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RURAL FOOD PROCUREMENT STRATEGIES AND ATTITUDES TOWARDS FOOD
SOURCING – A CASE STUDY OF BOULDER TOWN, UTAH

By

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B.A., Pitzer College, Claremont, CA, 2010

Thesis

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Abstract: Rural Food Procurement Strategies in Boulder Town, Utah:

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Today, while the United States continues to boast one of the highest standards of living in the world, rural communities suffer from an inability to acquire sufficient healthy food. Rural food systems have undergone a substantial transition over the last 50 years causing previously agricultural regions to now depend heavily on outside food sources. It should not be so hard to consume food produced within these rural communities, yet it is.

Researchers relying on secondary data analysis from national scale databases may identify rural areas as “low food access,” however, gaps in available records inhibit the development of a full understanding these rural food systems. This research explores the current state of food access in the rural population of Boulder Town, Utah through an on the ground exploration of the many avenues used by residents to procure their food as well as the importance and satisfaction the residents feel towards said strategies

Ultimately, Boulder residents self-produce or procure from someone they know 27% of their food. The remaining 73% is obtained from outside sources (i.e. grocery stores, big box stores). This means that large, national scale databases overlook over a fourth of the food consumed in this town. On the other hand the percentage of community-produced food consumed looks promising and is something residents have worked to achieve for many years. There remains much room for growth, however, as residents of Boulder desire increased self-reliance in their town and personal food systems. They identify, better access to town-produced foods, support for local growers, green houses, more producers of a wider variety of crops, and producers of meat and dairy as areas for improvement within the town’s food system. The researcher identifies a lack of dialogue between producers and consumers as a significant barrier to increased consumption of Boulder produced foods. A structured avenue of communication as well as retail space (i.e. a farmer and food co-op) may provide the space for such dialogue to take place.

Key Words: Rural livelihoods, Rural Food Deserts, Rural Food Procurement, Food Access

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Rural counties in the U.S. that once were able to produce and process most of their own food, today rely heavily on outside sources for caloric sustenance. The consolidation of food production and processing under the current, capitalist-driven food regime has communities dependent on larger scale distribution systems from increasingly distant and dispersed sources.

Boulder Town, Utah, (population 180) due to its geographic isolation, Mormon and New Age cultures, rich natural resources of land, water and weather plus other economic and demographic factors has explored a variety of strategies to individually and collectively become food sovereign. Locals call this achieving self-sufficiency. The dominant food system, however, hinders their ability to become self-sufficient in food despite having abundant natural, community and other resources that would make this possible. It should not be so hard to consume local food, yet it is.

National Databases do not adequately represent the reality of food procurement in Boulder Town. Given that they do not include farm stands, communal trade, bulk buying clubs and hunting, these large databases overlook roughly 27% of the food procured in Boulder and thus grandly misunderstand the realities of these rural residents. This, however, does not mean that rural residents do not face poverty and food insecurity. Studies show that rural residents often suffer more severe and persistent poverty than that experienced in urban places (Whitley 2013). Likewise, the consolidation and industrialization of the food system leaves many rural towns and residents without food outlets in their locality (Bitto et al. 2003). These residents then, must drive long distances to obtain food, leaving them at the mercy of gas prices and introducing many complexities into their food chain (Whitley 2013). These complexities often inhibit the supply of fresh produce and often increase the price of foodstuffs across the board (Kaufman

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1999; Bitto et al. 2003; Whitley 2013). This research explores the current state of food access in this rural population through a better understanding of the many avenues used by residents to procure their food as well as the importance and satisfaction the residents feel towards said strategies.

This paper begins by exploring existing literature and identifying the holes in current research that lead to questions that fueled this study. Next I introduce the community and subject of the case study through a geographic and social lens followed by an overview of my methods of investigation. Finally, I will discuss the findings from my survey and interviews ultimately making tentative suggestions for future food procurement methods in Boulder Town, Utah while identifying the limitations of my research and discussing some additional considerations.

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LITERATURE REVIEW:

Today, while the United States continues to boast one of the highest standards of living in the world, rural communities suffer from an inability to acquire sufficient healthy food. Ironically, many of these rural communities are in agriculturally producing regions. Rural sociologists and geographers, among others, have studied this phenomenon, exposing nationwide patterns of rural poverty and limited food access and proposing theories to explain food insecurity in the midst of agriculture. These researchers understand, for the most part, that rural food acquisition is something very removed from the instant gratification well-to-do urban shoppers have become accustomed to. The databases available to these researchers, however, have limitations and provide incomplete data for analyzing sparser and dispersed rural populations. On top of that, as the modern food justice movement began with a focus on urban populations, the lens, terminology and methodologies do not always make sense when studying rural areas. This literature review will explore existing research on rural food access in the U.S. while identifying and teasing out the limitations posed by limited data, imported theoretical constructs and hybrid research methods.

Madder and Busse (2011) state that, “[M]ultiple factors determine how and what we eat: culture, social networks, behavior, economics, and the environment.”(46) Geography, agricultural history, supply chains, the free (or not so free) markets, corporate consolidation and marketing are among the salient factors that shape what, how, when and to what extent and in what forms we have access to food. For many people in rural areas the price of gas, storability, storage capacity, and human factors such as the ability to have foresight/planning for the future determine food choices. Furthermore, life in many rural areas may not be as monetized as in

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urban settings. Urban life is fully within the web of the market where working for wages or selling commodities and services are the dominant means people have for obtaining food. In contrast, in rural areas there is greater access to land but less access to labor and product markets. Gardening, farming and bartering are much more common in rural areas. Urban areas are not only more enmeshed in the cash economy, they also have more dense and anonymous populations creating greater access to underground economies, begging, dependence on charity and illegal economically driven behavior. Sparser rural economies have more limited underground, illegal or charitable activities that can shape food access and choice (Whitley 2013). Ultimately, “efforts limited to adopting what works in urban communities to rural communities hinders developing innovative policy strategies tailored specifically to maximizing the unique assets of rural communities.” (Fleischhacker et al. 2013:203) The specific characteristics of urban and rural areas determine food acquisition and selection patterns, illuminating the fundamental differences between urban and rural livelihoods. It is both timely and important that research reflect these differences.

Impeded Access to Food:

The face of rural America has changed dramatically over the last 50 years. With the introduction of modern industrial agriculture, rural agricultural producing communities have dwindled as fewer people are needed to produce the same amount of food. As the number of farmers decreased, so did the number of farms. Garasky et al. note that, “less than 10 percent of the rural population now lives on farms, and less than 7 percent is actually employed in farming” (2006:85). As the economy shifts to urban centers focusing on manufacturing and services, rural communities deteriorate. Today,

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Some of America's poorest regions are rural communities surrounded by fertile farmland that once sustained vibrant agrarian communities and food traditions. Obesity is high in these rural areas. Rural farm families who have historically grown their own food or purchased staples from local grocery stores now increasingly rely on alternative food sources including fast-food outlets, liquor stores, and gas stations. (Mader and Busse 2011:48)

This decrease in accessible healthy food outlets is a phenomenon now prevalent in both urban and rural regions across the nation (Bitto et al. 2003; Whitely 2013). In response, the U.S. mainstream food justice movement adopted the term "food desert" to describe areas where healthy food outlets (grocery stores) are located outside communities, hindering their ability to obtain a healthy variety of food. While this term has largely been used to assess food access in urban areas, recently, the term's definition has been expanded to include rural areas as well. The food desert concept permits a community-scale analysis of impeded access to food.

Iowa State professor Lois Morton operationalizes the food desert concept by using what is becoming a national standard for measurement of this phenomenon in a rural setting. (This measurement is also used by the United States Department of Agriculture). Prof. Morton defines low access areas as counties (i.e. communities) in which at least one half of the population lives more than 10 miles from a large food store (Morton and Blanchard 2007). This and other research recognize one of the fundamental differences between urban and rural livelihoods, to be spatial dispersion of both people and food outlets, and the resulting food supply adaptations and expectations (Bitto et al. 2003; Gantner et al. 2011; Kaufman 1999; Longacre et al. 2011; Whitely 2013). However, this research neglects another foundational difference between urban and rural areas, namely, the rural ability to grow, hunt, fish, gather and otherwise procure large portions of food. In addition this approach fails to bring into focus the existence of other "non-traditional" means of obtaining food through farm stands, community

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supported agriculture and bulk buyers' clubs (Van Hoesen et al. 2013). While some rural researchers are beginning to identify these food procurement avenues (Fleischhacker et al. 2013) it has not yet influenced policy and external decision making.

Another approach often used by researchers is based on the notion of "food insecurity." Although similar to the concept to "food desert", food insecurity adds an individually-focused layer in analyzing the difficulties people face in acquiring food while simultaneously being applicable to a community-scale level of analysis. "*Food Insecure* is defined as having 'limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.'" (Mader and Busse 2011: 48; Garasky et al. 2006) Food secure, in contrast, is seen as "families' [having] consistent and dependable access to sufficient food to maintain an active and healthy life." (Mammen et al 2009:152). With these community and individual levels of analysis in mind-- even when adjusted for the dispersed nature of rural regions-- low food availability as measured through national databases hugely affects rural health and livelihoods.

Rural Residents Disproportionately Affected

Using the food desert approach, Mader and Busse (2011) identify 803 low-access counties in the United States with additional 418 counties designated food deserts, in other words, counties where all residents have low access to large food retailers. , Totaled, this amounts to about one third of all counties.. Ultimately, their findings show that "Food deserts are highly concentrated and prevalent in the rural areas of the United States."(47) Similarly, Sara Whitley argues "Food insecurity and hunger are especially important to research in the rural setting because transportation issues and increasing food prices may effect rural food-insecure

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Americans significantly differently than their urban or suburban counterparts.” (2013:37) Mader and Busse (2011) conclude that “Rural communities are disproportionately affected by unhealthy food environments. The majority of rural residents fail to meet fruit and vegetable intake recommendations, and rates of obesity and chronic disease are rising.” (Mader and Busse 2011:46). These unhealthy food environments, Leigh Gantner et al (2013) argue are credited to the prevalence of “nontraditional food stores”(which she classifies as convenience stores and mom and pop stores) in rural areas while John Van Hoesen et al. identify the “Transition from more widely distributed food providers to centralized providers... accelerated by the trend toward monopsony and vertical integration of the food production and distribution system” (2013:62) as the culprit. Similarly, Garasky et al (2006) found that “Rural areas lag behind urban places in many quality of life measures. Despite narrowing the gap in recent years, rural poverty continues to be more severe, more persistent, and often less visible than urban poverty.”(85; see also Mammen et al 2009:152) Sara Whitley notes that “the 2010 SNAP [Supplemental Nutrition Assistance Program] use in rural settings increased by 4% to approximately 15%.” (2013:36). While poverty is not always an indicator of food insecurity, these variables more often than not coincide.

Food insecurity, low food access and rural poverty are of concern for many reasons. Morton and Blachard (2007) indicate that health is compromised in food deserts and places with low food access while Mammen et al. (2009) identify that “Concerns over food sufficiency can affect individuals’ mental outlook which is an important dimension of their quality of life or satisfaction with life” (155). Ultimately, equal opportunity to a healthy and productive life is compromised when such a basic human need is not sufficiently met.

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Inadequacy of Current Definitions and Research:

In their studies of food access, however, researchers have almost entirely disregarded another aspect of basic human nature, procuring one's own food. Mammen et al. (2009) introduce the idea of "human capital" in order to focus on the rural skill base in relation to food production and the ability to earn an income; and they also address the success of gardens, hunting and fishing in providing sustenance to the community. Nonetheless, the idea of these "alternative" or "non-traditional" modes of food acquisition are never explored. All of the above defined measures of food availability utilized by national studies were created to assess urban populations where food acquisition is almost entirely limited to food outlets and sustenance is only available for purchase (Bitto et al. 2003; Gantner et al. 2011; Kaufman 1999; Longacre et al. 2011; Whitely 2013). And not only that, many of these measurements only identify grocery store chains as valid healthy food outlets. Locally owned food outlets were often unlisted. So the mismatch between analytical framework and rural reality persists.

Recognizing this gap (at least partially), Longacre et al. set out to study the accuracy of national data in describing rural reality. In their assessment of public directory data sources and the actual existence of food outlets in rural communities, they found that "[a]ccuracy was highest for big box stores (62.5%) and eating establishments (43.5% fast food restaurants; 42% full-service restaurants). None of the farm/produce stands and only 35.7% of supermarket/grocery stores were accurately identified through public directories, thus omitting important community sources of fresh produce." (2011:580). They further found that "Public data were significantly less accurate for low-population towns.... Approximately three quarters of the outlets in rural

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and small towns (68.6% and 77.3% respectively) were inaccurately identified through public directories, compared to about 60% in mid-sized (62.4%) and urban (58.2%) towns” (2011:580). That is a substantial hole in the data. However even with their thorough, on-the-ground assessment, Longacre et al. failed to understand the diversity of ways rural dwellers obtain food. Their study has no mention of bulk buyers clubs (where bulk amounts of food may be ordered directly from a distributor), community supported agriculture or home produced foodstuffs.

Beyond geographical differences (more land, population dispersion), social structure sets rural communities apart as well. Rural communities tend to be socially closer and depend less on government support (Whitley 2013). Mammenet al. (2009) make this point,

Clearly these rural low-income families preferred to depend on themselves and their abilities (their microsystem), on extended family and friends and, finally on local community groups (their mesosystem) before they turned to the federal government (the macrosystem)...[L]ow income families would rather lean on their kin than on the government. (165).

This social norm of leaning on kin keeps food insecure individuals and households out of national records and counts. Likewise many of the most rural counties do not have the personnel or facilities to operate a food pantry or supply other forms of food aid (Gantner et al. 2011) This becomes another example of how large, nationally scoped databases fail to accurately represent rural reality. On top of that, national databases struggle to precisely identify food deserts because they are such a complex phenomena. “Differentiating between economic, social, and/or geographic constraints is very complex and difficult to capture within large-scale national analysis.” (Van Hoesen et al. 2013:62) Taking a more narrowly focused approach may shed better light on community experiences.

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Conclusion:

The concepts of food desert and food insecurity can be applied to rural areas but they need to adjust for the fact that community-level data regarding food markets in rural areas may be more inaccurate than in urban areas and that rural access to land fundamentally alters the equation regarding food access compared to urban areas as they are currently constituted. (As an aside, with the proliferation of urban farmers markets and urban gardens, data on food deserts and food insecurity may become less reflective of urban reality going forward.)

If these large, nation-wide databases misrepresent rural populations, then what needs to be done? Mader and Busse call for “more meaningful measures and assessments at a neighborhood level” (2011:49). They continue by noting that the US Department of Agriculture (USDA) is beginning to understand these shortcomings. The USDA now “highlights the need to understand local market conditions that contribute to difference in food access before designing policy interventions.... Additionally, studies have collected information on locations of food retailers other than supermarkets, such as fruit and vegetable stands, meat markets, farmers’ markets, community-supported agriculture (CSA), and bakeries.” (Mader and Busse 2011:49) Ultimately, researchers need to get on the ground (as Longacre et al. did) and assess communities individually. Localized surveys and in-depth interviews, or focus groups (as conducted by Smith and Morton) will go far to illuminate rural food access issues. These case studies are needed to inform the design of future aggregate data collection.

To begin taking steps in the right direction, “Centers for Disease Control and Prevention (CDC) recommends that communities improve the availability of mechanisms for purchasing foods from farms.”(Mader and Busse 2011:50) Similarly, rural residents should take ownership over their food acquisition avenues.

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More thorough analysis of localized food environments using participatory methods would result in a community-identified need for new or improved food systems and may specifically point out the locally appropriate solution for developing or bolstering the use of alternative food retailers, such as farmers' markets, community gardens, food policy councils, grower cooperatives, or CSAs (Mader and Busse 2011:50-51).

Community food assessments are a great tool to aid in painting a comprehensive picture of the local food chain. They not only help to identify areas for growth but also garner local interest and investment in improving community food security.

Further, integrating the idea of "human capital techniques" as a food security mechanism is another step to be taken towards community and individual food security. This term encompasses strategies such as "gardening, freezing, canning, and preparing big soups or stews" (Mammen et al 2009:163). The procurement of free or low cost food through this avenue not only provides much needed nutrient rich calories but provides a feeling of ownership. "Utilizing one's human capital to procure food supplies appears life affirming" notes Mammen et al (2009:165), while other coping techniques such as skipping meals, stealing, or becoming dependent on aid foster reliance and submission furthering the sense of desperation.

Rural livelihoods will be protected when community food systems are established or more specifically, "a collaborative network that integrates sustainable food production, processing, distribution, consumption and waste management in order to enhance the environmental, economic and social health of a particular place" (Mader and Busse 2011:50). Such systems would integrate justice and advocacy as an organizing framework for a different kind of food system.

While the focus on rural livelihoods through assessment of national databases may give a larger picture and lead to more accurate and focused research, it is just the tip of the iceberg. All contributors to the challenges of rural food acquisition must be considered. Community food

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assessments as well as research conducted through community-wide surveys and interviews have the power to illuminate and address these contributors. With this knowledge the construction of a framework for understanding, analyzing, and finally, ameliorating rural food acquisition is possible. From there, substantial change may take place.

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RESEARCH QUESTIONS:

Considering the above investigation into current literature, the following questions guided this research:

1. What are the strategies of the residents of Boulder Town, Utah in obtaining food?
 - a. What strategies do residents employ to overcome barriers to food acquisition (*i.e. long distances to grocery outlets*)?
 - i. Do people grown their own food, raise chickens, run cattle, hunt, gather, or barter for foods?
 - ii. To what extent do these activities contribute to their personal food self-reliance?
 - iii. To what extent do these activities contribute to the community's self-reliance?
 - iv. How many people want more individual and community self-reliance?
 - v. To what extent are residents satisfied with the food they are able to acquire?
2. Why are rural people not consuming locally¹ produced food?
3. Under what conditions do Boulder residents consume local or non-local food?
4. What are the primary reasons for these choices?

¹ "local" as used in this study is roughly defined as produced and processed within 300 miles or within the state of Utah. Also, the "Limitations and Considerations" section offers a discussion on the definition of "local."

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SITE DESCRIPTION AND STUDY AREA:

Garfield County, Utah

As national database information loses significant accuracy and detail in rural areas, I use data from the county as well as town level to paint a more nuanced picture of the area. Boulder Town sits within Garfield County, Utah, a rural county situated in the south central portion of the state.

Figure 1 Garfield County, Utah

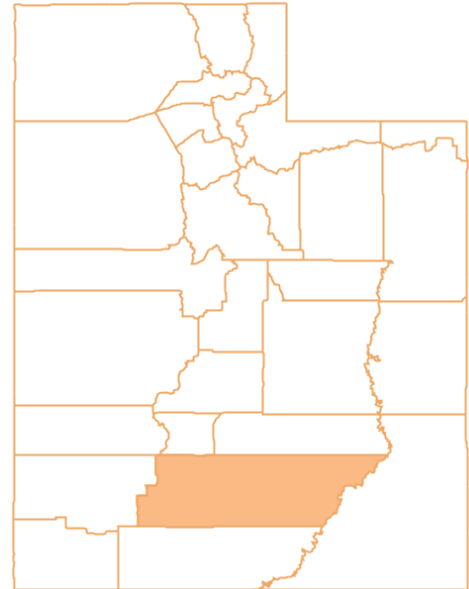


Table 1: Demographics of Garfield County, Utah 2014

Population, 2013 estimate	5,083
Median household income, 2008-2012	\$44,345
Persons below poverty level, percent, 2008-2012	12.3%
Land area in square miles, 2010	5,175.12
Persons per square mile, 2010	1

Source: US Census Bureau 2014

Nestled deep within canyon country in central southern Utah, with an average of one person per square-mile (equivalent to Alaska’s population density and technically qualifying as a “Frontier”), the rural county of Garfield is an expanse of striking natural beauty. This humble and sparsely populated county boasts access to 7 Nationally Protected Areas (Bryce Canyon NP, Canyonlands NP, Capitol Reef NP, Dixie National Forest, Fishlake National Forest, Glen Canyon National Recreation Area and Grand Staircase-Escalante National Monument) as well as

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many smaller state parks (Anasazi State Park Museum, Escalante Petrified Forest State Park, Otter Creek State Park, and Piute State Park).

The result is a booming three season tourist industry with food service and accommodations as the dominant employers in the county. The more traditional ranching and farming also continue to be prevalent. But while the farm sector is significantly overrepresented in Garfield County nationally as well as at the state level, little of the products and food produced are utilized and consumed locally, leaving 35% of the population within what the United States Department of Agriculture (USDA) designates as “low access” to healthy food. Low access to healthy food is defined as “more than 1 mile from a supermarket or large grocery store in urban areas and as more than 10 miles from a supermarket or large grocery store in rural areas” (ERS 2014) With the rural nature of this county, and just 4 grocery stores, many must travel great distances to obtain food through “traditional” means (i.e. from a grocery store, usually a chain).

Food Access:

Table 2: Food Access in Garfield County, Utah 2014

Population, low access to store (%), 2010	35%
Low income & low access to store (%), 2010	11%

Source: USDA 2014a

Additionally, U S Department of Agriculture (USDA) Economic Research Service (ERS) data shows that local food is not widely available. There are just two farmers' markets in the county, one in Boulder and one in Escalante, and these operate on a very limited seasonal basis. (USDA 2014b) Like many rural places, agriculture as a means to support the local population has been in decline for some time. While the ERS shows the county has 275 farms (or one per

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18.5 people), just 6.6% of those farms sell food for direct human consumption. This is even more significant considering that those farms likely do not sell locally.

Reflecting national trends once again, aging-out is of concern for Garfield County farmers. Nationally, the number of farmers over 65 grew by 22% between 2002 and 2007 and continues to increase. The fear is that as these farmers age out the US will experience a decline in food production (in a time when an increase in production is needed). Garfield County ERS data shows that an alarming 37.1% of its farmers are of retirement age. Fewer farmers means less food production and decreased food security. (USDA 2014a)

Table 3: Agricultural Statistics for Garfield County, Utah 2007

Number of farms	275
Farms with direct sales for human consumption	6.6%
Farms with sales less than \$10,000	68.7%
Farms with principle operators over 65 years	37.1%

Source: USDA 2014a

Boulder Town, Utah:

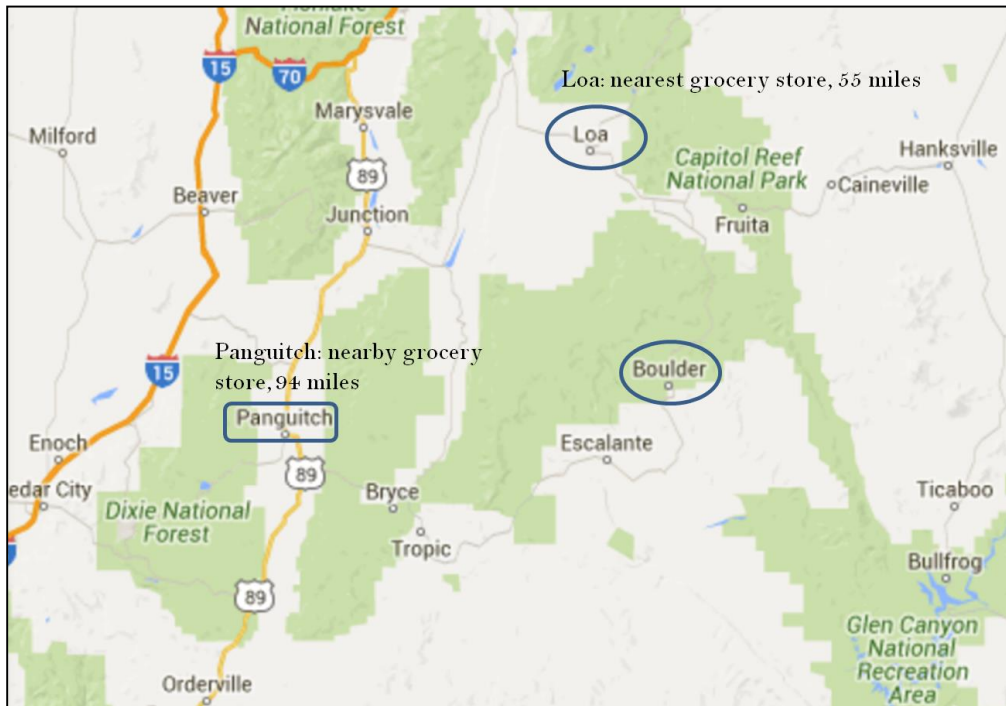
The isolation of Boulder Town is significant even by rural standards. Panguitch, the county seat of Garfield County, sits 95 miles to the west of Boulder town. Joe's Main Street Market is the only grocery store in Panguitch. Otherwise, there is the moderately-sized Food Town market in Loa, a town in adjoining Wayne County, 52 miles away. Richfield, the county seat for the next-door county of Wayne has a Walmart Superstore and a Fresh Food supermarket. Richfield is 98 miles from Boulder Town. Escalante is the closest town to Boulder, located 28 miles away² and is home to a small natural foods store as well as a few medium-sized

² Distances derived from Google Maps. Food outlets locations derived from personal experience and Google Maps.

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convenience stores. Boulder Town itself has two small convenience store/gas stations, one of which is quite possibly the only health food/convenience store/gas station in the nation.

Figure 2: Map of Boulder Town, Utah and Surrounding Area, 2015



Source: University of Utah Digital Library. Utah's Counties: Map of Boulder and surrounding area. <http://www.utah.gov/government/countymap.html>. Accessed 11.15.2015

Not surprisingly, due to the large-scale nature of national databases, much less data exists for a town as small and as isolated as Boulder.

Table 4: Demographics for Boulder Town, Utah 2010

Total Population	226
Median Age	45
Total Households	99

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Family Households	57
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Source: U.S. Census Bureau. 2010 Census. American Fact Finder Profile of General Population and Housing Characteristics. Available at <http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>. Accessed 11/12/2014.

Table 5: Economic Statistics for Boulder Town, Utah 2013

Median Household Income	\$49, 583
Percentage of People Living Under the Poverty Line	5.3%
Dominant Employment Industries	(Agriculture, forestry, fishing and hunting, and mining and Arts, entertainment) and (recreation, and accommodation and food services)

Source: U.S. Census Bureau. 2013. American Fact Finder 2012, 5 year estimates, selected economic data. Available at <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t#none>. Accessed 11/12/2014.

Boulder Town is very small and very isolated by modern US criteria (as well as by global standards). For this and other reasons it is unique. Geographically, Boulder is a high desert in a semi-arid climate and receives between 10 and 12 inches of rainfall a year. To its agricultural advantage, however, Boulder is tucked into the southern side of Boulder Mountain which rises to over 11,000 feet. This isolated mountain cluster receives ample precipitation that then runs down to feed the irrigation ditches that give life to the fields in town as well as powers the town's own small-scale hydroelectric dam that provides electricity to the entire community.

The proximity of Boulder Town to the mountain is no accident. Sitting between two distinct ecosystems provides the advantage of increased ecological diversity as organisms between ecosystems react. For example, residents can live in the warmth of the desert while hunting for deer and gathering firewood on the mountain. Most significant, however, the water running off Boulder Mountain creates the anomaly of providing ample water to the desert climate below. Journalist Alexandra Fuller paints a picture,

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“The town reclines on a long, south-facing slope — warm enough, at about 6,700 feet, to allow residents to grow their own vegetables, which is just as well because that’s their only hope for fresh produce. With a stream fed from snowmelt off Boulder Mountain, it is, for miles around, the most logical place to make a year-round home — which is why, when Mormon settlers arrived in the late 1880s and began to create irrigation ditches where it made sense to do so, they found that they were following ditches dug in the 12th century by the Anasazi (also known as the Ancestral Pueblo).” (Fuller 2009)

Boulder is also socially and culturally unique as Boulder residents have a distinctly unusual commitment to community and self-sufficiency. Among many other events, the town hosts a Heritage Festival every August to recognize the rich history and celebrate the local culture. Furthermore, residents have formed a community organization called The Boulder Heritage Skills Foundation to retain knowledge of self-reliance skills. Many of these skills aid in the local procurement and processing of food so as to depend year round solely off of local resources. The Boulder Heritage Skills Foundation hosts a harvest festival every fall where craftspeople share their trades with the community. Artisans and crafts people come from all over the region to host workshops and network. In the past these have included, canning, fermenting, blacksmithing, knife sharpening, bee keeping, tree-pruning, winnowing, mushroom farming and soap making among many others.

The town prides itself on its tight knit community which, besides hosting these various events, sustains a comprehensive, inclusive, and active local government (i.e. Town Council, Planning Commission, Water Board, Business Council, etc...) Living in such isolation and thus in close quarters with the larger ecosystem has left a mark on the community. Many of the measures passed by the town, and passions held firm by the local citizens support ecological restoration and conservation. Many farmers and ranchers use ecologically sound practices and the two restaurants in town proudly serve locally procured (and thus more sustainable) produce whenever possible. One example of collective ecological practices reflects some of the town's

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values: the shoulder of the only state road in town is mowed by the town at its own expense rather than having the county spray for weeds, at no cost, in order to avoid pesticide use in public spaces. And recently, as the roadside was disrupted to put in a new water pipe, the Heritage Skills Foundation organized folks to gather seeds and hosted a seed -ball building event in order to replant native plants on the roadsides.

This cooperation in a tight-knit yet diverse community is a special accomplishment considering the variety of backgrounds that comprise the residents of Boulder Town. The decedents of the original Mormon pioneers and newcomers, many of them of the “new age” persuasion, make an effort to focus on their commonalities to maintain a strong community. The Mormon Church's first Sunday-of-the-month potluck, for example, is attended by all members of the community regardless of their religious affiliations.

Additional town interconnection is provided in the form of a community listserv called “pegboard” after its founder Peggy Smith. She receives emails and then forwards them to whomever has requested to be added to her email list (She says she now has many people in the towns surrounding Boulder as well). In the spirit of community cohesiveness Peggy offers this service with a few guidelines, the most important being that she will not forward any emails containing strong or polarizing viewpoints, political agendas or potentially controversial content. Because of this, Pegboard is an exceptionally useful and well-utilized tool for the community. An analysis of Pegboard since February 14th 2015 revealed 7 categories of emails: Events, Food and Agriculture, For Sale and Free, Labor and Help Wanted, Pick-ups/Rides/Deliveries, Public Notice, and Wanted: Tools/Trade.

This brief analysis gives insight into the community and everyday life in Boulder. “Events” had the most emails (188) and includes everything from writing workshops to holiday

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celebrations at the elementary school to craft events at the LDS church. Also included in this section are announcements for local government and organization meetings. “Food and Agriculture”(with 71 emails) included people looking for hay, selling produce, eggs, bread and pastries, and farm animals as well as reminders to sign up for Bountiful Baskets (more information on Bountiful Baskets below), and notices from the local convenience store when they received a dairy shipment. “For Sale and Free”(with 63 emails) ranged from people selling tanned hides, to getting rid of roosters, to selling bikes, trailers or homemade lotions and tinctures. “Labor and Help Wanted” had the fewest emails (14) which goes to show how hard it is to get employment in the area. This category included notices of job openings in Boulder as well as Escalante, someone seeking piano tuner help, pet sitting, and computer repair. “Pick-ups, Rides and Deliveries”(with 68 emails) is dominated by people seeking to have things they have called-in to be picked up at the hardware store either in Loa (45 minutes away) or Escalante (30 min away), people also request ride shares to Salt Lake (usually to go to the airport) and to the mechanic in Loa. “Public Notice,”(with 123 emails) includes the irrigation report that comes every couple of weeks during the growing season, lost and found, changing hours of local businesses as well as minutes from Planning Commission meetings and other local governmental and organizational happenings. Finally, in “Wanted, Tools and Trade” the 72 emails comprise of an eclectic mixture of requests for everything from black lights to furniture to cell phone chargers. Besides its obvious service, Pegboard obliges a deeper function in that it provides an avenue for people to feel supported by their community; it connects everyone, but it also provides a feeling of belonging and inclusion (especially for relative newcomers). Most simply, Pegboard makes community involvement easy.

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Of last consideration, as it is something of a tourist town, many second homes exist in Boulder. This means that the population holds many part-time, summer residents. While locals are unmatched in their acceptance and hospitality towards even the most transient individuals, this part-time participation in many ways takes a toll on the town. Manifestations of this include the acquisition of water rights that may go unutilized, land that may lay fallow and housing costs that may exceed the buying power of local residents. Additionally, the presence of a substantial second-home real estate market has driven up the price of land. On top of that, building a home in such a rural area is much more expensive than in an urban area closer to resources and skilled professionals. Boulder is currently in the midst of a housing crunch. Many year-round residents of Boulder therefore rent space or are caretakers on land that is not their own. This greatly decreases their ability to grow food for themselves and may also decrease their ability to process and store food as well. I should know, my family and I have been absentee land-owners for about 15 years. For that, and other reasons, my interest in Boulder is personal. On top of being a co-landowner, over the last three years I have lived there off and on, becoming increasingly fascinated by the diversity and commitment of the community while working in agriculture and food service.

To that end, Boulder, as a case study, is distinctive in the extent of its rural nature, history, social fabric of mixed beliefs, location in a tourist-rich area and the extent to which many residents have made an effort to improve the community food system. With this in mind, I designed this study to be both embedded in Boulder but also to be easily adapted to other small rural communities for future studies.

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METHODOLOGICAL APPROACH AND JUSTIFICATION

This critical-systems theory case study used a mixed methods approach. Mixed methods allowed for the casting of both a wide net to understand community-wide experiences with food acquisition, while also delving deeper with key informants into the ins-and-outs of Boulder's food networks and community food security. The survey provided a general idea of how people are obtaining food and what percentage of it is of local origin. The survey additionally gave an idea of how committed to food-system reform the community is as a whole. The key informant interviews went more in-depth into the inner workings and experiences of how food is brought to the town, as well as exposes the key informants' (i.e. community food producers and distributors) specific individual and collective efforts to become as self-sufficient and food secure as possible.

Because of the low population of my study area, I was able to conduct a census whereby every household received a survey. I asked that the adult from the household with the most recent birthday complete the survey. The survey was sent to all Boulder PO boxes (residents in Boulder do not receive USPS home delivery service). The use of PO boxes provided the advantage of selecting solely those who are full-time Boulder residents and excludes summer residents who may have second homes in the area.

A short survey of 29 questions was sent to every household (The 2010 census reported 99 households) in June of 2015. Following the Dillman³ method, I began by sending an introductory email to the community listserv (pegboard). This provided a heads-up to residents that they will be receiving a survey in the mail and that they may choose to take the survey on-line instead, giving them more information about the study, and providing them the chance to ask questions. An added perk is that use of this listserv makes me something of an "insider" to the community.

³Dillman, D., Smyth, J. & Christian, L. (2009). *Internet, Mail, and Mixed-Mode Surveys*. John Wiley & Sons.

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Next, for participants preferring the on-line option, I emailed them individual emails with unique IP addresses to Qualtrics (on-line version). Respondents were asked to provide their PO box number when completing the web survey in order to keep track of respondents and be sure they were not mailed a survey. After giving the on-line respondents a few days to complete the survey, I mailed one, hand-addressed and stamped survey and return envelope, to each PO Box in Boulder Town, Utah (with the exception of the on-line respondents), a total of 209⁴.

After a week, I sent out a reminder email to the community urging them to complete the survey and thanking those who already had. A month later, I sent out a final email with a final encouragement to fill out the surveys. These emails additionally gave the community another chance to gain more information. In these emails, I informed the community of my intention to share my findings upon the conclusion of my study. Four surveys were returned opened but incomplete or blank, 29 surveys were returned because no one owns the PO box.

Ultimately, I received 10 fully completed on-line surveys and 33 paper surveys totaling 43 responses. As of the 2010 census there were 99 households in Boulder Town, thus giving me close to a 44% response rate (43.6%). Additionally, 5 households indicated that they would like to be contacted to provide more information. After following up with one such request I was able to secure an additional interview. That left 143 surveys unaccounted for. I suspect many were sent redundantly to both someone's business and home PO box. Other reasons for non-response may include, disinterest and lack of time. Surprisingly, while visiting Boulder after the survey was closed, many acquaintances expressed that they would have filled out the survey if they had known it was my survey and that they otherwise had a policy of ignoring surveys. I found this

⁴there is some redundancy in PO boxes as some folks have both one for home and one for business. I expect that few to no people would elect to complete the survey twice

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surprising as my name appeared in every email and in the introduction to the survey. That being said, I intentionally did not provide information pertaining to my specific social connections in town as not to introduce bias. It looks as though that approach was successful.

My position as a landowner and part-time member of the community provides me with familiarity with the social construction of the town and relative access to interview a variety of residents. I then contacted a few members of the community involved in the food system in different ways and requested an interview. I received both rejections and non-responses from a few folks but was ultimately able to interview four key people. A farmer, the managers of a health-food store/gas station that also organizes the bulk buying in town, and an herbalist with substantial experience working in food co-ops who is passionate about food sourcing. Additionally, a few members of the community, after filling out the survey chose to be contacted to provide more information, or chose to provide more information in reaction to my survey via email.

My familiarity of the Community also allowed for the utilization of both current and many years of accumulated observational data (or the described reality as seen by the researcher). Casual conversations and interactions are included under this method. Similarly, Pegboard, the local listserv, likewise proved an invaluable insight into community events and a window into everyday life in Boulder. I collected and categorized these community emails and used this data to aid my research (as seen above).

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DATA ANALYSIS AND INTERPRETATION

While the analysis of in-depth interviews was qualitative, the survey was quantitatively analyzed using both descriptive statistics. Using a statistical program (STATA), the survey data were coded and then summary statistics and graphical analysis was used to describe responses to the various survey questions. The survey provides a set of potential explanations of differences in individual household use of locally sourced food. These factors include demographic characteristics (number of household members, age of respondent, years lived in Boulder Town), attitudes toward store-bought food price and quality, attitude towards the quality and ease of access to locally sourced food, personal food-related activities (gardening, hunting etc.), whether or not the household runs cattle, and the sources of store-bought food.

In addition to this central model designed to identify the relative importance of demographic, heritage, access and attitudinal factors in determining the percentage of food locally source, the data was analyzed to identify what factors lead to the respondent being satisfied with shopping or locally sourcing food. Here simple graphical analysis was used showing for each primary source of groceries (convenience store, grocery store, big box, bulk order) the degree to which the participant is satisfied with the price and quality of this store-bought food. Because one of the purposes of this research is to provide useful information to Boulder residents, an effort was made to use the most transparent and appropriate statistical methods. An emphasis was placed on descriptions of the data and statistical tests that are amenable to graphical and intuitive interpretations.

In-depth interviews were audio recorded and later transcribed by the researcher. The purpose of the interviews was to gain further information into the details of the Boulder food

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system and individual and community aspirations for the future. Upon completion of the survey, the results were presented to the community via a presentation at the community's annual Harvest Festival. For those that could not attend, the results were made available on the local listserv as well as posted on the community bulletin board next to the post office. (I provide more detail into the community's reception of my presentation below.)

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LIMITATIONS AND CONSIDERATIONS

As with any focused survey and study, this one had its own set of shortcomings. Some feedback came from residents during the survey or after my presentation while other considerations regard definitions and clarifications.

My first feedback came upon sending the survey out for the first time. I received an email from a resident expressing concern that I did not account for food grown or procured from neighbors and friends and/or shared meals. While I understand the desire to better express and account for the many threads binding this community together, it is very difficult, academically, to measure such things. And likewise, it would take an entire study to delve into the many local trading avenues. The goal of this paper was to merely recognize that such avenues exist and are practiced by rural folks (as larger national databases and research does not account for such trading as a food procurement strategy). This did, however, express itself as a minor glitch in the survey for a few respondents who did not have a cow that they milk themselves but milk their neighbors, or trade their neighbors for eggs and so on. And while there were only three of these cases expressed by respondents on the survey, with my experience in the town I know that many more people trade than the survey showed. I wonder if I had worked trade relationships into the survey more I could have gathered some data on this avenue?

On the other hand, the surprising advantage to conducting this survey was the anonymity and neutrality that it provided. I had not anticipated how important this would be to a small community. Small rural communities are notorious for having complex social networks and while these often act as safety nets they, at times, may hinder development or change because people are very resistant to making waves. If you do not know somebody rather intimately it can

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be very difficult to understand how they really feel. As a result, despite the close-knit feeling of this community, Boulder lacks a larger understanding of its culture as a whole, or what the collective conscious looks like (This then shows how and why there exists such a rift between producers and consumers in the area. They simply do not discuss their needs and desires in a town-wide forum). This survey then, filled this void. People were very interested in the results, to the extent that I was invited to come down and present my findings at the community Harvest Festival. I also received a number of inquiries from those that could not attend the presentation. Ultimately, many expressed that they learned a great deal about their community through the survey.

Clarifications:

In contrast to many food researchers, I intentionally avoided discussing food sourcing in terms of healthy vs. unhealthy. Using such a weighted and controversial term would deviate from my intended focus and discussion. The current complexity of what is considered “healthy” and “unhealthy” is too large a topic itself to include in a study of this size. That being said, I strongly believe, that home grown and procured foods (calories aside) are much more nutrient rich and less processed than foods available from the industrial food complex. Additionally, as access to fresh, unprocessed produce year-round is identified further on as a barrier in the Boulder food system, “health” is woven into this study of rural food procurement but not formally included.

Similar to my omission of defining “healthy” I additionally chose not to assess food procurement in relation to income. Given that my study was a census I had one shot to get a statistically significant response rate with this community. Because of this I chose to not include sensitive questions that may cause respondents to toss the survey or upset them. Whitley explains

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that obstacle further “As previous rural poverty researchers have suggested, sparsely populated rural counties...can be difficult to study because residents may be reluctant to discuss personal details with outsiders.”(2013, 42). Considering the size and nature of my study I chose to not include this but to solely focus on avenues of procuring food regardless of income.

A note on the use of the word “local”

Another weighted, controversial and over-used term in food studies and popular culture today is “local.” Given the varying definitions and mainstream use of this term I made an effort to avoid using it in this survey. To better understand the rural perspective, however, I asked interviewees and attendees at my presentation how they defined “local.” They too felt fatigued by its lavish use. All the interviewees defined local as much more limited than the definitions thrown around by the USDA and popular culture writers. To give examples, Barbara Kingsolver in her book Animal, Vegetable, Miracle (2007) defines “local” to be 120 miles. She and her family ate from within this radius for a year. Gary Nabhan, in his genre-defining book Coming Home to Eat: The Pleasures and Politics of Local Foods identifies “local” food as sourced from a radius of 250mi (2002). Next, the New Oxford Dictionary defines a “locavore” as a person who obtains food from within 100 miles of where they live (the most restrictive definition I have found). Finally, the 2008 USDA Farm Act defines “local” as within 400mi (Martinez et al. 2010), the largest radius I found in my research. All of these definitions have debilitating limitations, roadways and trade routes being only a small part of a lengthy list of critiques. To over simplify an overly-simplified term, I find the rhetoric of “local” to be limiting in its attempt to describe nearness and origins of food. Like the residents of Boulder who I interviewed, I prefer specific terms such as southern Utah grown, Boulder grown, Southwestern grown, and regionally grown to pinpoint the origins of foodstuffs. I used those terms as much as possible in

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this research in place of, “local”, to describe the source of food. It seemed only fitting to use language the residents of Boulder use themselves to describe their food system. I speculate that some of the aversion to identifying “local” as simply a large radius is rooted in a pride for the food and products their small hamlet provides. Below, the survey results augment this idea of pride and intentionality expressed through avenues of food procurement.

“self-sufficiency” vs “self-reliance:”

The motley collection of cultures and backgrounds that make up the community of Boulder, as discussed above, make every effort to have a cohesive community. In this effort community members found that the use of specific language significantly impacts community engagement and cohesiveness concerning many issues. One of those issues being their food system. Liberals found early on that LDS or Mormon community in-town felt adverse to “sustainability” likely due to its over-use in the liberal mainstream. They ultimately found that “self-sufficiency” while evoking similar lifestyle choices and end goal was a term everyone could agree on. For this reason, I chose to use this term in the survey. I also, however, throughout this paper utilize the term “self-reliance”, a synonym to “self-sufficiency” but more commonly used in the mainstream and academic sphere. While I use them a bit interchangeably I make an effort to utilize “self-sufficiency” only conjunction with specific comments from residents or when referring to specific questions in the survey.

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FINDINGS

People are motivated, influenced, and bound by a mind-bending number of factors that ultimately determine what they eat. This research focuses its attention on one small factor of consumption: sourcing. From where do the residents of Boulder Town, Utah procure their food and what determines those choices? Considering the often-limited options presented to the rural population within the US, are residents satisfied with those sources? And considering the ultimate goal to ameliorate the Boulder community food system, what would the residents change? Below is the basic analysis of both the response to the Boulder community food Survey as well as tidbits from both observational data and interviews.

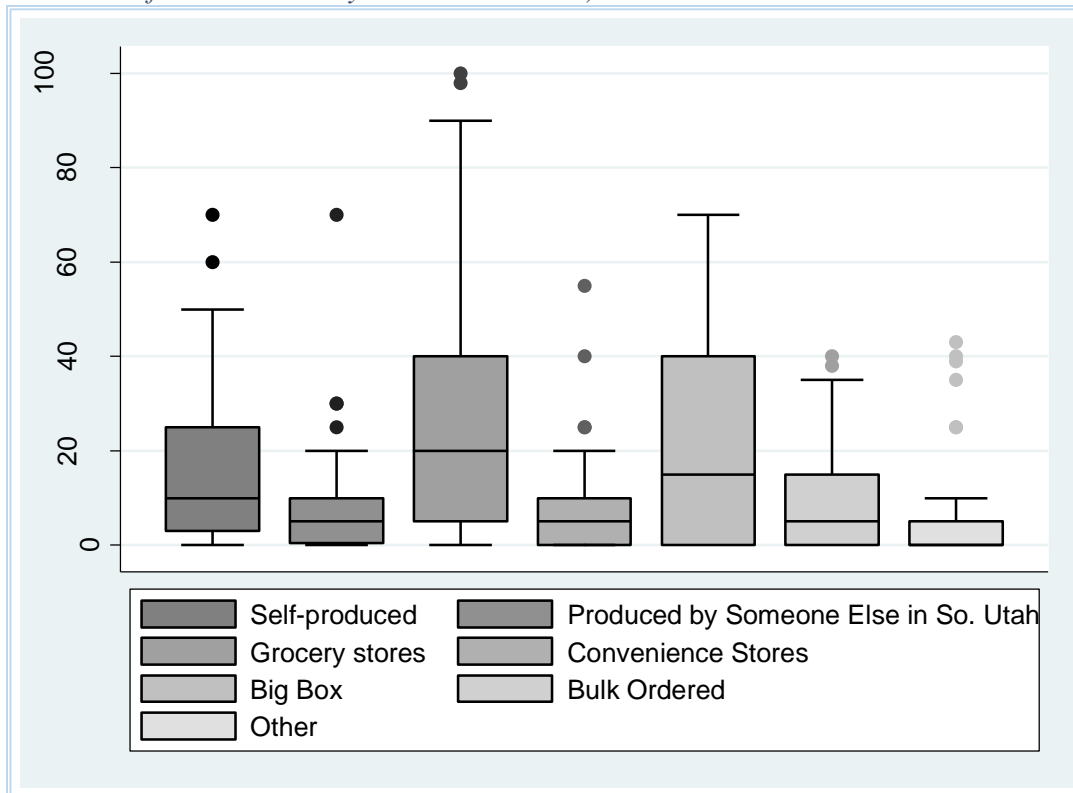
The Present State of Food Acquisition:

Residents of Boulder Town, Utah use a variety of strategies to procure food from their isolated location. To begin, they make infrequent trips to the grocery store. Responses to the question “How often do you shop at a grocery store?” varied from every 7 days to 90 days. By far the most common response, however, was every 30 days. Just over half (50.6%) of their food comes from such shopping trips. On these trips they also stop at big box stores that allow them to buy food items in bulk (thus allowing such a gap between ventures) 22% of respondents' food come from this source on average. Home and/or southern Utah production is the next most significant food source for respondents. While those living in urban areas many not have the space and resources to grow a large percentage of their own food, this rural community still depends (16.8% worth) on self-produced foods and 9.6% on foods produced by someone else in southern Utah. Bulk ordering from the food trucks that supply the local convenience stores and

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restaurants is another option (not often available in urban areas) that allows residents access to commodities as well as exotics that might not be available in stores. These goods are conveniently delivered to Boulder thus saving residents the long drive to Big Box stores and grocery outlets in urban centers. Boulderites source 8.9% of their food from bulk order. Lastly, there are few other avenues that respondents cited under the “other” category (6%), these include Bountiful Baskets (details on this program are expanded upon below) and Online-ordering.

Figure 3: Boxplot showing the distribution of the percent of all food obtained through alternative strategies by 44 households responding, Boulder Town, Utah 2015. (Note: the boxes shows the 25th 50th and 75th percentiles for each strategy’s distribution while the whiskers show 1.5 times the distance between the 75th and the 25th percentiles—or less when bounded by the horizontal axis. The dots reflect outliers beyond the whiskers.)



While food acquisition is dominated by grocery stores and big box stores (e.g. Walmart, Costco etc.), self-production is the third most important source of food and bulk order is the

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fourth most important food source. Note that two households rely entirely on grocery stores while two others rely 60% or more on self-production of food.

The “Other” category was divided between two categories of write-in responses, Bountiful Baskets and health food stores getting three mentions each. Bountiful Baskets is a biweekly operation where residents can order a variety of mostly commercial produced “seconds” that they help sort into boxes at the pick up every other Saturday. This business advertises as a community supported food source but further research reveals that they operate all over the western US and are connected to an expansive food warehouse in Arizona. The town is very divided in their support of this program. Some have much enthusiasm for the program's ability to deliver fresh produce year-round, others note it as the reason that local producers are suffering. The influx of cheap commercial produce discourages residents from purchasing seasonal produce from their local producers. One resident noted particularly low attendance at the community market this year, which coincides with the growing participation in the Bountiful Baskets program. Another resident went so far as to research the program and trace where the food came from (a difficult task as the program is quite secretive) and present the findings to the community in an effort to discourage participation. Basket pickup is the same time and day as the community market. Given the small population of the town it is necessary for as many people as possible to commit to locally produced foods to make growing them viable. Even just the handful of folks now using this outside service seem to have made a negative market impact to local producers. The low price and convenience of the Bountiful Baskets program provides tough competition for local vendors. This is where the question of importance of consuming local foods really comes into play versus just access to produce year round. Other responses in the

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“other” category were amazon.com free delivery, a specific producer in northern Utah, dining out at restaurants, potlucks, and dinner parties.

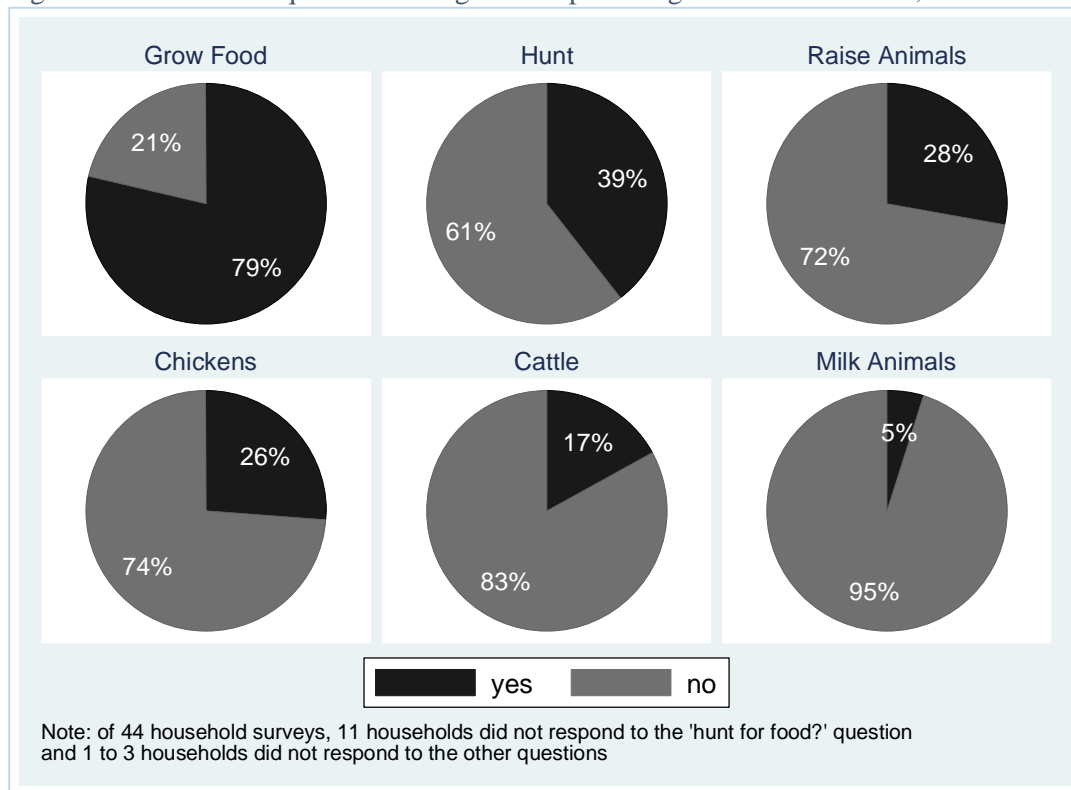
To summarize, infrequent trips to urban centers to purchase groceries from big box and grocery stores dominates the food procurement in Boulder. Next, however, is self-produced food and food produced by someone else in Southern Utah. The next survey questions tease out exactly what people were growing and producing themselves, and in what quantity.

Strategies for Local Food Production:

In order to determine what activities (human capital techniques) residents were using to augment their food supply I asked them a number of questions regarding home food production. Residents were asked if they grow food (vegetables and fruit) and on how many acres, if they run cattle, have a dairy cow, have other animals for meat (pigs, goats, sheep etc..), have non-cow animals for dairy, have chickens for eggs and whether they hunt for food. The graph below shows the percentages of respondents engaged in the various home production strategies. Additionally, respondents self-reported on what and how much they grow: 11 people have small vegetable and herb gardens, 9 people have large vegetable and herb gardens, 4 people have more than 1 acre in vegetable production, and 8 people have fruit trees, and 2 have greenhouses.

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Figure 4: Local food acquisition strategies with percentages in Boulder Town, Utah 2015



Despite the high number of respondents who reported growing at least some of their own food, for the majority of residents, home-grown and self-produced foods contribute thinly to their self-reliance. While 79% of respondents reported growing some of their own produce, this strategy only accumulated to, at most, 22% of their total consumption. This shows that these food procurement strategies only augment their procurement of bulk calories from big box stores and grocery stores. These home gardens and orchards however, likely contribute a significant percentage of the fresh produce consumed by residents (based upon the availability of produce from local vendors of commercial produce). However, a further study on the percentages of local produce consumed in relation to commercial produce would concretely answer this question. It should be noted, however, that two of the households that responded are well on their way to achieving self-sufficiency through a mixture of both growing their own and trading with other

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local producers. Two interviewees expressed that, if need be, they could be self-sufficient, but as long as they are able to order “exotics” such as coffee, olive oil, tea and citrus fruits they will continue to do so for pleasure, convenience, and to have a more varied diet.

To add, the accumulation of personal production of foods may only slightly increase the community’s self-reliance. While the existence of home vegetable gardens does provide valuable nutrients and increases the relative resiliency of the local food system, it not only is not a significant source of calories, it does not provide diversity to the over-all system. For the most part, home-producers are growing the same handful of vegetable crops and orchards are producing the same handful of fruit varieties. As of yet, there are not producers of dry goods, or crops of more calorically substantial foods, for example, grains, dry beans, potatoes, or even winter squash. Additionally, the lack of a dairy producer as well as meat producer that consistently provides for the community are of concern. The prevalence of egg producing chickens, however, is hopeful and important in providing fat, protein and B vitamins. Specifically, one interviewee noted the lack of a good vegetarian fat source as a roadblock to community food self-reliance. The Heritage Skills Foundation, in an effort to find a solution, recently purchased an oil press. Members of the group are now experimenting with a few oil crops (namely flax and black sunflower) to find one that both grows well in the area and produces enough oil to be economically viable. Thus far, however, experiments with cultivating sunflowers have been unsuccessful.

These shortcomings in providing a well-rounded Boulder-produced diet will only be ameliorated given a vested interest from the community. Food choices will need to shift from determined by solely habit, convenience and price to include a commitment to community as

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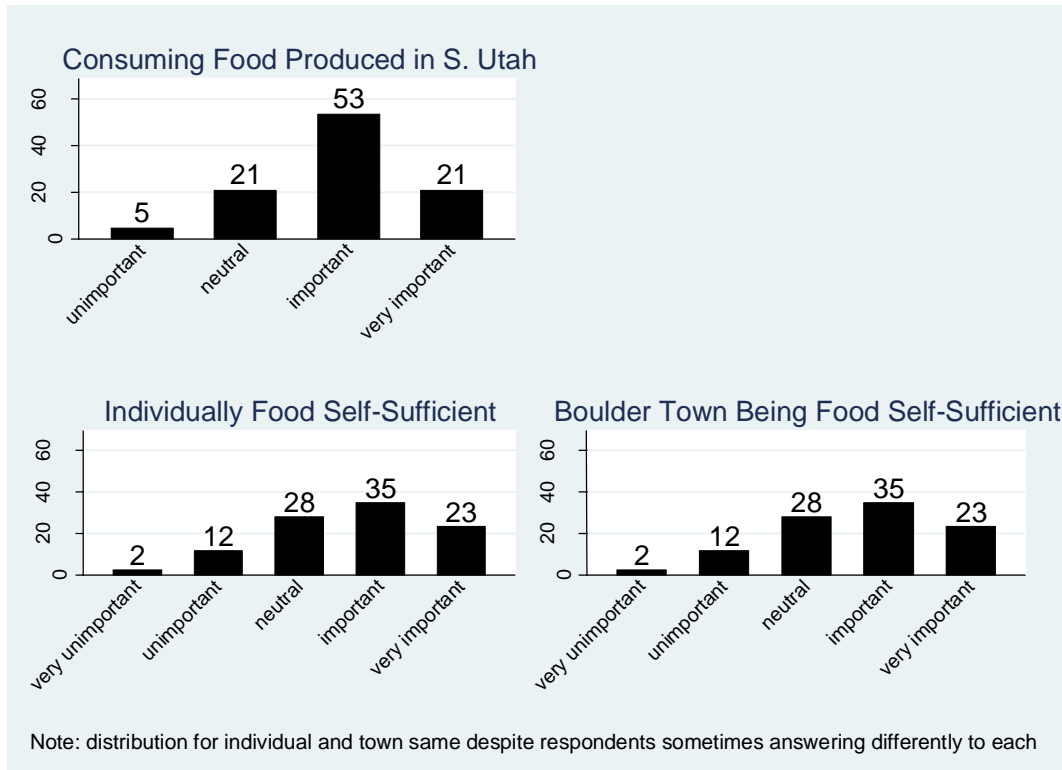
well as commitment to both town and personal self-reliance. The next set of survey questions inquired into resident's satisfaction with Boulder and Southern Utah produced foods as well as the significance they feel towards self-reliance.

Personal Self-reliance and Community Self-reliance

In collecting data concerning the importance residents feel towards self-reliance as well as attitudes towards regionally produced foods, one may speculate as to the momentum and support for the improvement of the current food system to a more community-based network. Interestingly, when asked about how important they felt personal and community self-reliance were, residents felt exactly the same about each. Although individual responses varied, the overall numbers coincidentally were exactly the same; and overall the majority (58%) of respondents felt that both personal self-reliance and community self-reliance were either important or very important. Just 14% felt that they were either unimportant or very unimportant.

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Figure 5: Importance of local acquisition and individual and local self-reliance: percent distribution from very unimportant to very important in Boulder Town, Utah, 2015



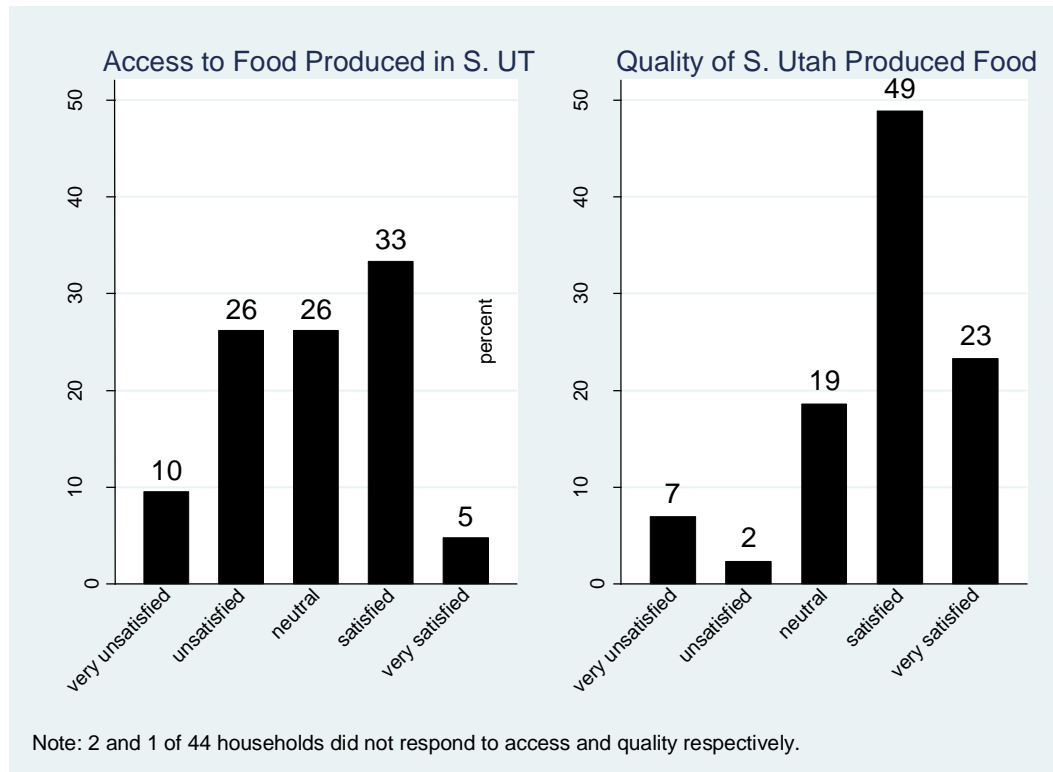
Comparing this data with that of the first question, it is clear that fewer people are consuming southern Utah produced food than find importance in it. Additionally, many more people find individual and community self-reliance to be more important than the consumption of Southern-Utah produced foods. This data suggests that if more food produced in southern Utah were available to Boulder residents, they would consume it.

Satisfaction

The measure of satisfaction is important in understanding to what extent the community would welcome improvements to their food system.

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Figure 6: Level of satisfaction with access and quality of food in Southern Utah felt by residents of Boulder Town, Utah 2015



Satisfaction of residents' ability to acquire locally produced food is fairly equally divided between levels of satisfaction and un-satisfaction. Of respondents, 38% are either satisfied or very satisfied with their access while 36% are unsatisfied or very unsatisfied. The remaining 26% are neutral. This may suggest that those who find value in consuming food produced in southern Utah are able to procure it but it is not necessarily available to the general public or newcomers to the area. For example, one interviewee expressed surprise when informed that many people felt there was little access to local meat. "They just need to ask somebody" said the interviewee, as her community experience suggested that ample meat was available in town. This meat, however, cannot be sold commercially because of strict USDA regulations and is thus traded.

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When asked about the quality of the southern Utah produced food they had access to and consumed, however, respondents overwhelmingly responded that they were satisfied (49%) or very satisfied (23 %). Just 9% were dissatisfied or very dissatisfied and 19% were neutral. These numbers reflect positively on local producers and suggest that if they were able to increase production there are a number of happy customers who may be willing to acquire more quality food stuffs from them. Could local production increase? Would feelings of satisfaction and importance of food security translate into financial support for the community? These questions linger.

Examining Local Consumption

During harvest season, locally grown and produced food abound in Boulder Town. However, seasonality is a big issue in this region. Geographically, Boulder is set in a high desert, a climate with a relatively short growing season. Boulder is a town that relies on both the tourist industry and agriculture. These respective industries, in this climate, are at the mercy of Mother Nature. The town almost entirely shuts down in the winter, or, more precisely, the time between Halloween and mid-March. Both grocery stores close, the gas stations go to very limited hours, and many residents take the opportunity to travel. For the local food system this means producers lose many potential consumers in the off-season, in addition to the climatic/biological challenges of a short season. This is why many respondents noted greenhouses as a possible tool to increase regional food consumption in the community. As of now, residents staying through the winter must purchase outside food during this off season if they have not themselves preserved enough food for the winter season.

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Road Blocks: Why are rural people not consuming regionally produced food?

When prompted to describe what they would change about their current food system, the respondents to the Boulder Community Food Survey identified a variety of road blocks to consuming more southern Utah-produced food. Their responses are as follows. Ten people expressed the desire for fresh produce year round. Five of those folks targeted greenhouses for season extension of local produce, and two of those people suggested a community greenhouse. Seven people want better access to locally grown meat and/or dairy (2 of those folks cited laws in place that make this difficult). One person talked about the lack of beans (as vegan protein) grown in Boulder as well as grain. Eleven people wrote about their desire for better food retail options in the area, whether it be a new grocery outlet or just improving the ones in Boulder and Loa to provide more fresh produce (many would like this produce to be local). Seven people felt that more resources and space for food growing(4), processing (2) and storage(3) as well as education and outreach (1) are needed.

In summary, people cited possible changes in the following to improve their local food system: more greenhouses, more locally produced meat and dairy, better local food acquisition options, more resources and space to produce, store and preserve home grown food, more local producers and the implementation of a food co-op. These results in conjunction with observational and interview data lead to the conclusion: producers feel a lack of demand for their products. They fear that consumption will not support an increase in their production. Conversely, consumers do not feel the local market is sufficient to meet their needs.

While the interviews provided limited data and contributed only sparingly to the data above, it was through these conversations that I discovered sentiments regarding community

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support and was introduced to the social complexities of the community, often creating substantial road blocks to change. Likewise, interviewees elaborated on their hopes and projects they seek to implement to improve the towns food access. With the contribution of the interviews alongside survey and observational data, it becomes clear that there currently exists no two-way avenue of communication between producers and consumers. Producers often advertise their products on Pegboard but rarely receive feedback. Likewise, consumers do not have a platform on which to express their needs and desires, many of which producers could easily manage including the addition of specific plant varieties. Other changes would take considerable community support to implement. Meat, dairy and grain are examples, as the unavailability of milk and meat is partly due to the extensive and hindering regulations required by the USDA to commercially produce and distribute dairy and meat products. One of the few local farmers who has a personal dairy cow expressed deep hesitation to expanding her business noting that for a dairy operation of just a handful of cows, the expense of being certified is much too steep. To add, that initial investment appears even greater due to the uncertainty of support from local consumers. Hunting, another possible source of self-procured meat, is also suffering. Survey results showed that many more respondents express a desire to hunt than are able to regularly bag animals. A few noted that they are beginner hunters or wished that they had more time and resources to achieve their desired outcome (usually 1-2 animals a season). Personal experience, as well as knowledge of the existence of an outdoor survival school in the town, however, suggests that hunting opportunities may actually be quite sufficient in the area. Again, communication, in this case between the proficient and the novices, may be lacking.

Given its agriculture heritage, satisfaction with regionally produced foods and the significance of self-reliance, Boulder and Southern Utah produced foods theoretically could

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provide the majority of food procured by Boulder residents. The data, however, shows that the majority of food is currently sourced from outside Boulder. While outside factors including meat and dairy regulations and the consolidation and centralization of food outlets greatly influence what is available to these rural residents, much improvement can be made at the community level to achieve a variety of improvements to the Boulder food systems.

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DISCUSSION

If the costs of gas and food increase Boulder Town could be left in a pinch to have enough food. An increase in local food production is both a wise and an obvious solution, given the region's agricultural potential and the importance and satisfaction residents have with foods produced in Southern Utah and in their own small hamlet of Boulder.

Despite high interest and significance felt towards Southern Utah produced foods and both individual and community food self-reliance in interviews and conversation, residents producing food for others expressed that they were unable to sell all that they produced and that there was not a large enough market for their products. They reported returning home with substantial amounts of produce after the Saturday Community Market, as well as low sales for many items at their farm stands and through trade connections.

This looks like a rift in communication and trust. Producers need to feel confident that if they produce the food stuffs that they will be supported by the consumers. Likewise, the producers need to reliably and consistently produce things that the consumer's desire (a county nearby had a similar problem and it is rumored that an extension agent from Utah State University came down and facilitated a discussion between producers and consumers). Ultimately, Boulder residents need to address the question: how can the community develop a symbiotic relationship of trust between producers and consumers? The discontent with the current patterns of food acquisition may provide the drive for this conversation to occur.

In addition to a breach in communication between producers and consumers, residents believe that there is substantial room for improvement across a spectrum of food procurement avenues in their community. Cited possible changes include more streamlined bulk ordering,

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more availability of produce (especially in the off season), more access and education to resources related to food storage and preservation. (And I would suggest hunting). Likewise, a crucial component of rural food procurement is a system where people do not have to be long-standing residents to feel the support of the community (Whitley 2013). Pegboard helps newcomers become involved community happenings quickly, but does not necessarily provide significant support in food sourcing.

One possible framework, as outlined by Thomas Gary (2014) is a multi-stakeholder cooperative. This is a cooperative involving member-owners from all aspects of society, namely the producers, processors and consumers. Cooperatives have long been a grassroots organization strategy for small (and often rural) communities. In contrast to agricultural coops Gary argues that “[multistakeholder cooperatives] may be able to set a community development template for addressing various social, economic, and ecological needs, with a more inclusive and hopefully enduring democratic organization” (23). While these multi-stakeholder cooperatives hold the well-known benefits of community involvement, geographic embeddedness, and sense of ownership, Gary states they also demonstrate “[t]he broadening of democratic voice to different stakeholders, *with their involvement in the organization*, may provide a sufficient populist voice to offset the institutionalizing process” (27 (emphasis original)). In Boulder, this could take the form of a co-op run by member-owners from all parts of the social fabric. This food hub could provide a place for farmers to sell their produce (to both members and others), for people to purchase southern Utah produced goods, and the community to purchase bulk foods from UNFI both collectively and individually. Besides its physical presence and utility, the organization and its member-owner meetings could provide a forum through which producers, consumers and beyond can express their needs and desires to the community.

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Ultimately, from an urban, or outside perspective, a roughly 26% rate of local food consumption is significant. However, given the isolation of Boulder as well as the importance and satisfaction given to Southern Utah produced foods, this community has the potential to increase this percentage substantially and thus greatly increase their community's food self-reliance.

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CONCLUSION:

Boulder Town is the home to a business whose mission, and its relative failure to fulfill that mission, illuminates an irony that reflects the current reality of food procurement in Boulder. Telling this story in effect re-tells the story of Boulder's food system and highlights the issues at hand. This establishment is Hells Backbone Grill (HBG) a high-end restaurant serving regionally inspired cuisine. In 2000, Blake Spalding and Jen Castle opened HBG in Boulder with a vision of building a sustainably-sourced restaurant that would increase tourism and employ the local community. In their own words,

At Hell's Backbone Grill, we serve food and drink that reflect our deep commitment to sustainability and intention to be of benefit in the world. Our ingredients are simple and honest: sustainably grown vegetables, herbs and flowers from the restaurant's own no-harm organic farm, and Boulder-raised grass-fed and -finished local lamb and beef. We lovingly tend over 75 heirloom fruit trees and 130 heritage-breed laying hens who provide the eggs for the breakfast plates. (Hell's Backbone Grill 2015a)

In many ways, the restaurant has succeeded and even exceeded expectations. It has won multiple awards increasing tourism while gainfully employing many locals. The sourcing of their food however, holds many ironies, and highlights the challenges of the regional food system. The HBG "no-harm" organic farm raises animals, namely chickens and goats but does not utilize them for meat. Instead the restaurant still orders a large portion of their meat (if not the majority) from UNFI. The meat raised in Boulder, the beef and lamb, is sent either an hour away or all the way to California, to be slaughtered before it comes back as a gourmet and "locally" sourced meal at HBG. All the other meat on their menu is commercial and delivered by truck. The ultimate irony in HBG's meat sourcing, however, is that both chefs are vegetarians (thus the no-harm farm). However, to meet the expectations of the high-end restaurant industry they feel they must have meat on the menu.

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Next, on the matter of vegetables, the relatively short growing season in Boulder proves to be difficult to manage. While the harvest season provides a bounty of self-grown produce for the restaurant, their garden has little to offer before July and after October. As with the meat, produce during the off-season arrives by truck. This could be remedied with hoophouses, greenhouses, fall crop storage, and better planning.

Finally, while they embrace the use of butter and cream in their recipes, neither of these can be sourced from the region and must come in by truck as do all the grains and oils. Thus HBG suffers the same shortcomings that burden the overall Boulder community food system, short growing season, lack of local meat processing, and no locally produced dairy. These may be shortcomings inherent to Boulder. However, these issues also reflect policies that limit the food procurement avenues of rural residents everywhere – specifically around small-scale dairy and meat processing. Not unlike diners at HBG seeking to indulge in a national trend of locally sourced foods, Boulder residents seek to increase their consumption of foods produced in Boulder. However, the same ties that hold the community together often inhibit timely change (as well as outside forces i.e. the economy and USDA policies). A structured dialogue between consumers and producers, and possible the creation of a new institution, has the potential to increase the overall satisfaction of all parties within the community food system.

At the basis of this research is a belief in the importance of rural places. But why are rural places important? Are rural places still relevant to our increasingly urban and technologically driven society? Why should we work to preserve rurality and improve the livelihoods of those living there? Below I touch on rural livelihood's importance to society at large.

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Rural residents are stewards of the land (though they may do this job more or less well). Folks living in urban areas may consider themselves environmentalists because they live simply and consciously, however, it is the rural residents who directly see the effects of their actions, and the actions of society, on our wild and open spaces. And it is these wild and open places that provide us with such things as fresh water, clean(er) air, timber, and many other raw materials that modern society depends upon (ecosystem services). Less obvious, but possibly more importantly, is the rural contribution to diversity. Rurality provides diversity of people, a cultural diversity of historical importance in the United States, as well as biodiversity. Throughout history the US has held a legacy of farming and ranching, from the first settlers to westward expansion to the current contribution of grain to the world market. Rural places, through diversified agriculture as well as stewardship of wild species provide a bank and shelter for biodiversity, a necessary component to a healthy ecosystem. Rural livelihoods nested within this larger ecology provide a necessary and stark contrast to the increasingly technological and capitol driven economy and lifestyle of urban populations. As with ecological diversity, a sociological and economic diversity provides resilience and strength to its system.

Ultimately, the starving of rural communities is an ironic disaster. Ironic because people are starving amidst agricultural lands and a disaster because we are undermining the cultural and biodiversity rural communities provide for an overwhelmingly urban nation. The preservation of rural diversity is the preservation of biological, social, political and communal diversity, all of which are important to the physical, political and social well-being of our society as we weather increasing climate change.

While Boulder was used in this research to illuminate a specific rural livelihood, a similar approach to assessing community food systems and sentiments could be applied to rural

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communities throughout the US. Through such investigation, researchers may find that Boulder is not unique and rural people everywhere seek improved access to fresh food. They might even have their minds set on self-reliance. To understand, however, researchers must get on the ground and ask.

Upon the completion of my survey and presentation to the Boulder community, I received an email from one of the community members that stated “I’m going to call [UNFI] again and check in about what it would take to do a [Co-op] type situation...I wonder what they’d work out if I told them a lot of people would buy from them...thanks for your inspiration!”⁵ This is exactly what I had hoped to achieve. That by simply putting a mirror up in front of the community, they could better see how to improve upon their current systems.

I hope that this research both illuminates the realities of living and procuring food in a small and isolated town and sheds light on the values, work and relationships (among other factors) involved in procuring food in an endangered rural livelihood, a livelihood that feeds and supports society at large.

⁵ Personal correspondence 10/14/15

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REFERENCES

Bitto, Ella Annette, Louis Wright Morton, Mary Jan Oakland & Mary Stand. 2003. "Grocery Store Access Patterns in Rural Food Deserts." *Journal for the Study of Food and Society*. 6(2): 35-48.

Economic Research Service (ERS), U.S. Department of Agriculture (USDA). 2014. "Definition of a Food Desert" Accessed 11/13/2014.
www.ers.usda.gov/dataFiles/Food_Access_Research_Atlas/Download_the_Data/Archived_Version/archived_documentation.pdf.

Fleischhacker, Sheila, Donna Johnson, Emilee Quinn, Stephanie Jilcott Pitts, Carmen Byker, and Joseph Sharkey. 2013. "Advancing Rural Food Access Policy Research Priorities: Process and Potential of a Transdisciplinary working group." *Journal of Agriculture, Food Systems, and Community Development* 3 (4): 201-212.

Fuller, Alexandria. 2009. "Utopia on the Range." *The New York Times*, September 27. Accessed 11/24/2014
<http://www.nytimes.com/2009/09/27/style/tmagazine/27boulderw.html?pagewanted=all&r=0>.

Gantner, Leigh A, Christine M. Olson, Edward A. Frongillo and Nancy M. Wells. 2011. "Prevalence of Nontraditional Food Stores and Distance to Healthy Foods in a Rural Food Environment." *Journal of Hunger & Environmental Nutrition* 6(3): 279-293.

Garasky, Steven, Lois Wright Morton, and Kimberly A. Greder. 2006. "The Effects of the Local Food Environment and Social Support on Rural Food Insecurity." *Journal of Hunger & Environmental Nutrition* 1(1): 83-103.

RURAL FOOD PROCUREMENT STRATEGIES

Gottlieb, Robert. 2009. "Where We Live, Work, Play.... And Eat: Expanding the Environmental Justice Agenda". *Environmental Justice* 2(1): 7-8.

Gray, Thomas W. 2014. "Historical Tensions, Institutionalization, and the Need for Multistakeholder Cooperatives [Commentary]." *Journal of Agriculture, Food Systems, and Community Development*. 4(3):23-28.

(a)Hell's Backbone Grill. N.D. "Welcome to Hell's Backbone Grill." Hell's Backbone Grill. Accessed 11/10/2015. (<http://hellsbackbonegrill.com/>).

(b)Hell's Backbone Grill. N.D. "About". Hell's Backbone Grill. Accessed 11/10/2015. (<http://hellsbackbonegrill.com/about/>).

Kaufman, P.R. 1999. "Rural Poor Have Less Access to Supermarkets, Large Grocery Stores." *Rural Development Perspectives*. 13(3): 19-25.

Kingsolver, Barbara. 2007. *Animal, Vegetable, Miracle: A Year of Food Life*. Harper Collins, New York.

Longacre, Meghan R, Brian A. Primack, Peter M. Owens, Lucinda Gibson, Sandy Beauregard, Todd A. Makenzie and Madeline A. Dalton. 2011. "Public Directory Data Sources Do Not Accurately Characterize the Food Environment in Two Predominantly Rural States." *Journal of the American Dietetic Association* 111(4): 557-582.

Mader, Erin and Heidi Busse. 2011. "Hungry in the Heartland: Using Community Food Systems as a Strategy to Reduce Rural Food Deserts." *Journal of Hunger & Environmental Nutrition* 6(1):45-53.

RURAL FOOD PROCUREMENT STRATEGIES

Mammen, Sheila, Jean W. Bauer and Leslie Richards. 2009. "Understanding Persistent Food Insecurity: A Paradox of Place and Circumstance. Social Indicators Research" *Social Indicators Research* 92(1): 151-168.

Martinez, Steve, et al. 2010. "Local Food Systems: Concepts, Impacts, and Issues." ERR 97, U.S. Department of Agriculture, Economic Research Service. Available at http://www.ers.usda.gov/media/122868/err97_1_.pdf. Accessed 10/29/2015.

Morton, Lois W. and Troy C. Blanchard. 2007. "Starved for Access: Life in Rural America's Food Deserts. Rural Sociological Society." *Rural Realities* 1(4). University of Missouri: Columbia.

Nabhan, Gary P. 2002. *Coming Home to Eat: The Pleasures and Politics of Local Foods*. W. W. Norton & Company.

Smith, Chery and Lois W. Morton. 2009. "Rural Food Deserts: Low-income Perspectives on Food Access in Minnesota and Iowa." *Journal of Nutrition Education and Behavior*, 41(3).

U.S. Census Bureau. 2014. "State and County QuickFacts." Accessed 11/12/2014. <http://quickfacts.census.gov/qfd/states/49/49017.html>.

(a)USDA Economic Research Service. 2014. "Food Environment Atlas." Accessed 10/2/14. <http://ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas.aspx#.VC1sVPldWkE>.

(b)USDA. 2014. "Farmers Market Directory." Accessed 10/2/14. <http://search.ams.usda.gov/farmersmarkets/>.

RURAL FOOD PROCUREMENT STRATEGIES

- Van Hoesen, John, Brandy Bunkley, and Cody Currier. 2013. "A GIS-based methodology toward refining the concept of rural food deserts: A case study from Rutland County, Vermont." *Journal of Agriculture, Food Systems, and Community Development* 3, (2):61-75.
- Whitley, Sara. 2013. "Changing Times in Rural America: Food Assistance and Food Security in Food Deserts." *Journal of Family Social Work*. 16:36-52.

Boulder Community Food Survey



A.E. Crane - <http://www.fhwa.dot.gov/byways/photos/50930>

I am a graduate student conducting this survey to further understand how residents of rural areas obtain food. I am interested in understanding all the ways that the people of Boulder Town get their food and their satisfaction with their methods. *Please have the adult with the most recent birthday complete the survey.* In this survey, you will be asked a number of questions regarding where your household obtains food. Participation is voluntary, and responses will be kept anonymous. You have the option to not respond to any questions that you choose. Submission of the survey will be interpreted as your informed consent to participate and that you affirm that you are at least 18 years of age.

If you have any questions about the research, please contact me, Jane Philips, via email at jane.philips@umontana.edu or my faculty advisor, Josh Slotnick at joshua.slotnick@mso.umt.edu. If you have any questions regarding your rights as a research

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subject, contact the University of Montana Institutional Review Board (IRB) at (406) 243-6672.

Thank you for your participation.

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Section 1:

1. How often do you shop at a grocery store? *(not including convenience stores like Hills and Hollows and the Boulder Exchange)*
 - a. Every ___ days

Regarding the following grocery stores: Food Town, Escalante Mercantile, Griffin General Merchandise and chain grocery stores such as Smiths, Albertsons and Safeway present in Southern Utah, what is your level of satisfaction with the following?

(Please Check One)

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied
2. The price of food at the grocery outlets you visit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The quality of food available at these outlets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. The variety of food available at these outlets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Please provide estimates of what percentage of the food consumed by your household comes from the following sources: *(please do your best to make the total of given percentages equal 100%)*

- i. ___% Self-Produced *(gardened, farmed, foraged, hunted, raised etc...)*
- ii. ___% Produced by someone else in Southern Utah?
- iii. ___% Grocery stores *(i.e. Food Town, Escalante Mercantile, Griffin General Merchandise as well as chain grocery stores such as Smiths, Albertsons or Safeway)*
- iv. ___% Convenience Stores *(i.e. Hills and Hollows, The Boulder Exchange, Other Gas Stations)*
- v. ___% A Big Box Stores *(i.e. Walmart, Sam's Club, Costco)*
- vi. ___% Bulk Ordered *(i.e. UNFI)*
- vii. ___% other _____

6. Do you grow any of your own food *(i.e. fruit, vegetables, grain)? Please circle one: (Y/N)*
 - a. If so, please describe what you grow and on how many acres *(please use back of survey if you need additional space)*

7. Do you raise animals to provide meat for your household or other boulder residents? *Please circle one: (Y/N)*
 - a. If so, how many?

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- b. Do you process your own meat (*not including hunting*)? *Please circle one:* (Y/N)
- c. Do you run cattle? *Please circle one:* (Y/N)
8. Do you have chickens for eggs? *Please circle one:* (Y/N)
- a. If so, how many?
9. Do you have cows or goats for milk? *Please circle one:* (Y/N)
- a. If so, how many?
10. Do you hunt for food? *Please circle one:* (Y/N)
- a. If so, what do you hunt?
- b. How many animals do you get in a typical year?

Section 3:

How satisfied are you with the following:

(Please Check One)

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied
11. Access to food produced in Southern Utah	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. The quality of Southern Utah-produced food available to you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important to you are the following:

(Please Check One):

	Very Unimportant	Unimportant	Neutral	Important	Very Important
13. Consuming food produced in Southern Utah?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Being individually food self-sufficient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Boulder Town being food self-sufficient?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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16. What, if anything, would you change about the way you obtain food? (*access, quality, etc...*)
17. What, if anything, would you change about the way Boulder obtains food? (*Sourcing, organization, processing etc...*)

Section 4:

18. What is your **primary** means of income? (*Please Circle the corresponding letter*)
- Agriculture, owner or employee
 - Local business, owner or employee
 - Governmental entity, employee or office holder (Federal, State, County, or Town)
 - Self-employed (non-agriculture)
 - Retired
 - Other
19. Please indicate how many people in each age group live at your residence (*including you*):
- 0-5 years old___
 - 6-12 years old___
 - 13-18 years old___
 - 19-24 years old___
 - 25-40 years old___
 - 41-54 years old___
 - 55-70 years old___
 - 71+ years old___
20. How many years have you lived in Boulder?
- ___ years
21. Is this your primary residence? *Please circle one:* (Y/N)
22. Did you grow up in Boulder? *Please circle one:* (Y/N)
23. What year were you born?

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Wrap up:

24. Is there anything else you would like to add?

25. Would you like to be contacted to provide more information?

a. If so, please provide your contact information

Notes for final draft:

Formatting: 4 pg booklet on Legal Paper (8.5 x 14, each page is then 8.5x7) when folded in half it fits into a standard #10 business envelope (which is also the size used for correspondence).

Boulder Community Food Analysis Interview Guide:

1. How long have you lived in Boulder?
 - a. What kept you here?
 - b. Why did you move here?
2. Tell me about how you obtain/source food
 - a. What percentage of your food is locally sourced?
3. Could you explain your feelings toward food sourcing? For example, do you feel food origin is more of a social, environmental, political or economic issue?
 - a. Why?
4. Could you tell me what you feel your role is in the Boulder Community?
5. Are you satisfied with the Boulder Food System? What would you change?
6. To what extent has the community undertaken initiatives to increase the food infrastructure?⁶
 - a. How successful were these efforts?
7. Could you tell me what your understanding of meat processing and the cattle industry works in Boulder? (*I've heard that the cattle must be sent to California to be slaughtered*).
 - a. Are people slaughtering their own cows?
8. What are your views a about the construction of a community slaughter house?
9. What are you views on the construction of a community grain mill? (*I know Loch is working on one*)
10. What are your views on the construction of a community incubator kitchen?(*An incubator kitchen is a commercial kitchen that is accessible to community member's to use to produce processed foods they can sell to the public*).
11. How do you classify "local" food?
12. What is your understanding of self-sufficiency and community food security?

Demographics:

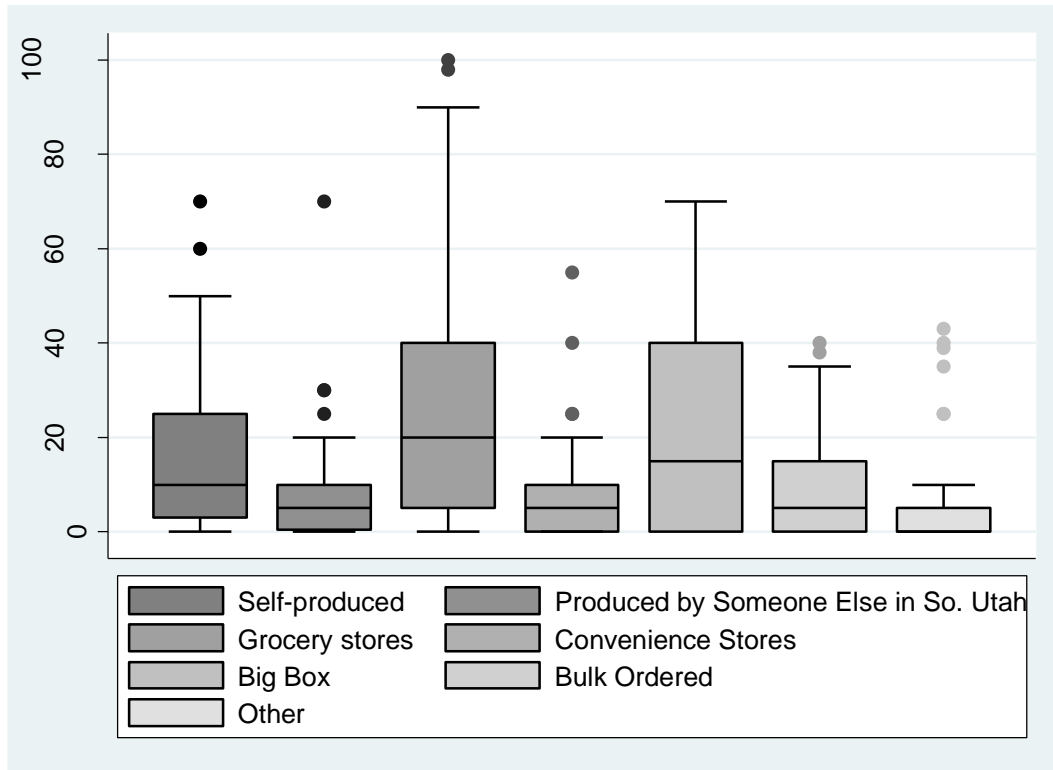
13. What year where you born in?
14. How many people are in your household?

⁶ Smith, Chery and Lois W. Morton. 2009. "Rural Food Deserts: low –income perspectives on food access in Minnesota and Iowa." *Journal of Nutrition and Education and Behavior* 14, No 3

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APPENDIX C. Figure 3

Boxplot showing the distribution of the percent of all food obtained through alternative strategies by 44 households responding, Boulder Town, Utah 2015.

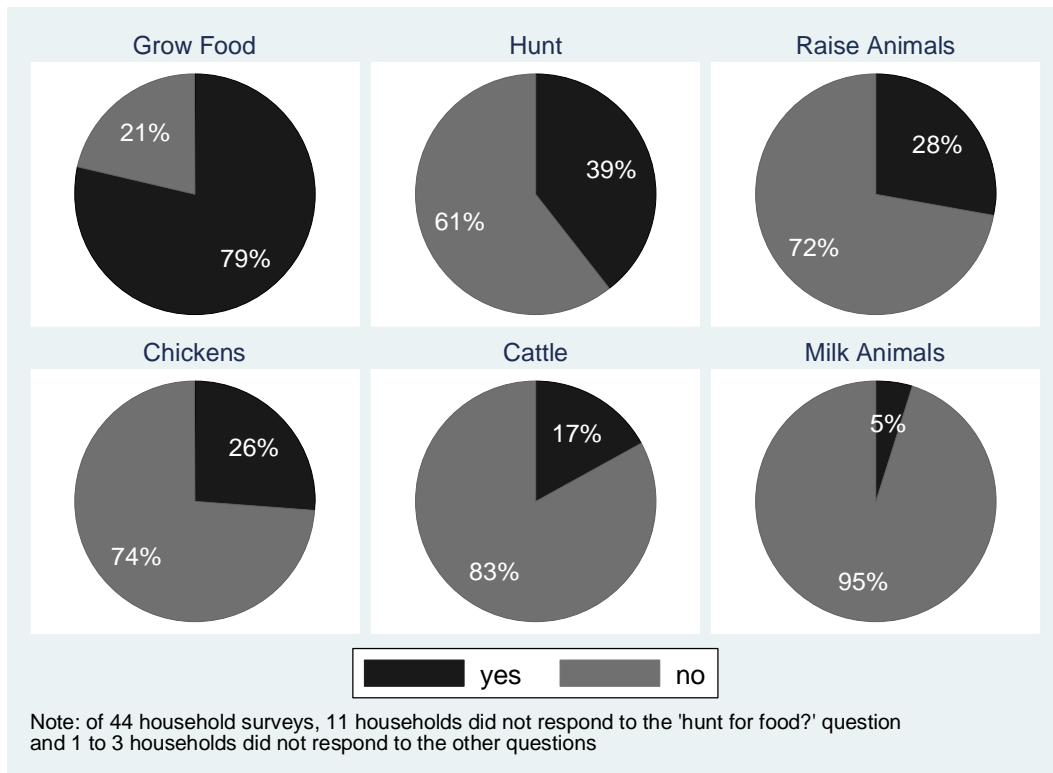


(Note: the boxes shows the 25th 50th and 75th percentiles for each strategy's distribution while the whiskers show 1.5 times the distance between the 75th and the 25th percentiles—or less when bounded by the horizontal axis. The dots reflect outliers beyond the whiskers.)

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APPENDIX D. Figure 4

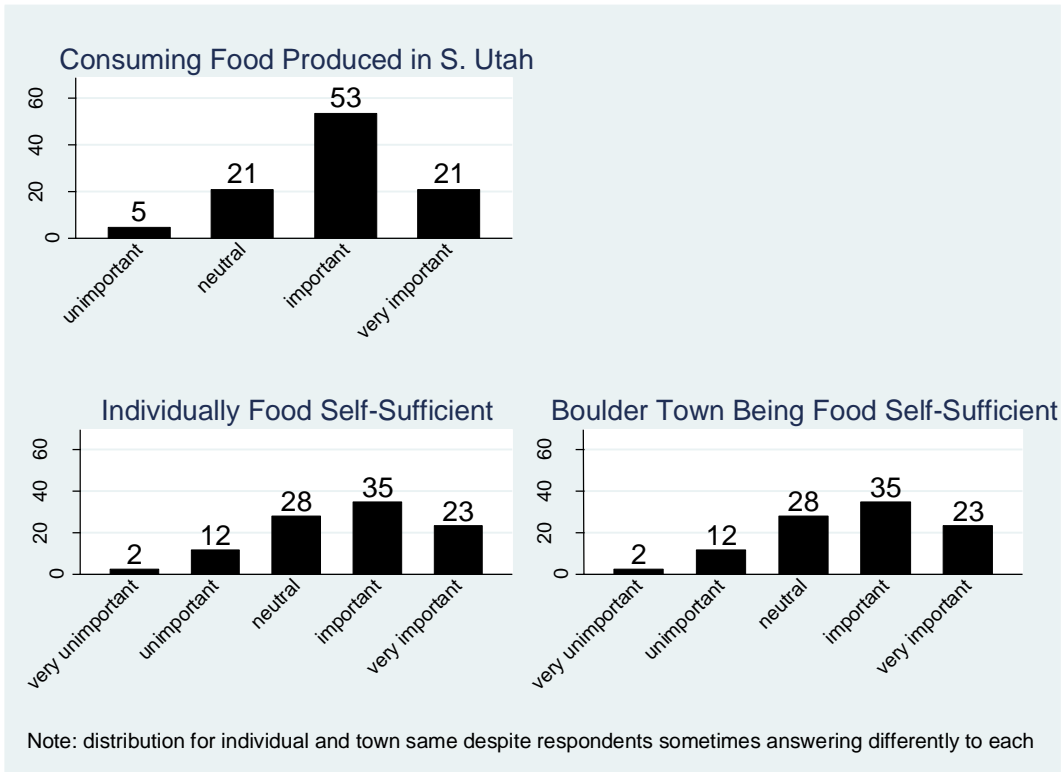
Local food acquisition strategies with percentages in Boulder Town, Utah 2015



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APPENDIX E. Figure 5

Importance of local acquisition and individual and local self-reliance: percent distribution from very unimportant to very important in Boulder Town, Utah, 2015



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APPNEDIX F. Figure 6

Level of satisfaction with access and quality of food in Southern Utah felt by residents of Boulder Town, Utah 2015

