The Local Food Landscape in Central Texas:
Access, Obstacles, and Consumer Motivations

Research Proposal
ENV 49-964: Capstone in Env. Studies, Spr. 2012

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Executive Summary

A senior capstone course is intended to bring together the key learning objectives that faculty expect their students to have learned during the course of study in their major or interdisciplinary program. Capstones vary greatly among disciplines, but usually require individual or group research projects that allow students to demonstrate the cumulative abilities they have learned in their major or program-specific coursework (Berheide 2001). For interdisciplinary majors, the capstone course provides an opportunity for students to integrate the knowledge, research skills, and epistemologies from multiple disciplines within the framework of a single theme, and at Southwestern University, this is no different. The Environmental Studies Program at Southwestern University encourages students to analyze a local or regional environmental issue from multiple perspectives, and notably, encourages some element of environmental activism or community engagement. The hope is that students will engage in a research project that will allow them to gain experience, research skills, and communication skills necessary to succeed in a professional or academic field. For 2012, the capstone course will examine specific issues related to local food networks and sustainable agriculture in Central Texas. The following research proposal provides the historical information, review of scholarly literature, and methodologies necessary to justify and carry out a study of local, sustainable food networks in Central Texas. Through the process of background research and the development of a literature review of farm direct markets, students identified key trends and patterns that required further empirical research. This proposal documents that process, ultimately suggesting a qualitative mixed methods approach that examines consumer access and restrictions to local, sustainable food while also investigating several trends of three Central Texas farmers' markets. The results of this research will be analyzed and presented to the participating farmers' markets and submitted for publication in a scholarly manuscript.

1. Introduction

The problems associated with modern industrial agriculture are some of the most challenging in contemporary society. Few topics are as complex and pervasive, requiring an interdisciplinary approach that considers economic, political, social, and ecological perspectives. Over the past two decades, the level of interest in this topic has reached new heights. Many facets of the global food network have revealed to be an unsustainable system, replete with numerous human and environmental injustices. Local, sustainable food networks have received a significant amount of attention in popular media and scholarly research. Lauded for a willingness to snub and circumvent the industrial food system, but also chastised for a lack of outreach to marginalized populations, the local food movement has become both a target for praise and criticism. This research proposal will examine the current literature on this topic, identify avenues of future research, and propose a study that will hopefully reveal important information about the state of the local food movement in Central Texas. In keeping with the mission statement and goals of Southwestern University and the Environmental Studies Program, the chief aim of this project will be to critically examine this local environmental issue from multiple perspectives and actively contribute to scholarly discourse and public awareness on the topic. The following pages will outline the framework for our study. But before our specific case study of local food is explained, it is important to first include some background information that explains the relevance of contemporary food and agricultural issues to the field of environmental studies. The below sections serve as an introduction to those issues.

1.1 Historical Background: Policy and Innovation Since the Green Revolution

Contemporary agriculture is largely the result of a transition both in policy and technology that occurred during the mid-20th century. The economic growth, scientific innovation, and global political transformations that followed World War II created a set of conditions that set the stage for a revolution in modern agriculture. Largely the result of government-subsidized technological advancements and international research efforts, the Green Revolution led to the introduction of new hybridized crop varieties, the heavy use of chemical inputs, and the increased mechanization of farm production.

The Green Revolution had its origins in the discovery of dwarf varieties of rice in Japan and hybrid varieties of corn in the U.S. in the early 20th century (Tauger 2011). With thick stems and high yields, these crops inspired the research of Norman Borlaug to breed dwarf varieties of wheat that produced high yields due to heavy doses of fertilizer and increased water consumption (Tauger 2011). The researchers promoted these high-yielding varieties (HYVs) as a "package"—including the seed, fertilizer, and adequate irrigation—that would succeed on any farm (Tauger 2011). The introduction of the HYV "package" to more and more countries also fostered the increased use of machinery, such as tractors, to more efficiently apply the required inputs. The environmental consequences of this change in production practices are apparent, and will be addressed in a later section, but the economic and social repercussions of such a paradigm shift are equally significant.

The industrialization of agriculture through the Green Revolution was certainly significant, but it would not have had the same impact if it were not coupled with the changes in global trade policy that followed World War II (Hodges 2005; Pritchard

2009). This specifically began with the Bretton Woods Conference in 1944, an event proposed by Western nations to develop an international system of economics and trade (Willis 2005). This conference was held for two reasons: to avoid an economic collapse similar to the Great Depression and to create a more stable and peaceful world through standard and fair economic practices (Willis 2005). As a result of these conferences, three institutions were created: The International Monetary Fund (IMF), the World Bank Group, and the General Agreement on Tariffs and Trade (GATT) (Willis 2005; Hodges 2005; Pritchard 2009). The IMF attempts to maintain currency exchange rates around the world in order to better foster and streamline world trade (Willis 2005). The World Bank, actually a collection of five agencies, provides financial aid and counsel to struggling countries, usually with the provision that the country adopts a different, more Western system of finance (Willis 2005). Finally the GATT was established to promote free trade between nations through conferences called 'rounds' in which member countries agree upon conditions for free trade (Willis 2005).

In the beginning, these institutions largely kept their distance from the topic of food and agriculture (Pritchard 2009). While free trade was incorporated into most traded commodities, the trade of food was still very much controlled by the nation-state or regional trading blocs (Pritchard 2009). Following World War II, Europe and the Soviet Union's agricultural productivity was severely diminished, and with several developing countries facing severe food shortages and famine, the United States inserted itself as the primary agent of food aid in the post-World War II era. The Marshall Plan (1947) included a major food aid component, and was followed by a larger food aid program in the next decade: the 1954 Agriculture Trade Development and Assistance Act, now

known as the “Food for Peace” program (Clapp 2004). Through these policies, the U.S. achieved the explicit goal of the 1954 act: improving its commercial markets abroad through low interest food loans and food aid (Clapp 2004). For decades, the United States sustained a role as the lead supplier of food for Europe as well as other countries in times of instability and emergency (Tauger 2011). The HYV “package” that allowed the U.S. to dominate grain production in a time of global agricultural challenge was eventually exported to other countries. For some countries, farmers were negatively affected when the scale of production did not keep pace the comparative drop in agricultural commodities (Evenson and Gollin 2003). This was especially true in Sub-Saharan Africa, where despite their agricultural potential, farmers were unable to benefit from advances in the Green Revolution because of domestic conflicts, corruption, and lack of infrastructure (Bourne 2009; Tauger 2011).

For some large countries, however, the Green Revolution resulted in unprecedented levels of grain production. By the late 1970s and early 1980s, countries that had experienced food shortages were now becoming self sufficient or even net exporters (e.g. Mexico and India), and within the next decade, it had become apparent that U.S. trade policies were in need of some amendment in order to maintain dominance in grain production (Pritchard 2009). The U.S. and Western Europe began subsidizing large agricultural conglomerates in order to better compete in the world market, leaving developing world producers to compete on an uneven global playing field (Pritchard 2009). As a response, the GATT held another round of negotiations in 1986, known as the Uruguay Round, which ultimately led to the GATT being replaced by the World Trade Organization (WTO) (Pritchard 2009). The introduction of the WTO extended the

influence of the GATT to food and agriculture on a more significant level (Willis 2005; Hodges 2005; Pritchard 2009). The transition from managed trade of food to the explicit "free trade" of food required member countries to remove tariffs or barriers that had previously provided a safety net in times of market fluctuation and environmental disaster, while the European Union and the United States are able to maintain enormous agricultural subsidies due to political influence and organizational loopholes. (Willis 2005; Hodges 2005; Pritchard 2009; Van der Ploeg 2010). In addition, the advent of genetically modified organisms (GMOs) in agriculture has introduced further complications to global agricultural trade. A handful of U.S. and European seed companies control more than 90% of the GMO market, and the intellectual property laws extended by the WTO allow these companies to own the rights to seed varieties that make up a significant portion of global grain production (Boucher 1999; Clapp 2004; Shiva 2000). Today, agribusiness conglomerates in the United States and the European Union dominate global trade through unprecedented political, economic, and technological influence. And the disparities along the supply chain do not end at international borders. Within countries, there exists a bifurcated system of industrial commodity production for a global market, and an increasingly vocal group of producers attempting to circumvent or dismantle a system dominated by the largest of corporate and government actors (Kirschenmann 2003). Agriculture has reached an important threshold in contemporary society. The incredible efficiency and overall size of commodity production has created a world flush with basic grains, but replete with environmental and social consequences. The following sections examine the environmental and social issues associated with the current agricultural system and add some depth to our

understanding of how food production is easily one of the most salient environmental issues of our time.

1.2 Environmental Issues Associated with Industrial Agriculture

Aldo Leopold once wrote, “The penalty of an ecological education is to live alone in a world of wounds.” One of the largest of environmental “wounds” has been created by the industrial food system. The industrialization of our food system seeks to maximize efficiency by planting crops and raising animals in monocultures and using synthetic pesticides, fertilizers, and antibiotics to maximize short term yields. This is something that overcomes the complexity of nature and reduces biodiversity. A field planted with a single crop and fertilized with high levels of nitrogen, phosphorous, and potassium is an ideal place for pests to feed and multiply because there is an abundance of food and virtually no habitat for predators or parasites that prey on pests. As a result, these farms use insecticides to combat the pest issue. This may seem logical, but there will always be pests that survive the pesticides, who reproduce and evolve to resist the chemicals. Therefore, by constantly increasing the intensity of the chemicals, insects continue to evolve with more powerful defenses (Pimental 2005; Conway 2005). In addition, the excessive use of chemical fertilizers, which has become a severe pollutant and contamination of water resources, not to mention the need for increased consumption of water resources. One of the most dangerous aspects of modern industrial agriculture is the requisite amount of water required and its inefficient usage. These inefficiencies both in the irrigation of monoculture crops as well as in concentrated animal feeding operations (CAFOs) has led to disruption of water tables, water pollution, and

desertification. Irrigation accounts for 70% of global fresh water withdrawals, 15-35% of which is considered to be unsustainable (Rosegrant, Ringler, Zhu 2009). As population increases, so will the demands of agriculture, requiring more water to be withdrawn. Within the category of unsustainable water usage is water withdrawn faster than the natural recharge rate of the water table or from non-rechargeable sources, such as fossil aquifers. With this in mind the continued pollution and overconsumption of fresh water may ultimately lead to more unstable agricultural production. Continued overuse of water within industrial agriculture has also led to the desertification or projected desertification of areas within India, China, and the African Sahel. With increased draw comes decreased water stability, which broadly affects both large-scale producers as well as poor farmers.

Image 1.1: Confined Animal Feeding Operation[1]

Because only 0.1% of applied pesticides reach the desired pest targets, the remaining 99.9% run into the water supplies, greatly affecting both the diversity of waterways and the overall toxicity of fresh water (Pimental, 2005). Water is easily contaminated by pesticides and herbicides—mostly from agricultural runoff—and can stay in the water system for several days or weeks (Pimentel and Edwards 1982). Pesticide run off was famously cast as the root cause of Rachel Carson's book *Silent Spring*, but the problem continues to this day. According to a study by Pimentel et al. (1993), it is estimated that 70 million birds are killed in the United States each year. And the negative effects of pesticides are not

limited to birds. It is estimated that 10,000 new cases of cancer occur each year in America due to pesticides (Pimentel et al. 1993). In addition, pesticides and herbicides can reduce the vegetative cover and organic matter in the soil, resulting in soil erosion (Pimentel and Edwards 1982).

Cover crops help protect the soil of the impacts of raindrops and wind; the organic particles in the soil hold the soil together. However, when the harsh chemicals from herbicides and pesticides kill these beneficial agents, the land is left vulnerable to erosion. The emblem of catastrophic erosion is the Dust Bowl of the 1930s. During this time, the earth was used until it had been exhausted and devastated of its natural qualities, left barren and lifeless, only to be blown away by the wind.

Image 1.2: Dead Zone Caused by Algal Blooms[2]

Industrial farms use synthetic fertilizers to replace the nutrients eliminated by the pesticides and herbicides. Nitrogen and phosphorus are one of the essential nutrients needed for plants to grow and thrive. However, when high rates of fertilizer are used on industrial farms, the nitrogen and phosphorus end up leaving the crop field and polluting either surface waters or groundwater (Hesterman 2011). Additionally, the high concentrations of nitrogen and phosphorus in the water stimulate the growth of algae. The result is huge algal blooms, which cause oxygen depletion and loss of aquatic life (see Image 1.2). Similarly, because there is a serious effect on waterways from fertilizer runoff, it is one of the acute causes of dead zones within waterways (Horrigan et al.

2002). Pollution through pesticide inefficiency and fertilizer run off are both issues that arise from modern agricultural system.

Another significant environmental issue associated with industrial agriculture is the unsustainable use of petroleum products. Large farming operations require the use of fossil fuels in order to work at scale. Many of the pesticides themselves are formed of petroleum byproducts, which require further reliance upon petroleum and continued production. Inorganic fertilizer themselves are comprised primarily of ammonia, a direct byproduct of natural gas (Smil 1999). The use of fossil fuels is critical both in the production of inorganic fertilizer as well as throughout the process of industrial agriculture in transportation and facilitation. Combines, tractors, and sprayers are necessary machinery in industrial agriculture that all rely upon fossil fuels. This links our agricultural system to the polluting effects of the continued combustion of oil; and, as a result, food security is dependent on petroleum, a finite resource. Traditionally, fertilizer came from animal waste and other organic material. When crops and livestock live together on the same farm, the animal waste becomes valuable organic matter for the crops. By disconnecting these two components of the food production system and raising animals and crops separately in vast monocultures, manure becomes a source of pollution due to its high concentration in a small area (Hesterman 2011). In addition, by confining an immense population of animals in such close quarters, the risk of disease is increased. As a result, industrial farmers use antibiotics, which in turn create the risk of antibiotic-resistant bacteria that can endanger both animals and humans (Hesterman 2011).

Not only do vast monocultures increase pollution in the water, land, and air, this widespread modification of natural landscapes also results in the rapid decline of

biodiversity. Biodiversity loss is directly linked to the practice of monocropping, which threatens the diversity of both wild and domesticated species through practices of high-yielding, single, and selective breeding of crops (Gomiero et al. 2011; Horrigan et al. 2002). Single breeding specifically decreases biodiversity by replacing diverse habitats with land areas consisting of a uniform crop. Due to the widespread control that corporate interests have over certain industries, farmers must switch from traditional agricultural practices to those that favor and breed only certain varieties of a given crop, leading to the extinction of thousands of other 'non-preferred' varieties (Horrigan et al. 2002, 448). These industrial, agricultural practices, like over-cultivation, overgrazing, and overuse of water, also lead to the degradation of fertile soil that can take between 20 and 1,000 year to grow by one centimeter (Mann 2008). In addition to storing the nutrients that plants depend on to grow, soil is the home of many beneficial insects and parasitoids that preserve soil quality and control crop pests (Gomiero et al. 2011; Horrigan et al. 2002).

Due to poor soil quality, agricultural industries opt for synthetic means of maintaining healthy crops. For example, plant breeders, who would normally control plant disease by crossbreeding their domestic plants with wild ones, are facing pressures to do so more rapidly. As a result, breeders utilize one-gene resistance to combat disease in domestic plants rather than benefiting from the complex make-up of wild plants and their resistance genes that have evolved over hundreds of years. Doing so actually increases the likelihood for diseases to overcome the single resistant genes, meaning those plants no longer provide resistance (Horrigan et al. 2002, 448).

The use of pesticides is another intervention of modern agriculture that seeks to control an off-balance ecosystem and preserve the quality of the crops. However, both

direct and indirect threats to biodiversity erupt due to the 3 million tons of pesticides used by the world each year, which equates to 1,600 different chemicals (Horrigan et al. 2002, 446). Direct impacts include poisoning various insect and bird populations that do not threaten the lives of the crops. For example, David Pimentel, a Cornell entomologist, and his colleagues estimated that only 0.1% of applied pesticides reach the target pests (Horrigan et al. 2002). Often, however, the non-target species become targets, as has been notably evident among honeybee populations. Indirect threats of the increase of chemicals in the environment include nitrogen runoff, which can lead to "dead zones" in water areas where oxygen is depleted, more acidic soil (which can limit the biologic activity in that area), developmental abnormalities in amphibians, and compromised immune system among various marine species (Horrigan et al. 2002).

However, just as single disease-resistant genes in crops can easily be overcome, extended application of the same pesticides and herbicides on the same crops can also result in resistance from pests and disease. Therefore, much of industrial farming has turned to genetically modified crops (GMOs) that have been engineered to contain pesticide or herbicide-resistant genes. This poses environmental threats to biodiversity as the spread of such crops can transfer these resistant genes to their wild relatives, which can quicken the rate at which weeds find resistance to these herbicides being used (Horrigan et al. 2002). Similarly, crops all over the world are being engineered to produce the *Bacillus thuringiensis* toxin, a natural pesticide. Studies have shown, though, that *Bt* corn can produce pollen that is deadly for monarch butterfly larvae (Horrigan et al. 2002, 449). Another unintended consequence of GMO cropping is that by aiming to produce widespread resistance to certain pests, other pests, which are not susceptible to

the toxin, find opportunity to invade the crop, as has been the case with *Bt* cotton in China (Gomiero et al. 2011, 18). Unfortunately, the rapidity to which modern agriculture has turned away from traditional, natural forms of farming and moved towards synthetic, highly controlled farming has created a lifestyle of unsustainable practices, wasteful habits, and fewer biologically diverse ecosystems.

The scale of industrial agriculture is increasing, as well as the scale of its abuses, which are becoming ever more apparent and devastating. As stated by Imhoff and Baumgartner (2006): "Healthy human activities require healthy landscapes and healthy landscapes require moving away from an eradication ethic toward coexistence with all species." Sustainable agriculture will need to adapt to natural laws that govern the local ecosystem. In order to do so, a new sustainable system must be formed by a new generation of people who think of ecological efficiency and sustainability instead of mechanical productivity and large short-term yields.

1.3 Social Justice Issues Associated with the Modern Industrial Food System

In our modern agricultural system, food access is limited by the strain on the natural environment, which creates tension related to food production, food distribution, and food availability. Even though there is currently enough food on the planet to feed the entire human population, the unequal distribution of resources has created food insecurities throughout the world. These issues specifically affect low-income and minority populations (Kaiser 2011). This system has consequently led to significant social inequalities on both a national and a global scale.

Food security is largely based on the concept of physical and economic access to food (Pinstrup-Andersen 2009). Food security ties in key elements that are evaluated as a whole as well as on an individual grounding. These elements include equal and sufficient access to healthy foods for all individuals. However, being able to acquire these foods has proven to be problematic on a couple of different levels. To obtain food security we must address issues of social justice and insecurity that surround our current food system. However, this is a complex issue that embodies aspects of environmental racism, agricultural production, public health, and trade.

One of the central issues with the current system of food production is that food is commonly viewed as a commodity rather than a fundamental human need. Sustaining our bodies through proper food and nutrition is one of mankind's most primitive and basic goals. However, various corporations that often prioritize profit over sustainability control the majority of the food industry. Organizations and groups involved in the food system should be focused on understanding and promoting a diet that is both nutritious and self-sustaining. Focusing on these ideals would allow individuals to maintain a healthy diet as well as support a healthy environment worldwide. Unfortunately, as food has increasingly become considered a commodity across the world, certain groups and individuals are being singled out and ultimately punished because they cannot afford the cost of food. Generally speaking, food insecurities are often associated with minority populations, groups with low household income, and populations with low levels of education (Mitchell et al. 2004). These food insecurities can ultimately lead to many public health problems that include malnutrition, overeating, poor cognitive and

emotional development in children, as well as depression (Kaiser 2011). The main reason these problems exist, however, is the lack of access to affordable healthy and fresh foods.

When food and seed corporations focus on profitability, rather than promoting health and a balanced diet, consumers are often manipulated into buying their products at any cost. As stated earlier, the West has an abundance of food supplies, but these resources are being misused and misunderstood. For example, the average American is consuming far more protein than the recommended daily allowance, with much of this protein coming from animal products (Horrigan et al. 2002). Consequently, studies have shown that increased consumption of animal products leads to some of the most serious health conditions such as cardiovascular disease, diabetes, and various cancers (Horrigan et al. 2002). Regardless of this evidence, individuals in the United States are reluctant to change their eating habits because these foods continue to be widely available and inexpensive. While there are some who struggle with problems associated with overeating, other individuals suffer from problems associated with starvation due to poor food access, further indicating a problem with global food distribution. The issues of accessibility and availability are deeply related to governmental and corporate involvement with food agricultural policy.

While the globalization of food has proven to be beneficial in many respects, it has also been responsible for a number of the issues surrounding food security and access. Though more countries have contributed to and gotten involved in food production and distribution, the Western countries have ultimately exploited the system. The World Trade Organization (WTO) was established to encourage and support free trade of capital across borders (Hodges 2005). Ideally, both the producer and consumer

should benefit equally from a free market. However, Western countries have repeatedly exploited the cheap labor of poorer countries in the name of comparative advantage and free trade ideals. Ironically, the undeveloped countries that are providing cash crops for the developed countries through exploitation and cheap labor are often in greatest need of food aid. This has become such a large issue that often times the people who are producing crops like cacao, coffee, and tea cannot afford adequate sourced of nutrition for themselves or their families (Hodges 2005). Many of the issues of inequality surrounding global food production and consumption can be traced back to various policy initiatives by the European Union and the United States carried out under WTO (through trade liberalization and the patent rights) and the World Bank (through development schemes aimed at export-oriented cash crop production in lieu of local food security).

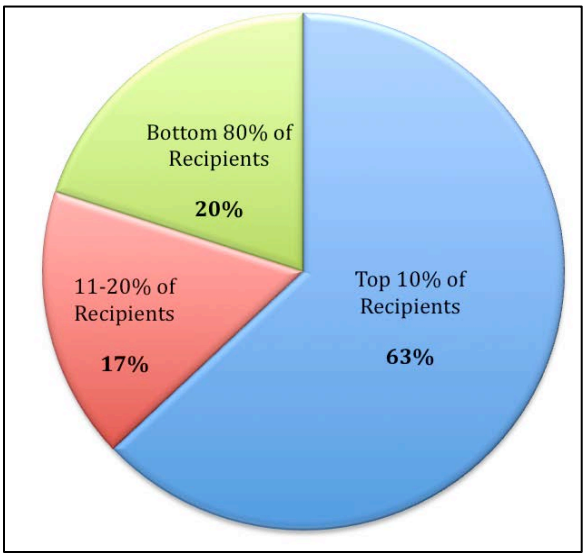

Image 1.3: Commodity Subsidy Recipient Concentration in 2010

Governments in the developed countries often provide financial support to farmers through subsidies, which provide farmers with security that enables them to continue to receive an income even if something unpredictable, such as a drought or flood, affects their crops. While a certain degree of agricultural support is allowed under WTO rules, the United States and the European Union exploit loopholes and slow dispute resolution mechanisms to distribute the highest subsides in the world to their farmers—a source of serious opposition among developing

countries and the primary reason WTO negotiations have experience a decade of failure (Pritchard 2009). In Western countries, subsidies are generally paid to those who producers the highest yields of basic grains. Subsidies are most commonly provided to large-scale farmers because they can guarantee high rates of production, which is in the best interest of the government funding the subsidies (Hodges 2005). The negative costs of subsidies are complex, causing environmental harm by essentially incentivizing the use of pesticides, chemical fertilizers, and high-energy inputs—costs that are generally unaccounted for most economic analyses. These hidden costs, or externalities, allow for numerous negative social impacts as well. In the developed world, this leaves many small-scale farmers without access to subsidies, forcing them to compete in a market with artificially low prices for many goods. Large food manufacturers have a distinct advantage because of their prominence and economic security, while the local farmers continue to struggle to keep up with the competition in a skewed market. As a result, farmers in the U.S. have typically been forced into niche markets comprised of dedicated food consumers concerned with the environmental and health issues associated with industrial agriculture (Pollan 2006). In the Western world, U.S. and E.U. agricultural subsidies allow a situation where it is possible for large grain producers to artificially undercut local producers in the developing world (who largely operate without the assistance of subsidies), thereby making it impossible to compete with the economies of scale achievable by large agribusiness firms (Boucher 1999).

Genetically modified organisms (GMOs) have been suggested as an option to solve issues of global food access. Many plants and seeds have been genetically modified to be pesticide and pest resistant, and it has therefore been suggested that these seeds can

be grown more easily and efficiently, with the use of fewer agrochemicals. However, research has indicated that although GMOs may seem like a viable option on the surface, they have many hidden costs and in the end tend be more expensive than cultivating crops in an organic farm setting (Shiva 1989). For instance, due to copyrighting of intellectual property rights under WTO regulations, the seeds themselves are owned by

Class of pesticide	Cancer
Phenoxyacetic acid herbicides	Non-Hodgkin's lymphoma, soft-tissue sarcoma, prostate
Organochlorine insecticides	Leukemia, non-Hodgkin's lymphoma, soft-tissue sarcoma, pancreas, lung, breast
Organophosphate insecticides	Non-Hodgkin's lymphoma, leukemia
Arsenical insecticides	Lung, skin
Triazine herbicides	Ovary

Image 1.4: Associations Between Various Classes of Pesticide and Various Forms of Cancer[4]

the companies that produce them. As a result, access, distribution and cost are not determined by the sharing, trade, and saving of seeds (as it has been for thousands of years), but rather by a market dominated by a few key actors (Shiva 1989; 2000). Furthermore, although GMO representatives have claimed that the use of GMOs will lead to a decreased need for agrochemicals, recent research has indicated that pests are able to adapt to pesticides, leading to an increase in pesticide use and therefore increased cost of application (Shiva 1989; Conway 2005; Pimental 1995). Mentioned earlier as an environmental issue, the heavy dependence on agrochemicals is just as significant a problem for human health (Kesavachandran et al. 2009). Some of these issues include slower nerve conduction, problems with cardiovascular functioning, as well as issues with the gastro-intestinal, respiratory, ocular, and musculo-skeletal systems (Kesavachandran et. al 2009). These chemical pollutants are more likely to affect impoverished populations, who may have limited health care information and access (Gochfield and Burger 2011).

The health issues associated with heavy chemical use in agriculture are only part of the burden carried by agricultural workers. On plantations and smallholder farms throughout the developing world, laborers work at or below the poverty line in largely seasonal jobs that provide few benefits. Women, who comprise the majority of the agricultural labor force in the developing world, bear a disproportionate share of this burden due to discrimination, harassment, lack of agency, long hours, and little or no maternity leave (Boucher 1999; Smith and Dolan 2006; Ogunlela and Mukhtar 2009). Both men and women are situated at the bottom of commodity chains that contain vast wage disparities between developing world producers (many of whom live on 1 USD per day) and Western consumers who pay inflated prices for coffee, chocolate, vanilla, palm oil, tea, nuts, cotton, cut flowers, and numerous other cash crops (Barrientos and Dolan 2006). Yet, the situation for developed world farm workers is not much better. In the United States, farm workers—many of whom are undocumented migrant laborers—work for minimum wage (or less), live in inadequate housing, and work 60 hour work weeks (Guthman 2004; Hesterman 2011).

The present imbalance of food distribution and security has led to numerous inequalities both globally and within the United States. Because profit is the primary goal of many corporate agribusiness firms, human health and wellbeing have been relegated to distant goals. This has resulted in health and economic issues that primarily affect those with lower income and education levels. Although it has been suggested that free-trade agreements would help improve global food availability, they have predominantly functioned to increase the power and wealth of the already economically dominant countries, and in many cases, exacerbated inequality in developing world countries.

Problems with conventional methods of agriculture have primarily affected those of a lower socioeconomic standard. These groups are more likely to be disadvantaged by the complications of food insecurity, extremely low wages, and exposure to toxic agrochemicals. The disproportionate food distribution has affected the human population on a global scale, which has led to numerous social, economic and environmental concerns.

2. Review of the Literature

The first decade of the twenty-first century has witnessed a dramatic increase in the number and popularity of direct food markets in the United States. The number of farmers' markets more than doubled from 2,863 in 2000 to 6,132 in 2010, and continues to grow at a rapid rate, climbing to 7,175 in 2011 (Farmers Markets 2012) [See Figure 2.1]. The number of Community Supported Agriculture programs (CSAs), while debated, is believed to have grown from 374 in 2000 to at least 3200 in 2010, with some estimates ranging much higher (LocalHarvest 2010; Galt 2011)[1]. Academics have taken note of this trend, and the scholarly literature on local, direct food markets has increased as well, expanding to include multiple perspectives on growth and popularity (see Brown 2002; Varner and Otto 2007; Markowitz 2010; Jones and Bhatia 2011; Long 2011), consumer preference and motivations (see Tiemann 2008; Svenfelt and Carlsson-Kanyama 2010; Farmers et al 2011) and issues of access and inequality (see

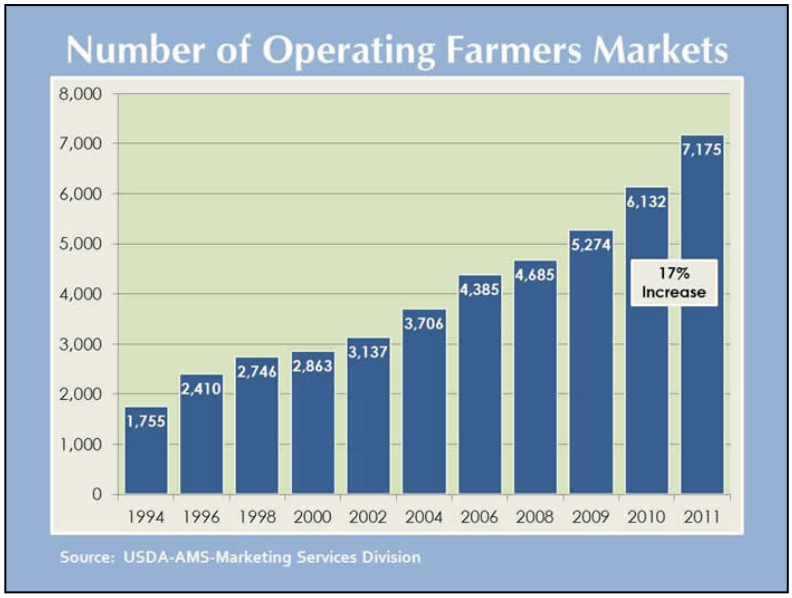

Image 2.1: Farmers Market Growth, 1994-2011

[1] The numbers on CSAs have been debated ever since the USDA (2007) stated that it had estimated the growth of CSAs to exceed 12,000. Some scholars have questioned this number, most notably Ryan Galt, who provides a detailed analysis of the numbers in a 2011 study.

Guy and David 2004; Guthman 2008; Larsen and Gilliland 2008; Thomas 2010; Walker et al 2010). In addition, the body of popular literature on local food, sustainable agriculture, and farm direct markets has seemingly outpaced academia and undoubtedly fueled the expansion of the local food landscape (see Pollan 2006 and 2008; Kingsolver 2007; Bendrick 2008; Smith and McKinnon 2007; and numerous others). The following review examines these sources and others to paint a more complete picture of the ways farmers' markets and local food have been addressed in literature. First, a section addressing recent government policies introduces those programs that have sought to promote small farms and farmers' markets. Next, we examine critically the ways farmers' markets have been simplified in the literature. The sections that follow then outline the push and pull factors that lead to increased consumer preference for farmers' markets. Lastly, we will analyze those sources that examine the obstacles, barriers, and inequalities that currently limit and prevent participation in farmers' markets among many segments of the population.

2.1 USDA and Farmers' Market Policy

Domestic policy related to farmers' markets and other direct producer-to-consumer markets has increased in recent decades. This increase has been linked to other environmental and social movements and is heavily associated with other manifestations of the food movement that promote the growth of healthy, sustainable food (Markowitz 2010). One exception to recent policy developments is the Farmer-To-Consumer Direct Marketing Act of 1976, which was created to promote and provide funding for farmers who sold their products directly to their customers, as well as allow nonprofits and local

governments to support and promote farmers' markets (Markowitz 2010). Prior to the passing of this act, there were very few farmers' markets around the country. Through the act, funding was given to state governments and used to create laws and regulations that would help establish and stabilize farmers' markets (USDA.gov). In 1998, there was further encouragement from the National Commission of Small Farms to increase USDA involvement in the fostering of farmers market growth, which could possibly account for the increase in farmers' markets during this time period (USDA.gov).

Recently, the United States Department of Agriculture (USDA) has implemented grant programs that facilitate and promote the growth of farmers' markets around the nation. Some of these programs include the Farmers Market Promotion Program (FMPP) and the Federal State Marketing Improvement Program (FSMIP). The FMPP began in 2002 as an amendment to the Farmer-To-Consumer Direct Marketing Act of 1976. This program provides grants for direct producer-to-consumer markets, which include domestic farmers' markets and community supported agriculture projects (USDA.gov). In the past ten years, this program has invested nearly $10 million to support direct marketing in an effort to increase access to healthy food and decrease food deserts (USDA.gov). Additionally, the USDA began the FSMIP in 1999, which provides funding for state agriculture departments to research and improve new marketing strategies for United States agriculture (USDA.gov). Both of these programs have been a driving force for the expansion and stability of farmers' markets in the United States.

One of the primary issues that the food movement is trying to address is the problem of food deserts in low-income urban areas. Often times, individuals living in low-income areas lack access to conventional grocery stores, especially those that sell

healthy, nutritious foods (Markowitz 2010), but there have been a few government subsidy programs implemented in order to improve food access in these areas. The Women Infant and Children's Farmers' Market Nutrition Program (WIC FNMP) began in the late 1980s and provides food vouchers for women with children who are living under the poverty line. The farmers' markets are given monetary incentives by the government for choosing to accept these vouchers, which are exchanged for unprepared fruits and vegetables. In 2008, 2.3 million people received vouchers through this program and, as of the writing of this proposal, over 3,000 farmers' markets have been authorized to accept them (Markowitz 2010). Additionally, the 2002 Farm Bill authorized the Senior Farmers' Market Nutrition Program, which is another coupon-based program that provides low-income seniors with vouchers that allow them to buy fresh foods at farmers' markets, roadside stands, and CSAs (Markowitz 2010). There are certain problems with these programs, however. After further research, the USDA found that, although helpful, the monetary benefits from programs alone were not enough to sustain customers and farmers' markets.

The food subsidy program entitled Supplemental Nutrition Assistance Program (SNAP) is the United States' primary food assistance program for low-income individuals. In 2009, 34 million Americans received vouchers through SNAP (Markowitz 2010). Like the WIC and Senior Nutrition Program, SNAP allows for farmers' markets to accept vouchers as a method of improving food accessibility. However, there are numerous problems with this. For instance, farmers' markets are a business, and many farmers question the sales potential of a low-income neighborhood (Markowiz 2010). Additionally, the SNAP program is run by an electronic system in which many farmers

cannot afford to take part (Jones and Bhatia 2011). These factors have negatively affected the number of farmers' markets that accept food stamps. However, the 2008 Farm Bill recognized this problem and has allocated funds through the Farmers' Market Promotion Program to provide supplemental income for markets that accept SNAP vouchers (Markowitz 2010).

There have also been food trends and policies not directly related to farmers' markets, but instead related to the food movement, that have affected the popularity of farmers' markets. Many of the programs that fuel the food movement and support farmers' markets come from local, grassroots efforts. There are numerous local policies that have been recently shifting towards supporting healthy, local food. For instance, farm-to-school programs are becoming increasingly popular (Lappe 2011). In an effort to improve the health of children and decrease obesity, some local governments are trying to create legislation that allows schools to buy fresh produce and meats from local farms, creating a direct producer-to-consumer relationship similar to the relationship provided by farmers' markets (Leyda 2011). Currently there are 2,200 farm-to-school programs nationally (USDA.gov).

There are additional governmental initiatives that are promoting local food and farmers' markets. For instance, the Know Your Farmer, Know Your Food (KYF2) initiative began as a part of the 2008 Farm Bill. The KYF2 initiative is committed toward providing individuals with knowledge of local and regional food systems. In many cases, the best way to access local food is through famers' markets, so this is a major driving force of the farmers' market popularity trend. Knowledge of farmers' market grants and the application process for these grants are additionally provided through this initiative

(USDA.gov). There are also numerous non-governmental organization (NGO) initiatives taking place that fuel the food movement. These include the Real Food Challenge (RFC), which is an NGO created by students whose goal is to develop a healthy, socially and environmentally just food system. For this organization, "real food" is characterized by four criteria: local/community based, fair, ecologically sound, and humane (realfoodchallenge.org). Social movements like RFC seem to be a large driving force of the local food movement and therefore provide clientele for farmers' markets as well. These political and social movements and changes have largely accounted for the upward trend of farmers' market popularity across the nation within the past three decades.

Despite the sizable literature on the subject of farmers' markets, there still exists a noticeable hole in the research. Farmers' markets themselves are very rarely characterized accurately or differentiated from one another in a way that highlights their heterogeneity. In order for scholars to conduct their studies, they almost always homogenize farmers' markets in broad terms.

2.2. Characterizations of Farmers' Markets

Many scholarly studies purposely look at only one farmers' market or one farmers' market business model. For instance, McGuirt et al. (2011) conducted their study solely from farmers' markets near urban centers, yet they applied their findings to farmers' markets as a whole. Similarly, Onianwa et al. (2006) focused only on two farmers' markets: one in Birmingham and one in Huntsville, Alabama. Rainey et al. (2011) collected data from three farmers' markets in metropolitan areas of Little Rock, Hot Springs and Texarkana, Arkansas. While these studies are not without their merit, all of

them oversimplify farmers' markets by only looking at certain types—usually those that are located in cities or in metropolitan areas.

Some scholars may only look at specific categories of farmers' markets, but many more acknowledge that different types of farmers' markets exist and build their studies with this in mind. These scholars frequently strive to gather a balanced sample of farmers' markets so that their research can be applicable on a larger scale. For instance, Hunt (2006) studied eight different communities and their farmers' markets in the state of Maine in order to examine the social interactions that took place. The eight locations Hunt chose were intentionally varied, including a small port, a little college town, and Maine's largest city. Similarly, Farmer et al. (2011:14) conducted research in four Indiana farmers' markets that "were chosen with an emphasis on a variety of market characteristics, which included: urban areas and small towns; highly successful and fledgling markets; and markets in affluent and economically depressed areas." Elupa and Mazzocco (2010:3) note that "farmers' markets are organized differently from one another," and therefore attempted to study a fair mix of both urban and suburban markets.

These scholars indeed recognize that different types of farmers' markets exist, but none of them spend time analyzing that difference in any detail. It seems to simply be a given, but with very little information to back it up. In almost every study where researchers gather data from a balanced sample of farmers' markets, their goal is not to interpret the differences between the various sites, but instead to combine all of the data and discover generalized patterns that can be considered more representative.

Because researchers so seldom characterize or differentiate farmers' markets, the literature usually concludes with very broad and very definitive points. These points

consistently pertain to the pricing of the farmers market crops, the types of people that visit farmers' markets, and the primary motivations behind their visits. However, it is important to see how these points remain overarching and overly broad. McGuirt et al. (2011:96) conclude that "farmers' market produce prices were lower on average than supermarket prices." Colasanti et al. (2011:318) state that "market shoppers tend to be highly educated professional middle-aged to older, white, and female." Just as definitively, Wolf et al. (2005:193) write that "the primary reason shoppers attend farmers' markets is the high-quality product." None of these arguments or statements is wrong. On the contrary, it is important to create generalizations like this in order to understand the big picture concepts and patterns of farmers' markets. Nonetheless, it is also important to understand the nuances of something so frequently homogenized.

It is strange that this is such an untouched topic; while scholars rarely differentiate farmers' markets as a whole, they often differentiate between the types of patrons and farmers present at these markets. For example, Keeling Bond et al. (2009) studied what type of people preferred direct markets for their fresh produce and differentiated these people into three categories: *direct always*, *direct occasionally*, and *direct never*. The authors then looked at these three groups separately and studied ways in which they differed. Similarly Elupa and Mazzocco (2010:14) study consumer attitudes and behaviors at farmers' markets and conclude that "five preference-based consumer segments exist in urban and suburban farmers' markets: *Market Enthusiasts*, *Recreational Shoppers*, *Serious Shoppers*, *Low-involvement Shoppers*, and *Basic Shoppers*. These consumer segments significantly differ in demographic and behavioral characteristics." Researchers clearly spend time identifying and analyzing differences of

people at farmers' markets, but there still isn't a body of literature that analyzes the differences of the markets themselves.

There are a few scholars who do distinguish various types of farmers' markets, but when they do, it is usually a brief sentence or two and rarely an integral part of the main argument. For instance, in the middle of making larger conclusions about why and how patrons participate at farmers' markets, Farmer et al. (2011:20) note that "urban areas in particular have found that [farmers' markets] in public spaces facilitate the strengthening of community among ethnically diverse populations." Varner and Otto (2008:185) provide another example. While studying the sales at all of the farmers' markets in Iowa, Varner and Otto state that "more urban characteristics appeared to be associated with Iowa farmers' markets achieving higher sales per vendor or per capita. The size of population in the market locale and the distance from other competing markets contributed positively to the overall success of these markets." These examples of scholars differentiating between farmers' markets are few in number and almost all only made in passing.

2.3 Consumer Motivations to Shop at Farmers' Markets

There have been a significant number of studies across the country that examine the reasons why consumers choose to shop at farmers' markets. Studies reveal that the motivation for each and every consumer varies. However, this research is not comprehensive; it remains important to understand how, why, and where people purchase their food. The different and often intersecting motivations for shopping at farmers'

markets, for our purposes, can be grouped into three categories: community support, ethical and political motivations, and preference for quality.

2.3.1 Community Relations and Social Interactions

Many consumers agree that the communal aspects are a primary reason for shopping at farmers' markets (Svenfelt and Carlsson-Kanyama 2010, Tiemann 2008, Farmers et al 2011). For the most part, the modern food system today is no longer focused on face-to-face relationships and trust is often times found lacking. Svenfelt and Carlsson-Kanyama (2010) argue the importance of trust is a priority across multiple segments of society, especially in food and agriculture, which has been targeted as an industry lacking in transparency. In contrast to the conventional supermarkets, farmers' markets have positioned themselves as a place where people can gather, build relationships, and earn trust between producers and consumers (Svenfelt and Carlsson-Kanyama 2010; Long 2011). The movement through the market and the different learning opportunities directed at a range of consumers provide a place of recreation and entertainment (Farmers et at 2011; Svenfelt and Carlsson-Kanyama 2010; Tiemann 2008). All of these combine to create unique community relationships and bonds which reconnect food and people in a new and diverse way.

The community aspect of farmers' markets is made stronger by the ability for producers to directly interact with their consumers. Producers are able to share their methods of production as well as information on certain crops and recipes. Many participants in Svenfelt and Carlsson-Kanyama's (2010) study stated that this relationship made vendors feel more responsible for their products because they are directly selling

them to the consumers, ensuring a level of accountability not achievable at a conventional supermarket.

Farmers' markets not only provide a diverse array of products, but they also bring together a diverse group of people. As Tiemann (2008) states, "old and young; well dressed and unshaven; chefs from top restaurants and old hippies; graduate students and professionals" can all be found enjoying the farmers' market experience (478). A sense of community appears to be an overriding motivation factor for many people today. Being able to have a face-to-face relationship with the farmer who is growing their food, learning about new foods, meeting new people, and being a part of a friendly atmosphere all make up this unique community feel that is attracting more and more people to the farmers' markets experience.

2.3.2 Ethical and Political Motivations

In addition to community-related pull factors, ethical and political issues also motivate many consumers. As stated previously, the ecological consequences of industrial agriculture are increasingly devastating. Additionally, the corporate system of food production disconnects the consumer from the producer, and essentially the land. As more information about these negative consequences began surfacing, an alternative of shopping locally and buying directly from farmers soon grew from its traditional roots and developed into a mainstream feature of contemporary American popular culture. Popular books such as *The Omnivore's Dilemma* (Pollan 2006) and *Animal, Vegetable, Miracle* (Kingsolver 2007), and documentary films such as *Food, Inc* (2008) and *Fresh* (2009), along with countless other sources of information, provided the public with

knowledge about the damage of industrial agriculture. In addition, they have presented the local food movement as an alternative that serves as a form of political resistance.

The outpouring of information on sustainable food pushes people away from supermarkets and towards farmers' markets, not only to support the sustainable, local food, but also to talk to the farmers and fellow consumers who are resisting industrial agriculture. Michael Pollan writes in his 2008 book *In Defense of Food*, "Indeed the surest way to escape the Western diet is simply to depart the realms it rules: the supermarket, the convenience store, and the fast-food outlet" (158). Similarly, Lou Bendrick encourages people to find and benefit from local food in his book *Eat Where You Live* (2008); in it, he writes, "The money I spend on eggs goes directly to a farmer in my community and not to some giant corporation in a town I've never heard of. My farmer is now also my friend, and who couldn't use another friend in this crazy mixed-up world?" (14). By choosing to shop at farmers' markets, consumers can exercise their beliefs and show their support. Additionally, these popular authors and documentary filmmakers who advocate local food urge consumers to think of the way they spend their money as a political act.

Long (2011) found that due to the increasing amount and accessibility of information about local and sustainable food, farmers' markets serve as the perfect outlets for consumers to exercise this new information. In addition, "common threads have merged to form dominant narratives that encourage sustainable practices and authentic, local consumer experiences" (Long 2011, 55). Similarly, McEachern et al (2010) state that farmers' markets provide an outlet for "conscious consumers to enact their ecological citizenship values" (396). Thus an ideology is created by consumers who

are looking for an environmentally sustainable food system in opposition to the corporate mode of food production.

Many studies found that support for their local farmers was one of the most important reasons for shopping at a farmers' market (Feagan et al 2004, Long 2011, Rainey et al 2011, Toler et al 2009). Consumers are motivated to shop at farmers' markets to show their support for sustainable food by supporting local small farmers. In this way, food becomes the basis for a political movement that aims at corporate resistance.

2.3.3 Quality, Variety, and Price

Extensive research has shown that consumers across the United States have attributed characteristics related to higher quality and greater variety to farmers' markets. This sentiment of shopping at farmers' markets to increase freshness, variety, value, nutrition, personal health, or cooking opportunities has appeared in many studies as a key, driving factor in consumer motivation. Generally speaking, most of the studies we reference provide consistent results showing these characteristics to be motivating factors. For example, according to a study of farmers' markets in California, "consumers continue to indicate that quality and value are among the most important attributes when purchasing produce" (Wolf et al. 2005, 200). A few authors offer alternative perspectives that provide slightly different results, such as measuring whether or not motivations are strong enough to change consumer behavior. Additionally, while price has also been found to be a limiting factor in consumer motivation, we will argue that price can also be a motivating factor.

For the authors who agree that overall higher quality is one of the primary motivating factors for consumers at farmers' markets, their research indicates these results through regarding the specific qualities of freshness, greater variety, better value, better taste, and better appearance (see Feagan and Morris 2009, McEntee 2010, Onianwa et al. 2011, Pirog and McCann 2009, Svenfelt and Carlsson-Kanyama 2010, Toler et al. 2009, Wolf et al. 2005, Zepeda 2009 and Zepeda and Li 2006). However, these studies exhibit similar research methods in surveying consumers at farmers' markets in various regions of the country. For example, the researchers of a study in Alabama randomly selected 222 farmers' market consumers and found the following: "Consumers generally prefer farmers' markets over supermarkets because of the freshness of the products, price, appearance of products, and variety and selection of produce" (Onianwa et al. 2006, 124).

While personal nutrition and health have appeared as driving factors in some research (see Feagan and Morris 2009; McEntee 2010; and Mcguirt et al. 2011), the article by Zepeda and Li (2006) produced data showing different results. According to these authors, "Attitudes about nutrition and health…have no significant effect on the probability of buying local" (Zepeda and Li 2006, 4). They go on to say that, though these motivations may be important to the consumers, they are not the factors that actually affect behavior (Zepeda and Li 2006). Similarly, the research by Zepeda and Li (2006) found that, when cooking is concerned, neither special diets nor the frequency of cooking changed the consumer's likelihood of buying local.

Despite findings from the previous study, however, several researchers produced consistent results showing that the more interest or enjoyment people experienced in cooking, the more likely they were to shop at farmers' markets. As Zepeda and Li state,

"On the other hand, attitudes towards cooking…are significantly associated with local buying behavior; enjoyment of cooking significantly increases the probability of buying local food…" (Zepeda and Li 2006, 9). Similarly, Onianwa et al. (2006) found that 42% of farmers' market consumers prefer the availability of unique items in the interest of cooking. Other authors who share comparable findings include Wolf et al. (2005) and Zepeda (2009).

As McEntee (2010) pointed out, conclusions regarding price as a motivational factor were actually made without conducting price comparisons. Furthermore, McEntee (2010), Zepeda (2009), and Zepeda and Li (2006) all indicate that the price of food at farmers' markets is a limiting factor. According to Zepeda, "…the probability of shopping at a farmers' market was significantly reduced if respondents perceived that cost was the most important characteristic of food" (Zepeda 2009, 250). As for Pirog and McCann (2009), a price comparison was conducted between local and conventional food prices, but results varied depending on seasonality and how well a particular food item, such as hormone-free meat, could be compared to the corresponding conventional food item. Accordingly, Feagan and Morris (2009) discovered, through surveying farmers' market consumers in Ontario, that price was not a significant motivating factor in relation to social interactions and other factors.

For many studies, however, research or price comparisons indicated instances of price as a motivation for consumers (see McGuirt et al. 2011, Onianwa et al. 2006, Pirog and McCann 2009, Svenfelt and Carlsson-Kanyama 2010, Toler et al. 2009, and Wolf et al. 2005). While McGuirt et al. state explicitly that results indicated lower prices at farmers' markets than at surrounding supermarkets, authors like McEntee (2010),

Svenfelt and Carlsson-Kanyama (2010), and Wolf et al. (2005) asserted that price was a motivating factor, specifically in relation to the quality and value of the food. Consequently, consumers were motivated to pay for farmers' market food when they felt like it was reasonably priced. For example, Wolf et al. state, "…the mean ratings of produce characteristics indicates that consumers perceive that farmers' market produce is fresher looking, fresher tasting, a higher-quality product, a better value for the money, and more reasonably priced than supermarket produce" (Wolf et al. 2005, 198). In addition, McEntee highlights "a pattern of coupling of intent for engagement in local food with food shopping criteria; price or affordability was not a factor, but 'good, quality food' was" (McEntee 2010, 794).

Through various forms of research and analysis, diverse information has been found supporting the notion that higher quality products found at farmers' markets are a significant, motivating factor. Characteristics associated with "high quality" include freshness, better value, greater variety, healthier and more nutritious, greater enjoyment with cooking opportunities, and more reasonable prices. Combined with motivations through community involvement and ethical and political concerns, farmers' market consumers have a wide range of motivations supporting their decisions to shop unconventionally. Despite the numerous motivations for consumers, there remain significant obstacles that limit access to farmers' markets. The following section describes these in detail.

2.4 Access and Inequality

The reasons why some people are not shopping for local foods are complex and varied, but the majority of these are tied to problems of access. As a term, "access" is interpreted somewhat differently in the literature, but Guy and David (2004) offer the most general definition, stating that suitable access to healthy food requires an examination of both economic and physical barriers. Due to the lack of food access in some communities, researchers in the past two decades have paid much attention to the idea of "food deserts" (Walker et al 2010). A working group originally discussed food deserts in the 1990s for the Low Income Project Team of the Department of Health in the United Kingdom. Initially, the focus of food desert research was based on the growth of large supermarkets in suburban areas, coupled with the decline of food retailers in inner cities (Guy and David 2004; Thomas 2010; Walker et al. 2010). As more studies have been conducted, researchers have developed varying ideas and definitions of what they consider to be a food desert.

2.4.1 Food Deserts

The general premise behind most definitions of food deserts is the presence of a large geographic area with few or no sources of mainstream food venues (Mari Gallagher Research & Consulting Group 2008). Many researchers associate the lack of healthy food markets with individuals of low-socioeconomic status (Gordon et al. 2011; Guy and David 2004; Thomas 2010; Walker et al. 2010). Furthermore, researchers have found that individuals of lower socioeconomic status have less access to mainstream food venues, often having to travel long distances to reach one (Gordon et al. 2011; Guy and David

2004; Ver Ploeg 2010; Walker et al. 2010). Finally, minorities in the United States are less likely to have access to mainstream food venues and more likely to have access to fringe food venues (Gordon et al. 2011; Guy and David 2004; Walker et al. 2010). Due to the lack of access to healthy food options, individuals living in food deserts have been shown to have greater health issues, such as higher body mass indexes (BMI) and higher rates of cardiovascular disease (Gordon et al. 2011; Ver Ploeg 2010; Walker et al. 2011) Overall, research surrounding food deserts note that these areas typically exhibit five standard characteristics: physical disadvantages in terms of mobility and accessibility; economic disadvantages; poor nutrition; geographic disadvantages due to a lack of nearby healthy food stores; and a number of stores that provide a very limited selection of poor quality food at higher prices (Guy and David 2004, Walker et al. 2010).

A mainstream food venue can be defined as a place in which one can support a healthy diet on a regular basis. A fringe food venue is understood to be the opposite, a place that would not promote a healthy diet if it were the primary source of acquiring food (Mari Gallagher Research & Consulting Group 2008). Throughout the literature, mainstream venues are often considered to be grocery stores, supermarkets, health food stores, etc. (Sparks et al. 2009). Fringe food venues are typically understood to be convenience stores, fast food restaurants, etc. (Gordon et al. 2011, Walker et al. 2010). Though fringe foods are not the ideal food retailers, their presence does not determine a food desert. However, there must be a food balance in which residents can access mainstream food venues just as easily as they can access fringe food venues (Mari Gallagher Research & Consulting Group 2008).

The physical distribution of both mainstream and fringe food venues throughout communities has been greatly analyzed in food desert literature. Thomas (2010) conducted a study in which he discovered that 89% of the sample indicated that the distance of food retailers to their home was the most important factor in their decision of where to shop. Consequently, residents of minority groups and/or low socioeconomic status have been shown to have less access to mainstream food venues due to the physical distance they must travel to reach these venues, as well as having less mainstream food venues located in their neighborhoods (Walker et al. 2010; Sparks et al. 2009**)**. These previous studies present a discrepancy in food access between individuals of minority groups and/or lower socioeconomic status. In addition, Hendrickson (2006) found that prices of food in both rural and urban food deserts to be higher than non-food desert areas, as well as being more limited in type and quantity.

Considering both local food from farmers' markets or food available in nearby stores, literature concerning food access documents a few major barriers that have hindered the ability of people to access healthy food, such as fresh produce and other unprocessed foods. The most problematic barriers have been the cost of food and the location of stores and farmers' markets. However, there are distinctive differences in how these and other barriers play out concerning mainstream or alternative food venues, urban or rural communities, and high-income or low-income populations. For this reason, Karen Banks' analysis of food access in the Austin area is particularly relevant to this study (Banks 2011). She focuses on East Austin, which has a higher concentration of minority and low-income populations. In this peri-urban area, the difficulty of accessing

healthy food lies in the makeup of nearby food venues: most are convenience stores and ethnic stores with limited selection rather than full-service grocery stores (Banks 2011).

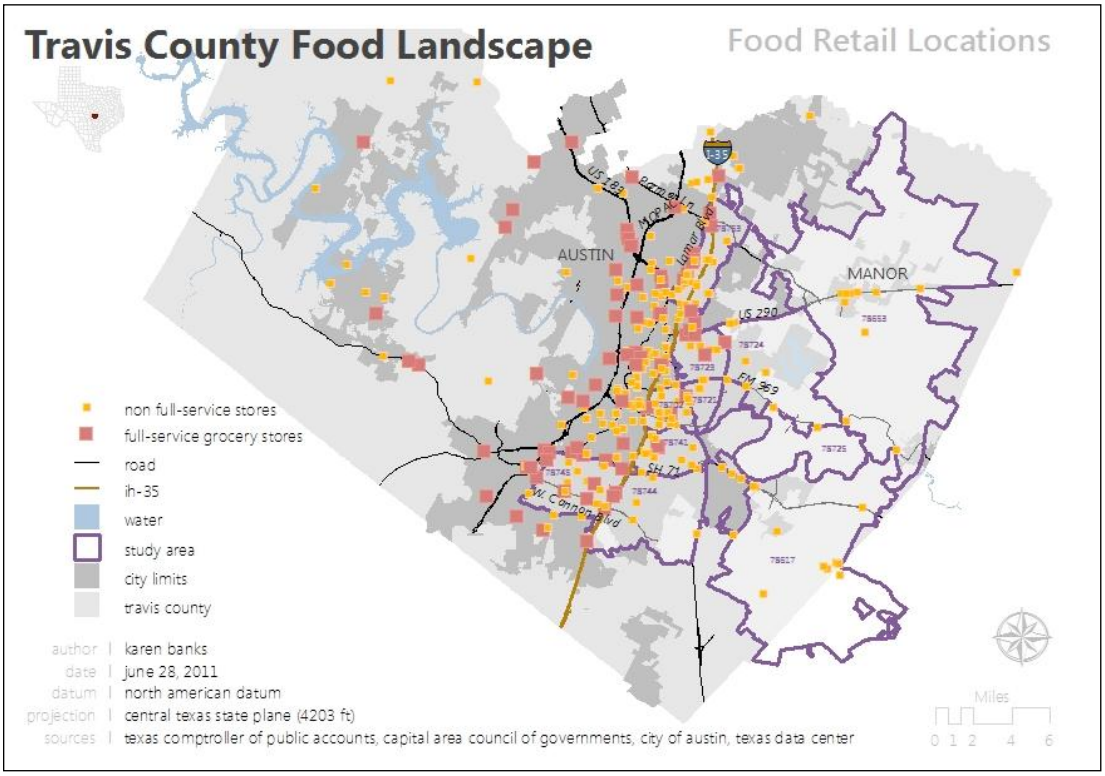

Image 2.2: The Travis County Food Landscape[6]

2.4.2 Cost, Distance, and Convenience

The cost of healthy food is often considered the strongest barrier in the literature (Banks 2011; Colasanti 2010; Macias 2008). However, it seems that price relative to other factors such as place or income is more significant than absolute price (Morton and Smith 2008). Especially for people with low income, prices can limit people's choice in the variety and production method of food that they eat; despite a desire to eat fresh or organic produce, some consumers must choose denser, industrial-made foods that are cheaper and more appealing (Banks 2011). The higher price of food associated with farmers' markets also becomes a barrier, especially to consumers with lower incomes;

this barrier is strengthened by the difficulty (or perceived difficulty) in using coupons at farmers' markets (Banks 2011; Colasanti 2010).

The distance between potential consumers and a grocery store or farmers' market is also a decisive barrier to accessing healthy food. The convenience or even feasibility of making the trip depends heavily on the availability of a car or bus, the travel time it takes to get there, and the possibility of traffic (Banks 2011; Colasanti 2010; Hendrickson et al. 2006; Morton and Smith 2008). Consumers with low income must consider the cost of travel compared with the cost of food, which depends on distance and whether the venue is located along a daily commute or near other sites they frequent (Banks 2011 Colasanti 2010). While consumers who have the time to make a special trip to the farmers' market often consider the location of many farmers' markets in downtown areas an appealing amenity, it is often considered an inconvenience by those who do not (Colasanti 2010).

A common complaint by consumers in Colasanti's focus groups that do not frequent farmers' markets was that the markets hours were inconvenient; most were open only one day a week during business hours, so the only option for those who work is to make a quick trip during their lunch break (Colasanti 2010). Other markets that are open on a weekend discourage young people from visiting who would rather not spend part of the weekend food shopping (Colasanti 2010). Operating hours aside, another obstacle to healthy food for working consumers is the extra time it takes to prepare produce and other unprocessed foods (Macias 2008).

Other barriers surrounding farmers' markets include information and promotion, atmosphere, and ideology. In the studies by Colasanti and Banks, people who do not regularly shop at farmers' markets are generally unaware of the location and time that the

markets are held, indicating a need for better promotion and advertisement such as billboards (Banks 2011; Colasanti 2010). This element of Banks' study is especially important, as it may be a contributing factor to the results of this study. The atmosphere of shopping in a farmers' market is also important to certain consumers; the failure of farmers to exhibit friendliness, especially to minorities, and the difficulty of bringing children discourage groups such as minorities and young parents from attending farmers' markets (Colasanti 2010). Finally, a study by Qazi and Selfa reveals that political ideologies can be a barrier to certain kinds of communities. Modern farmers' markets seem to be associated with liberal and progressive ideologies of modern environmental and sustainable movements (Qazi and Selfa 2005). Thus, where an urban social elite may be receptive to these associations, the more conservative, rural community in the study was resistant to shop at farmers' markets with such associations (Qazi and Selfa 2005).

2.4.3 Income, Location, and Rural-Urban Discrepancies

As it has already been discussed, low-income consumers are frequently affected more severely by obstacles to healthy food than the general population. This discrepancy is shown even more clearly by examinations of areas of poverty; furthermore, some authors have revealed different aspects of food access by focusing on rural and urban distinctions within the frame of poverty (Hendrickson et al. 2006; Morton and Smith 2008). The problem of location is the base from which other barriers arise. In low income and urban areas, the most common food venues are small convenience stores and small ethnic grocery stores rather than large grocery stores; however, in rural areas, there is typically one or a few large chain grocery stores to serve the entire area, but little of anything else

(Hendrickson et al. 2006). Therefore, distance to stores becomes a barrier in different ways: urban dwellers, who do not drive to the stores, are limited by walking distance and bus routes, while those in the rural community must drive long distances to reach the store (Andreyeva et al. 2008; Freedman 2009; Hendrickson et al 2006; Morton and Smith 2008). Furthermore, the tendency of convenience stores in urban areas to have higher prices and the cost of gas for rural residents cause money to be a stronger barrier (Andreyeva et al. 2008; Banks 2011; Freedman 2009; Hendrickson et al. 2006). Finally, the availability and quality of healthy food such as fresh produce are obstacles for these groups. Especially in areas of poverty or low income, smaller convenience stores, and even larger grocery stores in such areas, have been shown to have lower quality produce or none at all (Andreyeva et al. 2008; Banks 2011; Freedman 2009; Hendrickson et al. 2006).

2.4.4 Gender, Class, and Social Constructions

Some of the issues prevalent in the linguistic construction of the alternative food movement are the barriers to access that are established through the use of problematic and racialized language (Guthman 2008). This barrier is multi-fold both in terms of access to the physical site of organic food as well as the perception that organic food is an extension of the "progressive" movement (Qazi and Selfa 2005) and is tied to "radical" movements (Guthman 2003). This cuts across political and class barriers and also hinders efforts to create an effective alternative food movement that adequately addresses the issue of food justice within an environmental justice framework. This language describes the body as it is affected by the food, and also characterizes those who are most fit to

consume organic food. This is both because of the historical implications of agrarian culture within America (Guthman 2003) as well as the class understandings of the term "organic." Claro (2011) posited that it is likely that consumers are basing their understandings of the cost of organic after the prices found in conventional grocery stores.

The drive to create community projects and spaces that serve food deserts is one of the primary goals of the food justice movement, as seen by work done by Guthman, Qazi and Selfman, Alkon and Norgaard, as well as Andreyeva et al., and many others. There has been a trend, however, in the limited participation of people of color due to the way in which whiteness "crowds out" the potential for political projects that effectively address the complex nature of food security (Qazi and Selfa 2005). If the stated goal of the alternative food movement is to foster better access to higher quality food, then it must address the issue of whiteness and racial markers within the current construction of "organic." It must also address the political construction of community gardening and community supported agriculture. Guthman noted that within the movement there exists a problematic situation of identity, namely that while simultaneously reaching out to communities of color, nostalgic images of agrarianism unknowingly invoke racist imagery of a checkered U.S. agricultural history. The irony of teaching black and Latino individuals how to grow and eat foods from the farm (Guthman 2008) is a critical boundary in establishing methods in how to reach to communities that are suffering from food insecurity. This effort to reach communities must be multi-fold in addressing the complex barriers to entry, both racial and otherwise. As Hendrickson noted, it is not just the racialized language that provides disincentives to participate but also a problematic

political understanding of food. This is tied to roots in the hippie and counter-culture movements (Hendrickson 2006) and has dissuaded entrenched communities that may have participated in similar market situations 40 years ago, but are now skeptical due to the political ties that are presently harbored by the terminology of “alternative.” This same issue is found in urban areas wherein white bodies are found to be the most active participants within alternative food, community food, and other projects, providing a dominant whitening of spaces.

In its current construction, “local” and “organic” are also tied to a number of problematic idioms concerning health and distribution. In labeling the food “healthier,” there is an inherent hierarchy established in food – one that is contrived and ultimately exclusionary. “In this view, consumption practices are driven by a conscious reflexivity, such that people monitor, reflect upon and adapt their personal conduct in light of its perceived consequences,“ (Guthman 2003). This reflexive eating is not the stated goal of every consumer and many balk at the attempts made by the marketing of organic and sustainable food to foist this upon the consumer. It is necessary in the construction of this alternative food regime that we promote food security over the implied or understood definitions of health. The possibility for conflation with previous ideals of progressive tendencies to define proper health and existence is high, and the creation of false hierarchies is troubling to the movement as a whole. This health aspect also has the unfortunate effect of presenting organic as a niche product rather than an alternative to the industrial food system (Guthman 2003).

Ultimately, the size of the literature on farmers’ markets, sustainable food, and the local movement begs recognition of the complexity of this phenomenon. While this

proposal does not seek to address all of the topics covered in this literature review, the body of work on the contemporary food landscape necessitates such a summary in order to move forward with empirical research. The following section continues this practice, providing a detailed examination of the places and populations that will be the target of primary research in this study.

3. Case Study Background

Our research focused on three farmers' markets located within the greater Austin area, including downtown Austin, Cedar Park, and Georgetown. According to the US Census Bureau, the metropolitan statistical area (MSA) is Austin - Round Rock - San Marcos. This area encompasses six counties: Bastrop, Caldwell, Hays, Travis and Williamson (U.S. Census Bureau 2012). The focus of our study, however, takes place in Travis and Williamson counties, including the city of Georgetown. Georgetown is often considered to be part of the Austin MSA because it is located just north of Round Rock and has had considerable growth in the past few decades (Executive Office 2009). According to the US Census Bureau, the Austin MSA is rapidly growing, having increased its population to over 1.7 million in 2010 and averaging 3.2% growth annually since the 2000 Census (U.S. Census Bureau 2010).

Figure 3.1: Location of the Study Sites

3.1 Demographic Information for Study Sites: Austin, Cedar Park, and Georgetown

Austin is located in Central Texas along Interstate 35, where the Colorado River crosses the Balcones Escarpment. Through its natural and man-made resources, Austin is geographically diverse. For example, located off of the Colorado River are three man-made lakes: Lady Bird Lake, Lake Austin, and Lake Walter E. Long (Austin: Geography and Climate 2009). Also within the city limits lie the Barton Springs segment of the Edwards Aquifer, part of Lake Travis, and towards the west the rolling hills of the Texas Hill Country (Barton Springs/Edwards Aquifer Conservation District 2010). Austin encompasses 297.9 square miles of land and is a part of Hays, Travis, and Williamson counties. As well as having a self-proclaimed reputation for "weirdness," Austin is renowned as the "Live Music Capital of the World" (Long 2010). Austin hosts a variety of historical and social attractions as home to the Texas state capital, the University of Texas, Austin City Limits Music Festival, South By Southwest Conference and Festival, Zilker Park, and Barton Springs. Often recognized for its commitment to a healthy and environmentally-friendly lifestyle, Austin offers a variety of alternative recreation and shopping options, such as biking lanes, canoe rentals, and an extensive farmers' market network (Swearingen 2011; Long 2010; Austin Farmers Market 2010).

According to the Census Bureau 2010 data, the total population of Austin is 790,390 residents. The racial makeup of Austin residents is 68.3% white, 8.1% African American, 6.3% Asian, and 35.1% Hispanic. The median household income of Austin residents is $50,520 with 18.4% of individuals below the poverty line (see figure 3.2). The unemployment rate is 6.5%, and of individuals 16 years of age and older, 68.5% are

employed. Out of the individuals 25 years of age and older, 85.1% are high school graduates and 44.1% hold a bachelor's degree (U.S. Census Bureau 2010).

Cedar Park is located about 15 miles northwest of Austin. Cedar Park covers 22.85 square miles--less than a tenth of the size of Austin. Most of Cedar Park is located in Williamson County, though the southern part of the city extends to Travis County, where it directly borders Austin. Cedar Park is a blooming community, having grown 400% in the last ten years (City of Cedar Park 2012). Cedar Park attracts families due to its suburban environment, exemplary school district, and proximity to Austin.

According to the 2010 Census, the total population of Cedar Park is also much smaller than Austin, with 48,937 residents as of 2010. The racial makeup of the city is 81.4% white, 4.3% African American, 5.1% Asian, and 19% Hispanic. The median household income in Cedar Park from 2006-2010 was $70,914, with 6.9% of individuals below the poverty line (see figure 3.2). In addition, 69.9% of individuals 16 years of age and older are employed, and the unemployment rate is 6.6%. Out of the residents 25 years of age and older, 94.2% are high school graduates and 40.9% hold a bachelor's degree (U.S. Census Bureau 2010).

Georgetown is located in Williamson County, approximately 15 miles northeast of Cedar Park and is about twice the size of Cedar Park, covering 46.86 square miles. The Balcones Escarpment runs along I-35 in Georgetown, separating Georgetown into the Eastern Blackland Prairie, famous for rich and fertile soil, and the Western Hill Country. The San Gabriel River also runs through Georgetown and sustains the Lake Georgetown Reservoir. In addition, within the city of Georgetown are Southwestern University and Sun City, Texas. Southwestern University is a private, liberal arts university that is home

to about 1,300 students, and Sun City is an age-restricted community that makes up a large portion of Georgetown's residents (City of Georgetown Texas 2012).

The total population of Georgetown is similar to Cedar Park with 47,400 residents. The racial makeup of the city is 86.2% white, 3.7% African American, 1% Asian, and 21.8% Hispanic. The median household income is $60,888 and 9.5% of residents are below the poverty line (see figure 3.2). Of the residents 16 years of age and older, 50.8% are employed, and the unemployment rate, at 6.1%, which is the lowest of the three cities we are studying. Out of the residents 25 years of age and older, 89.3% are high school graduates and 37% hold a bachelor's degree (U.S. Census Bureau 2010).

3.2 Farmers' Market Information for Downtown Austin, Cedar Park, and Georgetown

The Austin farmers' market, run by the Austin Sustainable Food Center, is located in downtown Austin at Republic Square Park. In 2002, various community members joined together to form this market. Because of this support, and along with a grant provided by the City of Austin, the SFC Farmers' Market was able to open in May 2003 (Austin Farmers Market 2010). It is a project of the Sustainable Food Center, which is a non-profit organization located in Austin and founded in 1993. The SFC was created to encourage and provide opportunities for individuals to have access to healthy and sustainable food (Austin Farmers Market 2010). Introducing farmers' markets to certain central areas has improved the access to healthy food for people who would otherwise not be able to purchase it.

The SFC Austin Farmers' Market is currently the largest certified-growers market in the state of Texas. The Downtown market is open from 9:00am-1:00pm every

Saturday, year-round. A wide variety of items are sold at this marketplace, including locally grown produce as well as other food items such as meats, cheeses, and baked goods. In accordance with the SFC's mission statement to provide access to healthy and sustainable food, the SFC Farmers' Market in downtown Austin is part of the WIC-FMNP and also accepts Lone Star (SNAP) food stamps. In an effort to become more accessible to the average consumer, the SFC Austin farmers' market now also accepts debit cards. In the spirit of consumer appeal, these markets also sell non-food items that are often homemade and organic. For example, there are vendors who sell items such as organic soaps and original T-Shirt designs. Additionally, educational outreach programs are provided at the markets as a way to spread knowledge on farming, food, and eating local. There are many things to see and do at this farmers' market that bring the producers and consumers together. For example, a variety of chefs provide the audience members with recipes and cooking demonstrations using the fresh produce at the markets. In merchandise, payment, and outreach, the downtown Austin farmers' market has a lot to offer to its wide variety of consumers (Austin Farmers Market 2010).

The Cedar Park Farmers' Market, also known as Farms to Market (F2M), is located in the Lakeline Mall Parking Lot in Cedar Park, Texas. The market is a member of the Farmers Market Coalition, a non-profit corporation and is managed by F2M Texas, another non-profit corporation that provides local farmers with direct producer-to-consumer market opportunities (Central Texas Media 2010). The Cedar Park Farmers' Market opened in 2010 and is open year-round every Saturday from 9:00am to 1:00pm. The primary goal of the Cedar Park Farmers' Market it to provide Texans with locally grown produce and other healthy food items (Cedar Park Farmers Market 2011). There

are around fifty vendors who participate at the Cedar Park Farmers Market. Some of the items that are sold include fresh produce, baked goods, and tea. Cooked foods such as empanadas are also offered, as well as services such as chiropractic massages. There are also educational demonstrations and other entertainment programs offered, such as soap making and live music. (Cedar Park Farms to Market 2012).

The Georgetown Farmers Market is located in San Gabriel Park in Georgetown, Texas. This market was founded in 1984 and is open on Thursday afternoons from 3:30pm-6:30pm. It is opened seasonally from the first Thursday in April until the week before Thanksgiving (Welcome to GFMA 2012). It was founded as a part of the *Go Texan* program under the Texas Department of Agriculture. This program helps promote Texan farmers and agricultural products by providing customers with information about local agriculture and businesses (About GO TEXAN 2011).

3.3 Differences Among the Farmers' Markets

The three farmers' markets we will be studying are each distinct in accessibility to residents. The most prominent difference is size, with the downtown Austin farmers' market as unquestionably the biggest, taking up the entire acre that is Republic Park (Austin Parks Foundation 2012). Throughout the year, as many as 75 different vendors participate at this market—everything from organic vegetables to bison meat to clay art pieces is sold. While we have not yet attained the average number of attendees at this market, their website claims that it first opened to 3500 patrons (Austin Farmers Market

2010). On the other hand, though the Cedar Park farmers' market is large, it is much smaller in comparison to the downtown Austin farmers' market. Instead of taking place in a city park, the Cedar Park market operates in the parking lot of the popular Lakeline Mall. It has over 50 participating vendors and opened to a crowd of almost 3000 people (KXAN 2010). The Georgetown farmers' market is the smallest of the three. It is located on a small area of land within the San Gabriel Park and hosts an average of 8-15 vendors. While we have not yet found information on how many people typically visit this farmers' market, it is seemingly much less than either that of the downtown Austin or Cedar Park farmers' markets.

In terms of accessibility, the downtown Austin market has the most convenient location for pedestrians and those using public transportation. The public transportation system, Capital Metro, makes it easy to be dropped off within 5 blocks of the market via multiple bus routes. The downtown Austin market is also near one of the stops on the new MetroRail, a high-speed rail system that travels between downtown Austin and the city of Leander (Capital Metro Transit 2012). Additionally, the market is easy to navigate on foot because of its location in the center of downtown Austin, where there are street lights and crosswalks at every intersection and sidewalks designed for pedestrians. It is, however, more difficult to park a car near the downtown Austin market since street parking there is limited and parking garages nearby are expensive.

Unlike the Austin market, the Cedar Park market is not in the middle of a downtown area, and thus is not as accessible for some people. Nonetheless, the MetroRail makes a stop very close to the Cedar Park market, and there are also buses at this station that take the rider directly to the location of the market. The Cedar Park market is also

very accessible by car since it is next to Highway 183 and located within a parking lot where patrons can easily park their cars. Georgetown, however, is much less accessible. The city of Georgetown has no real efficient or reliable public transportation system and, because the city is so spread out, the market is walking distance only for a few nearby neighborhoods and the Southwestern University campus. Furthermore, the market is not located near any highways or other landmark of convenience, and the driving routes to get to this market are often indirect.

In terms of economic accessibility, while all three markets accept SNAP payments, only the downtown Austin market accepts WIC payments. The downtown Austin market is also the only of the three that accepts credit cards. Further research into a price comparison study will show whether these farmers' markets are reasonably affordable as opposed to grocery stores. Additionally, our research hopes to show the characteristic differences in farmers' markets in these different localities. This will hopefully aid the academic community in determining whether farmers' markets are either a monolith or a heterogeneous entity.

4. Methods, Scope, and Limitations

Our study will take a two-pronged approach to analyzing farmers' markets in the greater Austin area. We will conduct a price comparison study of local grocery stores' prices (including natural grocers) and compare those to prices at the Austin, Georgetown, and Cedar Park farmers' markets. Additionally, we will administer a survey to individuals attending the farmers' markets to better understand their perceived advantages of attending and shopping there.

4.1 Price Comparison Study

During our study, each of the three farmers' markets will be visited on separate dates. For each of those farmers' markets, we have identified two grocery stores in the nearby area with which we can compare prices. We will collect prices from both a conventional grocery store and natural grocer. H-E-B was chosen as the representative for the conventional grocery store because of its prominence across the state. With locations in more than 150 communities around Texas, H-E-B is a supermarket chain that is located near all three farmers' markets we are studying (About Us 2012). As for the natural grocer, we chose to inventory products from Whole Foods and Sprouts. Whole Foods is widely considered to be a health food retailer, marketing their store to sell the highest quality of natural and organic products (Whole Foods Market: Natural and Organic Grocery 2012). Because Whole Foods does not have as many locations as H-E-B and is not located in all the areas of our study, we have decided to also include Sprouts in our study. Sprouts currently has 21 locations around the state of Texas. While they advertise

their stores as farmers' markets, they are actually supermarkets inspired by farmers' markets, dedicated to selling natural and organic foods at low prices (About Sprouts 2011).

At each of the farmers' markets, we will record the prices of 10-15 items that will likely also be found at the local grocery store and natural grocer and that seem to be most popular among the consumers of that particular market. We will compare these prices with the prices of similar products at H-E-B and Sprouts or Whole Foods. We will standardize the prices by recording the price in relation to the weight of the product. This process will be repeated at a later date to account for potential price differences due to temporary sales or price reductions. Additionally, as a means of standardizing quality as well as price, methods of production will be taken into consideration when selecting the items to compare. For example, items with labels such as local, free-range, USDA certified organic, antibiotic-free, or hormone-free will be compared with other items having the same label. Once qualitative measurements are taken into account, average costs will be calculated for each item. Statistical analyses will then be performed to evaluate any significant price differences between each item and retailer. For the actual field guide used while conducting the price comparison study, see Appendix C.

4.2 Survey of Farmers' Market Attendees

In order to distribute surveys, a table will be set up at each farmers' market with a sign indicating that a survey is being conducted. Customers that pass by will be asked if they would like to participate in a survey. If they consent, they will have the choice of either taking the survey themselves or being read the questions, while their responses are

recorded. Surveys will be printed in both English and Spanish in order to be more accessible to a wider variety of patrons. The survey will be one page double-sided and will consist of ten questions. The questions that will be included on the survey will be chosen and written in a manner to best determine the motivations that urge consumers to shop at farmers' markets. In addition, some questions will aim to identify the extent to which people are committed to buying local food and their willingness to pay more for certain factors of local food. Finally, we will include some questions that were suggested by the farmers' market vendors themselves as a means of helping the vendors improve marketing and the progression of their farmers' market. For example, one such question will ask whether people shop with friends, family, pets, or by themselves; this question was proposed by farmers' market vendors in order to determine how to better market to their particular audience (see Appendix A for the farmers' market survey form in English. For the Spanish version of this form, see Appendix B). Another question concerns the mode of transportation the patrons took to the farmers' market. The Downtown Austin Farmers' Market survey will be conducted on Saturday, March 3; the Cedar Park Farmers' Market on Saturday, March 24; and the Georgetown Farmers' Market on Thursday, April 5.

4.3 Scope and Limitations

As with all studies that seek to explore new ground and pose unanswered questions, it is important that we establish the scope of our subject matter and the limitations of our research. One of the limitations of this study will be the time frame. Whereas other price comparison studies have been conducted in the summertime during peak growing season,

our study will take place in the spring, at the beginning of the growing season (Claro 2011; Pirog and McCann 2009). However, because of its southern location, the Texas growing season is long, allowing farmers to begin harvesting earlier than in other areas in the country. Although seasonality can be a factor in produce prices, the extended growing season in Texas allows flexibility in the timing of this study.

Though our price comparison analysis will be conducted on two different days for each market, we will only be conducting the survey at each market once. Nonetheless, we recognize that certain dates and their respective days of the week might affect not only the kinds of produce presented, but also the kinds of customers that come to such farmers' markets.

Other limitations of the study concern the researchers' ability to ensure the similarity of products between food providers in each city. If scales are not available to measure a pound of product that is not sold by weight, we may not be able to include the item in our study because of the difficulty in standardizing the measurement. For our price comparison, we will attempt to examine an even distribution of items at farmers' markets by selecting produce from more than one vendor for each item when possible. We expect this will be most difficult at the Georgetown Farmers' Market because it has the fewest number of vendors.

Finally, assigning certain qualities such as "local," "organic," "cage-free," or "grass-fed" to items will require some discernment. There are discrepancies and overlaps in labeling and certification as well as in the perception of these qualities by producers and consumers, which makes comparison difficult. Because the concept of "local" food is central to our study, we will question producers about what their conception of "local"

means. Consumer perspectives on this subject may also be gathered from the survey. However, there are difficulties in obtaining such information; for instance, we do not have access to definitions of "local" or guidelines for labels at grocery stores. Additionally, farmers' markets are less likely to advertise their products with labels such as "local," so we will interview the vendors to gather information on how and where their items were produced (Claro 2011).

The actual locations of the farmers' markets are also limitations of this study. While the farmers' markets we will study are diverse, we must acknowledge that they are all still within Central Texas. In an ideal study, farmers' markets from different regions of the country would be analyzed in order to gain a fuller picture of how farmers' markets vary from one another. However, due to lack of time and resources, we will stay within the larger Austin metropolitan area.

The fact that the three farmers' markets are in different areas will be both a benefit and a challenge for our research. While it is helpful that the farmers markets are in diverse areas, it also makes it more difficult to homogenize and control the other variables. Chief among these is the choice of natural grocers. It is important to note that the city of Georgetown has no retailer that fits into our definition of a natural grocer. The Sprouts market we will be studying instead is located in the neighboring city of Round Rock, about fifteen minutes driving distance from central Georgetown.

Defining a store to be a natural grocer is, in itself, problematic. Many would argue that H-E-B is partially a natural grocer since it can offer local and organic selections. We chose Whole Foods and Sprouts for this category because the idea of natural, healthy choices is much more prominently displayed in these stores than in H-E-

B or other grocery stores. Additionally, while we are treating Whole Foods and Sprouts equally, the stores are, in fact, very different. The Sprouts market is chiefly made up of produce and products in bulk, with small amounts of dairy, meat, vitamins and pre-processed foods. Whole Foods, on the other hand, is significantly more expansive and offers many more options. While produce is certainly present at Whole Foods, it is by no means the most prominent area of the store as it is in Sprouts. Whole Foods, specifically the market in downtown Austin, features a wide array of different products, including shoes, a large selection of chocolates, sushi, pre-made salads, and various restaurants and smoothie bars. We will attempt to take these differences into account when researching their prices, but this will inevitably be a limitation of our study.

4.4 Proposed Timeline of Research:

- March 2 Submit proposal for Student Work Symposium.
- March 3 Fieldwork at Downtown Austin FM in Coordination with SFC.
- March 5 Data Analysis and Interpretation
- March 23 Presentation and Formatting of Data
- March 2 Fieldwork at Cedar Park FM in coordination with CPF2M.
- March 30 Survey Results and Price Comparison Data Analysis
- April 4 Student Work Symposium (5:00 PM)
- April 5 Fieldwork at Georgetown FM in Coordination with GFMA.
- April 12 Price Comparison Study of Georgetown (Round 2)
- April 13 Survey Data Analysis Finalized
- April 14 Price Comparison Study of Cedar Park and Austin (Round 2)
- April 20 Results Section Drafted; Final Writing Duties Assigned
- April 27 Draft of Manuscript Due
- May 4 Final Draft Manuscript Due and Submitted to Scholarly Journal

5. Conclusion

As stated previously, the goal of this research is to examine specific issues related to local food networks and sustainable agriculture in Central Texas. This proposal is the first step in that process. This document was written to provide the historical information, review of scholarly literature, and methodologies necessary to justify and carry out a study of local, sustainable food networks in Central Texas. It is our intent to provide empirical information to our immediate community and our region in a way that promotes increased understanding and awareness of local, sustainable food. Additionally, we hope that this research contributes thoughtfully and critically to the current literature, and that our investigation encourages further analysis of these issues.

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Appendix A: Farmers Market Survey (English)

Farmers Market Survey

This survey is voluntary and anonymous. You may choose to answer as many or as few questions as you like. All personal information will remain confidential. This survey takes approx 5-10min., but If you would like to stop the survey at any time for any reason, you may. You may take your responses with you. If you prefer, you can list your email address and we will email this survey to you.

1. How frequently do you visit this farmers' market?

_____ Weekly
_____ 1-3 times per month
_____ 2-4 times per year
_____ Other, please specify in the space below:
_____
_____

2. Approximately how far (in miles) do you normally travel to this market? _____

3. What mode of transportation did you use to arrive at the farmers' market today?

_____ Car
_____ Public Transportation
_____ Walking
_____ Bicycle
_____ Other

4. What is your home zip code? _____

5. Is distance and/or convenience a factor in your decision to visit this market?

_____ Yes
_____ No
Other (explain): _____
_____
_____

6. How do you prefer to shop at this farmers' market?

_____ with friends
_____ with pet(s)
_____ with family
_____ by yourself
_____ other please explain:
_____

7. In your opinion, are most items more or less expensive at the farmers' market than at your local grocery store?

8. What is the most important quality or qualities you look for in the items you purchase? (examples: Organic, Local, GMO-free, taste, appearance, selection, etc.) Would you be willing to pay more for these qualities?

9. As briefly as possible, please list the advantages of the following:

Farmers' Market	Conventional Grocery Store

10. Is there anything else that you would like to say about this farmers' market or about local/sustainable food?

Appendix B: Farmers Market Survey (Spanish)

Encuesta de Mercados de Productores

Esta encuesta es voluntaria y anónima. Usted puede optar por responder a tantas o tan pocas preguntas que desee. Quedará confidencial cualquier dato personal. La encuesta llevará unos 5-10 minutos. Ud. puede dejar de hacer la encuesta en cualquier momento por cualquier motivo y llevársela si quiere. [¿?]

Si prefiere, puede apuntar su dirección de correo electrónico y le mandaremos esta encuesta por correo.

1¿Con qué frecuencia compra Ud. en este mercado?

_____ Una vez a la semana
_____ 1 a 3 veces al mes
_____ 2 a 4 veces al año
_____ Otro, favor de especificar a continuación

2. ¿A cuántas millas está este mercado de su casa?

3. ¿Cómo llegó a este mercado hoy?

_____ En coche
_____ A pie
_____ Transporte público
_____ En bicicleta
_____ Otro medio de transporte

4. ¿Cuál es el código postal de su casa? _____

5. ¿Es la distancia y / o conveniencia un factor en su decisión de comprar en este mercado?

_____ Sí **Otro, favor de explicar a continuación:_____**
_____ No

_____

_____

6. ¿De qué manera prefiere comprar en este mercado?

_____ con los amigos **_____ solo** **_____ otro, favor de explicar**

_____ con la familia **_____ con la mascota**

7.En su opinión son los alimentos más o menos caros en este mercado que en el supermercado?

8.¿Qué cualidad (o cualidades) busca Ud. en los productos que compra (por ejemplo: que sean orgánicos, locales, o no transgénicos; o considera el sabor, la apariencia, la selección)?

9. Por favor, haga una lista de estos dos tipos de mercado:

Un mercado de productores	**Un supermercado convencional**

10. ¿Tiene Ud. otro comentario en cuanto a este mercado o sobre la agricultura local o sostenible en general?

Appendix C: Field Guide for Price Comparison Study

Price Comparison Study Methods:

At Farmers' Market:

1. Select 10-15 items at the FM from at least 7 different vendors.

2. Take note of price. Take note if it is on sale or if there are specials.

3. Ask the vendor about his/her growing practices.
   - How would they identify or label their practices (e.g. organic, beyond organic, GMO-free, etc.)?
   - Ask for the location of the farm to determine degree of "local".

4. Weigh every item in detail (in lbs. and oz.). If the product is in a "bunch" or another unit of measurement, make sure you weigh it to note the difference. We'll be comparing "bunches" at grocery stores and FMs to see who has the heavier "bunch."

5. If applicable, make some notes about the quality of the produce. Is it fresh? Wilted? Bruised? Is there damage? Is it brown or grey?

At HEB and Natural Grocer:

1. Select 10-15 "like" items based upon similar growing practices, location, etc.

2. Write down the price. Take note if it is on sale.

3. Note all similarities and differences between "like" items. For instance, if the FM vendor described their practice as "beyond organic," and the retailer is USDA certified, make sure you take note. If you can find the same item but with different growing practices, make sure you note all differences (for example, if the FM carrots are "chemical free" and at the store they are conventional, take note).

4. Make sure to weigh every item in detail (in lbs. and oz.). Also make sure to shake off any excess water weight!

5. If applicable, make some notes about the quality of the produce. Is it fresh? Wilted? Bruised? Is there damage? Is it brown or grey