.” MML has experienced growth and success, but barriers are still present within their operation.

The first and most emphasized barrier during the interview was the taste and availability of products. Depending on the farm where the produce was sourced and nature of the growing season for the specific food, every batch of MML preserves and pickles do not taste the same. Though they make every effort to maintain consistency, with specific recipes, cooking time and processing methods, LF consistency varies. The success and failure of a farmer’s crops also play a huge role in MML’s product offerings. Last season, peppers from many of their regular farmers failed and they had to source from different farmers, who did not have USDA Organic certification. MML’s final product was still local and organically grown; however, they had to change the labeling and answer many customers’ questions about the absence of certification. MML stated that most people understood and were accepting of a non-certified product; however, there were limited opportunities to present this information.

Product availability is also affected by the yearly growing seasons. What is canned during a season is limited by how well things are growing. One example given was the popularity of MML tomato sauce. It has sold out every year and is often unavailable in stores. When customers call to inquire about the availability of a product that has sold out people are often agitated and don’t understand “why they can’t get this all year long.” For MML one of the most
difficult challenges is consumers’ lack of understanding when it comes to the variations due to seasonality of a locally produced product.

MML supports regimented government standards in LF practices. Being in a preservation business, having a product that is tainted with bacteria could damage their business by association. This is why they regularly test all their products and suggest a two year use-by date.

As a young company, they have also been testing ways to expand their business into other market and better their current product. MML has been experimenting with different jars, they have tried several companies and still are not satisfied with the lid. A second issue has been finding organic vinegar. There are few companies that sell the amount they need close to Colorado. MML is better able to address the latter while they are less able to influence the consumer.

MML sees LFM in Boulder County as having barriers (Table 18). While the cost of LF, and community preference to eat food not produced within the community are concerns, they see the storage of LF as one of the largest barriers to the success of the movement (Table 18). MML’s mission is to mitigate this issue, but it cannot address all the food waste that occurs in a LFM. From their experience in this industry MML perceives this a barrier not only in the Boulder County LFM, but most LFM in general.

Table 17. MM Local’s LFM Barriers

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>STRUCTURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing sales and connecting with more stores that will carry MM Local Product</td>
<td>People’ s approach to local food seasonality and limitations</td>
<td>Growing season limitations, creates variability in the product</td>
</tr>
<tr>
<td>Cost of some organic processing ingredients like “Organic Vinegar”</td>
<td>It considers Local to be statewide, which is a problem for some institutions</td>
<td>Amount of intensive work that has be done in a short window of time</td>
</tr>
<tr>
<td>Making sure that product is always explained for lack of consistency</td>
<td>Finding the right lid and jar… 5 years, multiple companies</td>
<td></td>
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</tbody>
</table>
Table 18. MM Local's Perception on Boulder County LFM Barriers

<p>| | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
<td>Financial availability</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Lack of knowledge and education of growing food practice</td>
<td>Knowledge about seasonality not “how to grow food”</td>
</tr>
<tr>
<td>3.</td>
<td>Structural limitations (climate, land/water availability)</td>
<td>Yes, seen with seasonality in their own programs and for Colorado as well</td>
</tr>
<tr>
<td>4.</td>
<td>LF compliance/co-existence with government standards and policies</td>
<td>Yes</td>
</tr>
<tr>
<td>5.</td>
<td>Logistics of small scale LF producers and finding viable markets (storage of LF, transportation etc..)</td>
<td>Yes, they have a lot of bulk to process in a very short amount of time. They have 2 trucks for the business; but sometimes need to transport thousands of pounds</td>
</tr>
<tr>
<td>6.</td>
<td>Consumer preference to eat non local</td>
<td>Yes</td>
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CAFÉ Aion

Café Anion is a restaurant located on “The Hill,” across from the University of Colorado Boulder’s main campus. In its third year of operation and has already won numerous culinary awards. It seeks to bring the traditional, honest and beautiful presentation of the Spanish Tapa to “local soil” (Café Aion, 2013). Their head chef Dakota Soifer has spent seven years in Boulder County as both a “consumer and producer of LF.” He was interviewed for this segment and feels that restaurants are the “poster children of the LFM.” and it is their responsibility to represent LF positively. Café Aion sources LF from the community and relies on the relationships established with farmers. Because Soifer has been in the industry in Boulder County for a number of years, access to LF is not a problem; he know who to call to get what he needs for his restaurant. LF is a “loose term” for Aion. During summer they source form Flatiron Farm, who bikes their produce from four blocks away, but they get beef from the Western Slope of Colorado. Due to the amount of meat that is consumed at Aion, they do not source their beef, lamb or other meats from closer sources. In each example of their food, there is a name associated with the product:
“This lamb is from Jim.” Being able to have that hand-shake and personal connection is more valuable to them than distance traveled.

The cost of LF for Aion is more expensive than conventional sources; a bag of salad green is sometimes three to four times more expensive than other organic lettuces. However Soifer states that creativity has addressed this issue. By using fewer lettuce leaves and more herbs, they are able to produce a salad that is local and affordable. The upside of a LFM relationship with farms such as Flatiron and Cure is that when there is a surplus of an item, a farmer will call Aion and offer a low price to avoid waste. Soifer has also addressed charging more for their food by providing the “story behind the product, and not just selling taste.” People in the community are more receptive to paying a higher cost, when they are aware of the Boulder County farmer behind it. For Soifer, there have not been any issues with other barriers, and they “do not care about the USDA certification,” because he knows where the food came from. There is a rooted connection that is more important than a formal “organic” certification. The Aion community also likes being in Boulder because it is “urban-y.” It is small enough to know people and big enough to have a wide market to help LFM expand.

As a restaurant they don’t have issues with specific federal policies. Siofer does mention in future if they wanted to sell their own processed products, such as salami there would be some compliance measures they would probably need to research. They also have been able to acquire greens year -'round because of hoop houses, and they tailor their menus to reflect what is in season or locally practiced. They do struggle with customers’ requests to for non-local food such as avocados. Soifer emphasized that avocados seem to be the most popular request even by “PhD Mr. and Mrs. Mindful.”
Soifer’s success within the LFM is evident in his perceptions of barriers to the Boulder County LFM; he does not perceive that there are many (Table 20). He states that he can get most everything he needs year round at an affordable cost. The only barrier he felt Boulder County encounters is preference to eat non-locally produced food. He says people request berries in December and avocados daily.

Table 19. Cafe Aion’s LFM Barriers

<table>
<thead>
<tr>
<th>ECONOMIC</th>
<th>SOCIAL</th>
<th>STRUCTURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of LF</td>
<td>Consumers desire to eat non-local food</td>
<td>none</td>
</tr>
</tbody>
</table>

Table 20. Cafe Aion’s Perceptions of Boulder County LFM Barriers

<p>| | | |</p>
<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financial availability (cost of LF)</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Lack of knowledge and education of growing food practice</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Structural limitations (climate, land/water availability)</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>LF compliance/co-existence with government standards and policies</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Logistics of small scale LF producers and finding viable markets (storage of LF, transportation etc.)</td>
<td>No</td>
</tr>
<tr>
<td>6</td>
<td>Consumer preference to eat non-local food</td>
<td>Yes</td>
</tr>
</tbody>
</table>

ANALYSIS

This study found that the LFM in Boulder County has a strong reliance on community, different definitions of local food, and a lack of shared knowledge about the LFM. The above benefits were shared among all the participants of this study whereas the barriers each experienced depended on their specific relationship and function within the Boulder County LFM.
Despite many actors and institutions participating with the LFM not one defined LF in the exact same way, contributing to misperceptions that add to the ambiguity of local food in Boulder County (Table 21). One consistent association with LF is the word “community” (Table 21). Everyone interviewed described the importance of the farmer and consumer relationship. This relationship was described as “knowing a name and face” and sharing a “hand-shake” (Kluck, 2013; Sweeney, 2013; Soifer, 2013). Of the educational, production, and distribution categories in the Boulder County LFM community was the most consistent focus.

This study found that the Boulder County community plays a dichotomous role; it is an advantage and barrier to success. Community has supported: i) the educational missions of the Growe Foundation and Growing Gardens; ii) production of LF and meat in the case of 63rd Street and Jacob Springs Farms; iii) consumption of LF at Café Aion, and iv) distribution of MM Local foods and The Second Kitchen. The CSA model used by 63rd Street Farm as well as JS farm has made the federal barriers less influential. Moreover the Boulder County community understands and values locally produced food over USDA certified food (Café Aion, 2013; Kluck, 2013; Scott; 2013; MML, 2013; Brown, 2013; Sweeney, 2013).

Community preference to eat food not grown locally is the change that the Boulder County LFM is trying to alter. Though Boulder County is perceived as having a strong LFM, support is not as widespread as it could be (Sweeney, 2013; Brown, 2013; TSK, 2013; Card, 2013). There is consensus that BC local food is supported, but by a sector of citizens— not everyone. This concept of the dual role of the community presented in these interviews is linked to the educational role. Some felt that Boulder County is unique in that is has interested citizens who promote food relocation, but as a whole there is a general lack of knowledge about the

Among those who value local food and support it, LFM participants have found success. This higher consumer willingness to pay for local food, which is Colorado grown correlates to a study conducted out of CSU that found Colorado consumers are most apt to purchase food that is “Colorado Grown” for a higher price (Nurse et al., 2012; Louriero and Hines, 2002; Martinez et al., 2010; Hinrichs, 2011; Goodman et al., 2012.)

The Boulder County LFM community is also described as alternative and exclusive. It is “full of hippies”, “PhD Mr. and Mrs. Mindfuls” and “elitist” (Soifer, 2013; TSK, 2013). References like these connect to the lack of inclusivity. Although this perception of a knowledgeable community exists, it is not strongly supported by this study due to misperceptions presented in interviews. Brown and Sweeny referenced the impact of food miles and the large amount of fossil fuels that are used in food transportation. There is limited validity in this argument and that transportation miles are a small part of the overall carbon footprint of product (Smith et al., 2005; Weber and Matthews, 2008). Not only was there a lack of awareness about Boulder County LFM initiatives, there was improper credit given. For example Transition was credited with being behind “land use change,” when in fact it was Boulder County (Brown, 2013). People interviewed who had an understanding of the current LFM policies on a local and national level, were farmers or Boulder County employees. Participants chose to not answer questions regarding local food and perceived the LFM in Boulder County as having less barriers or problems (Soiffer, 2013; Brown, 2013; MML, 2013; TSK, 2013).

Table 21. Definition of LF by Boulder County LFM organizations

<table>
<thead>
<tr>
<th>ORGANIZATION</th>
<th>DEFINITION</th>
</tr>
</thead>
</table>

55
<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growing Gardens</td>
<td>Food produced within our community (County only)</td>
</tr>
<tr>
<td>Growe Foundation</td>
<td>Food produced as “close to the source”</td>
</tr>
<tr>
<td>63rd Street Farm</td>
<td>No miles definition, food produced within community” peaches are local</td>
</tr>
<tr>
<td>MM Local</td>
<td>hard to define, did not</td>
</tr>
<tr>
<td>The Second Kitchen</td>
<td>Food produced close (within driving distance) where there is a relationship with producer</td>
</tr>
<tr>
<td>Jacob Springs Meat CSA</td>
<td>LF is defined by openness: “shaking the hand of a producer who makes the food for your family” whether this occurs at 20 miles or 200 hundred miles</td>
</tr>
<tr>
<td>Adrian Card</td>
<td>100 miles as USDA defines it</td>
</tr>
<tr>
<td>Café Aion</td>
<td>“loose term” Colorado wider base for summer</td>
</tr>
</tbody>
</table>

Perception of county and Federal government policy also varied depending on the relationship of an organization or actor to the LFM. Non-profits perceived national food policies as not helping their direct efforts (Sweeny, 2013; Brown, 2013). This perception is supported by difficulty implementing federal LF programs in schools (Nurse et al., 2011). On the LF production side (63rd Street Farms and Jacob Springs) Federal food regulations and government agriculture subsidies are the most difficult barriers to overcome. USDA certification restrains and limits the direct markets in which farmers can sell because they don’t have government organic certification (Scott, 2013; Kluck, 2013). This perception of organic certification as a barrier to success in LFM operations supports similar findings in other LFM communities (Nie and Zepeda, 2011; Greene and Kremen, 2003). Conversely the perception of government aiding in LFM efforts was also represented. Card stated that the Federal and local governments contribute substantially to the success of Boulder County’s LFM. These contributions include subsidizing marketing and education programs for small scale and new farmers (Card, 2013; Martinez et al., 2012). MML also perceived government standards and regulations as beneficial for their business (MML, 2013).
Each participant encountered barriers to participation within the LFM. Economic barriers played a more limited role overall then social and structural barriers. This is consistent with affluence of Boulder County in relation to the rest of the U.S. A home in Boulder County costs over four times the national average (Trulia, 2013). Economic barriers are also overcome differently, depending on season and current situation whereas some the structural and social issues are unfailing in their reoccurrence. The two most common barriers facing institutions and actors within the Boulder County LFM were social and structural. The social barriers are described above and the structural one for many is the overcrowding at the Boulder Farmers’ Market (Scott, 2013; Sweeney; 2013; Kluck, 2013). Those who encountered the most barriers were farmers or those directly connected to growing food. Café Anion had the least barriers and therefore perceived the movement as being barrier free it was also the least removed from the food growing process.

Table 22. Comprehensive list of barriers to LFM success in Boulder County

<table>
<thead>
<tr>
<th>ECONOMIC BARRIERS</th>
<th>SOCIAL BARRIERS</th>
<th>STRUCTURAL BARRIERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of local food</td>
<td>Consumers approach to seasonal eating</td>
<td>Federal government policies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USDA Organic Certification</td>
</tr>
<tr>
<td>Seeing LF as a business and</td>
<td>Marketing of programs/projects</td>
<td>Farmer’s market: lack of availability,</td>
</tr>
<tr>
<td>profiting from it</td>
<td></td>
<td>cost, and crowdedness</td>
</tr>
<tr>
<td></td>
<td>Lack of knowledge on benefits of LF,</td>
<td>Limitations to what can be produced in a</td>
</tr>
<tr>
<td></td>
<td>growing food</td>
<td>high plans climate</td>
</tr>
</tbody>
</table>

**GENERAL CONCLUSIONS AND RECOMMENDATIONS**

The goal of this study was to ascertain whether Boulder County LFM has barriers, and if so can they be solved with local policy initiatives or is the LFM structurally flawed? Case studies demonstrate the LFM in Boulder County has barriers. The barriers vary depending on an actors’ relationship to the LFM and include federal certification policies, consumer desire to eat
food out of season, climate limitations, and establishing a presence within the community. Local policy initiatives presented by the BCLFPC have mitigated some of these problems, but not all of them. Additionally, local policy cannot change federal food service regulations; though it can encourage community participation in CSA programs and land zoning policies. The Boulder County LFM is structurally challenged by a global system that has created consumers who desire globally-produced food, an environment that is water limited, and federal subsidies that keep the prices of conventional agriculture lower than locally produced products. While, education and community support for the LFM allows it to grow, these barriers are ingrained within the LFM.

My findings were contrary to what I had initially expected. As a consumer of local food I expected that economic barriers would hinder the success of Boulder County’s LFM more than what participant relayed. The lack of emphasis on financial constraints is consistent with the high socioeconomic status of those who purchase local food.

This study also found diverse views on local food: How it should be defined, labeled, grown, and how we as a community should support it. Jacob Spring’s farm is deeply rooted in Christian ideology and 63rd Street Farm is committed to permaculture practices. However, Boulder County also still has conventional farmers that use fertilizers and chemicals (Card, 2013). All these approaches are represented with participation in the LFM; people who have different growing practices don’t want to interact with others whose agricultural practices they do not agree with.

The competition and tension in Boulder County’s LFM referenced in interviews with both Amanda Scott of 63rd Street Farm and Adrian Card of the CSU Boulder County Agriculture Extension were represented in a Boulder Weekly article published a week before the conclusion of this study. The article titled, “GMOs vs. local food system Is county government depriving
our economy of millions of dollars by making the wrong choice on open space lands?” was a politically charged article with public anger at Boulder County for not developing a plan for a 350 million dollar agriculture investment (Dodge and Dyer, 20130). It centered on an argument made by Mary Vonbreck a campaign manager for GMO free Boulder (Card, 2013; Dodge and Dyer, 2013). Vonbreck is quoted saying that a GMO free county is “what the citizens want, what the businesses want, and yet somehow these farmers have the right to handcuff the entire county to their food” and that the county did not “do their job, and it is disappointing” (Dodge and Dyer, 2013).

The reflection given on this article is not intentioned to denounce the efforts of the public to demand different county approach to agriculture. After all, it is this proactive citizen engagement that produced outcomes such as Boulder County’s Public Open Space. In fact, community vision if vital for LFM success. The point made here is the way in which these concerns were raised; a public finger point in a print publication is not the most conductive method to get other agriculture stakeholders in the community to want to work together.

Moreover, this situation is an example of localization of food system resulting in defensive reactionary characterized by a narrow group goal setting for a whole community (Hinrichs, 2003). The Hinrichs study was conducted in Iowa, but these groups who support an anti-government approach to localism is present in Boulder. This approach does not account for the economically or socially disadvantaged and is a cautioned outcome of food localism politics (Allen et al., 2003; Allen, 1999).

This article mirrored the different attitudes towards the LFM in Boulder County encountered throughout this study. From explicit statements that include: i) local food is that which is not GMO produced (Sweeny, 2013); ii) statements that “there are lot of people with
opinions who really don’t have a complete understanding of the LFM system in the county (Card, 2013). These all support this studies finding the Boulder County is experiencing localism politics.

I also found these negative views to not be entirely represented of what I have perceived in the Boulder County LFM. Complaints about the crowdedness of the farmer’s market are one view of this phenomenon. The farmer’s markets are so crowded because there is a community desire to support local food and see it flourish. Even the “politics of food pricing” as mentioned by Scott of 63rd Street Farms represents this community support; people are willing to pay a lot for a product that is local. Producers saw the community as needing more “knowledge and better seasonal eating practices,” but I see a food passion in BC community that was not portrayed in this study. This dual role of community has not been seen in the literature of previous case studies of LFMs thus far. I speculate that this may be correlated to the Boulder County’s attitude of high standards of sustainability and therefore higher expectations for community support.

Additionally this study raises questions at why the barriers I found where not the ones most common throughout different LFMs in the nation. Has Boulder County really addressed the issues of LFM structure and cost, or are the unreflexive politics within the community so strong that there these other barriers are minimal in comparison?

Furthermore, participants of this study were all white; there was no racial or ethnic minorities. This “whiteness” within the LFM in Boulder County questions the access of lower income individuals to LFM. This is an observation of the principal investigator, who has no access to class and racial status of those who eat and support local food. However, through direct participation in local food, I have also observed that local food can be exclusive based on income
and ethnicity. Class based exclusion has been identified within Boulder County, and this study’s findings support prior thee prior findings (Hickcox, 2007).

On a broad scale, this study contributes to ways other counties can address issues of conflicting politics within LFMs. Though there are different approaches to agriculture, by increasing stakeholder involvement through advisory bodies like the BCLFPC more beneficial outcomes can be reached. After attending and observing the council meeting, the collaborative process and genuine discussion that was being had from land use changes, to issues of crowding at the Boulder Farmer’s Market. Though open to the public, this council does not present its efforts in a way community members can easily participate and understand the LFPC’s mission. This statement is based on my own personal experience at a BCLFPC meeting. I attended a meeting in December of 2012 looking to meet people involved with the LFM community in Boulder County. Everyone there was acquainted with one another and after I signed in, no one spoke to me for the next two hours, until I introduced myself unprompted because the mediator did not.

This conclusion is not meant to condemn the efforts of the LFM in Boulder County, but rather to raise awareness about the lack of understanding and inclusion of stakeholders. The BCLFPC is building trust through its efforts; however, it is not portraying the inner workings of the LFM to the public. Without trying to connect with people such as Vonbreck, who has very strong opinions about how food should be grown, will not solve the contentious battle between the county and the public. A common LF definition voted on within the community could also help mitigate misperceptions and confusion over what is considered and labeled LF.

LIMITATIONS AND QUESTIONS FOR FURTHER RESEARCH
This study was limited by time; more interviews and participants would further explain the barriers and opportunities for LF in Boulder County. There was also off the record discussion that hints at much deeper ideological divides. For the frequency that the word “community” was used in relation to Boulder Count and the LFM, convincing community members to take a small amount of time to be interviewed was incredibly difficult. This study is only prelude to underlying tensions and politics in Boulder County. No data on the socioeconomic status of participants within the LFM in Boulder County exists. Analyzing these trends would be an interesting component to the inclusiveness of the LFM in Boulder County.

To my surprise, this study did not show the barriers most commonly associated with those other LFM's experience. This study did not determine the reasoning or cause for this difference. I speculate that this is correlated to Boulder’s culture, affluence, and education; however, more research is needed.
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Scott, A. (March 1, 2013). 63rd street farm.


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Sweeny, A. (February 6, 2013). Interview.


APPENDIX

Interview Protocol

1. What is your role in the Local Food Movement?
   a. If role is previously known via recruitment, then a confirmation will still be asked to limit interviewer perception bias.
   b. What specifically does your business do to promote local food (if at all) ex. promoting garden use, educating, purchasing local goods, farm-to-table restaurant
2. What have been you biggest challenges or barriers to success with your involvement with the local food movement (ie. community gardens, work with schools, business, consumer at farmer’s market ect..)?
3. How have you addressed these barriers, or are they ongoing?
4. Do you perceive Boulder, County as having a strong local food movement?
   a. If no, what are some steps you think are needed to be taken to strengthen the local food economy of Boulder, County?
5. Are there any policy initiatives you would like to see Boulder, County take to support a local food economy/ or your relationship to local food related activities
   Time Dependent Question
6. Is there something you feel is unique to Boulder, County and its local food movement we have not currently discussed?

General questions regarding the local food movement and personal perceptions

1. How do you define Local Food?

2. Do you feel that national policies effect local food production (in Boulder, County)?
   a. If yes, does it aid of hinder efforts, why?
3. The following have been researched as barriers to the local food movement:
   1. Financially availability (cost of LF)
   2. Lack of knowledge and education on growing food practices
   3. Lack of land
   4. Competition Federal government standards and policies
   5. Logistics of area/homegrown preparation, storage or/and transportation
   6. Customer preference to eat non-locally produced food

In your opinion does Boulder, County encounter these barriers? Yes or No? (elaboration welcome)

   • Clarifying prompt (This can be based on personal involvement in the movement or opinion in general)
Participant Informed Consent Form

Exploring Barriers within the local food movement in Boulder County
Principal Investigator: Mackenzie White

Please read the following material that explains this research study. Signing this form will indicate that you have been informed about the study and that you wish to participate.

You are being asked to participate in a research project conducted by Mackenzie White, an undergraduate student in University of Colorado at Boulder’s Department of Environmental Studies. This project is being conducted under the direction of instructor Dale Miller, Department of Environmental Studies, University of Colorado. Mackenzie White can be reached at 303-550-2975. Dale Miller can be reached at 303-492-6629.

This research study is about the local food movement in Boulder, County. The study seeks to understand the perceptions and barriers as seen by participants involved in the local food movement. You are being asked to participate in this study because you are involved as a producer, consumer, or participant in local food activities in Boulder, County. It is entirely your choice whether or not to participate in this study.

Participating will take about 30-45 minutes of your time. You will be asked questions about your opinions, experiences and perceptions of the local food movement in Boulder, County.

RISKS There are no foreseeable risks associated with participating in this study.

BENEFITS Taking part in this study will not result in any direct benefits to you, but will benefit in expanding the knowledge on the local food movement in Colorado.

COMPENSATION You will not be compensated for participating in this study. You have the right to withdraw your consent or stop participating at any time. You have the right to refuse to answer any question(s) for any reason. Refusing to participate in this study will not result in any penalty or loss of benefits to which you are otherwise entitled.

If you have any questions regarding your participation in this research, you should ask the investigator before signing this form. If you should have questions or concerns during or after your participation, or would like to receive information about the completion of this study, contact Mackenzie White at 303-550-2975.

If you have questions about your rights as a research study participant, you can call the Institutional Review Board (IRB). The IRB is independent from the research team. You can contact the IRB if you have concerns or complaints that you do not want to talk to the study team about. The IRB phone number is (303) 735-3702.

AUTHORIZATION
I have read this paper about the study or it was read to me. I know the possible risks and benefits. I know that being in this study is voluntary. I choose to be in this study. I know that I can withdraw at any time. I have received, on the date signed, a copy of this document containing 1 page.

Name of Participant (printed) __________________________________________

Signature of Participant ___________________________ Date ______________
**Interview Information**

**Table 23. Interview Details**

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Date</th>
<th>Time</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annie Sweeney</td>
<td>Growing Gardens</td>
<td>2/6/2013</td>
<td>4:00 PM</td>
<td>Phone</td>
</tr>
<tr>
<td>Bryce Brown</td>
<td>Growe Foundation</td>
<td>2/22/2013</td>
<td>4:00 PM</td>
<td>Amante North Boulder: 4580 Broadway St Boulder, CO</td>
</tr>
<tr>
<td>Amanda Scott</td>
<td>63rd Street Farm</td>
<td>3/1/2013</td>
<td>12:00 PM</td>
<td>63rd St. Farm 3796 63rd St Boulder, CO 80301</td>
</tr>
<tr>
<td>Steven Kluck</td>
<td>Jacob Springs</td>
<td>3/1/2013</td>
<td>10:00 AM</td>
<td>Brewing Market Basmar 2610 Baseline Rd Boulder, CO</td>
</tr>
<tr>
<td>Dakota-Rae Weester</td>
<td>MML</td>
<td>3/13/2013</td>
<td>6:00 PM</td>
<td>Ozo Coffee Pearl 1015 Pearl Street Boulder, CO</td>
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<tr>
<td>Dakota Sioffer</td>
<td>Café Aion</td>
<td>3/20/2013</td>
<td>2:00 PM</td>
<td>Café Aion 1235 Pennsylvania Ave Boulder, CO</td>
</tr>
<tr>
<td>Adrian Card</td>
<td>BC Agriculture Extension</td>
<td>3/11/2013</td>
<td>10:00 AM</td>
<td>9595 Nelson Road,Box B Longmont, CO</td>
</tr>
</tbody>
</table>