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Obtaining Consumer Perceptions of External Costs of “Cheap” Food Products and Analyzing Quality Food Markets that Minimize External Costs in Bloomington-Normal, Illinois

Jennifer Long '13

Illinois Wesleyan University

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Obtaining Consumer Perceptions of External Costs of “Cheap” Food Products and Analyzing Quality Food Markets that Minimize External Costs in Bloomington-Normal, Illinois

Jennifer Long
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Abstract: Today, the United States’ food system is primarily a large industrial operation with smaller-scale community-based food systems. Although the **industrial food system** has benefitted society by increasing the amount of food available for every person, some of these products are “cheap” food products that generate **external costs**, such as poor health, potential wealth loss to farmers and environmental degradation. With over 1 billion individuals on earth undernourished and 15.8% of all U.S. households as of 2010 food insecure [Patel, 2012], this system has not completely solved food issues. **Community-based food systems**, on the other hand, minimize external costs by aiming to benefit the economic, environmental, and social health of communities. **Quality food markets** are defined in this study as locations within these smaller systems where local and quality food is sold and where consumer demand can affect supply and strengthen the smaller system. The primary purpose of this research was to learn what consumers understand about the external costs to “cheap” food and assesses quality food markets that minimize these external costs in the Bloomington-Normal, Illinois community. An **in-depth literature review** was conducted to understand what is known about this topic. **Personal observation** was conducted at quality food markets in Bloomington-Normal, IL to assess what experiences consumers were having at these locations. **Fifteen key informant interviews** were conducted, **twenty-seven consumer interviews**, and a **consumer survey** was circulated to the Green Top Grocery mailing list (those interested in food cooperative efforts in Bloomington-Normal, IL) and was completed by 248 consumers at an 18% response rate. **The results** helped identify the ability of the community-based food system to minimize the external costs of the industrial food system. Consumer interviews and the survey revealed information on how the consumer sample makes food-purchasing decisions based on criteria such as quality and price and that there is a range of understanding for the external costs of “cheap” food. This methodology also helped reveal strategies to continue moving similar community systems forward by adding or supporting quality food markets, and through understanding consumers and their food purchasing decisions. Such strategies may help minimize the external costs of the U.S. industrial food system.

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Introduction

Today, the United States' food system is primarily a large industrial operation that can generate external costs from “cheap” food. “Cheap” or artificially low-priced foods refer to more than dollar amounts because the price of the food product may not account for external costs. External costs refer to negative economic, environmental and social effects that can develop as the result of food system organization. Examples of external costs of this industrial operation include potential revenue loss to the national economy, inadequate pay for small agricultural producers, environmental degradation, and harm to human and animal health.

A recent assessment of the businesses in markets that relate to food reveals that a few corporations, such as the beef packing, seed, and pesticide markets, have power over the greatest portions of the markets [Patel, 2012, 2]. With majority control over food-related markets and the desire for the cheapest production [Goleman, 2009, 73], these corporations achieve high product yields for less money. Low cost production allows corporations to sell their “cheap” products at lower prices than their competition. These large amounts of cheaply produced products are not high-quality goods and are sold at artificially low-prices to consumers. Examples of cheaply produced food products are factory farmed eggs and chicken which are cheaper to produce, often subsidized by the government, and sold at low prices to customers. Consumers are purchasing “cheap” food products at prices that do not account for external costs.

External costs from “cheap” food products (e.g. basic crops and processed foods) are invisible to consumers. Price is one thing people understand [Goleman, 2009, 72], one of main concerns of consumers when making purchasing decisions [Glanz, Basil, Maibach, Goldberg, Snyder, 1998, 1125] and affects the food product market. However, consumers may not be aware of external costs to some of the “cheap” food they purchase. The continued sale of artificially low-priced food and accompanying consumer purchasing decisions are threats to economic, environmental and social health and can be compromising to a community.

The U.S. food system makes it more difficult for smaller-scale food systems, such as at the community level, to prosper. A community can minimize the external costs of the United States food system by organizing and strengthening its community-based food system. A local food system requires that food products sold come from local sources. A community-based food system has local production as a goal but also aims for the economic, environmental, and social health of the entire community [cornell.edu]. Within these community-based food systems in the U.S., there are models of quality food markets that minimize external costs. A quality food market is a term used to describe stores, programs, markets, and cooperatives [cornell.edu] etc. that reduce external costs; it does not include large corporate-owned supermarkets. An emphasis on community-based food system solutions acknowledges the many participants in the system, especially the agricultural producers and consumers. These participants can influence the system with their production practices and purchasing decisions, respectively. With quality food markets and consumer support, community-based food systems are able to minimize external costs and maintain community health compromised by the U.S. food system.

In order to better understand consumer perceptions of external costs to “cheap” food, I examine consumer perceptions of external costs in the community of Bloomington-Normal, Illinois. I also analyze quality food market models that minimize external costs that are present in the local community and examples from other communities that could be utilized. It is my hope

that the results of the study will yield an approach that will help consumers understand external costs, alter their purchasing decisions, and benefit community health by moving the community-based food system forward. For the purposes of this research, I am working with Elaine Sebald of the Edible Economy Project, a project that aims to increase the self-sufficiency of the Central Illinois Region. They do this by making sure money stays in the community and by creating a partnership between farmers, institutions, community members and developing local facilities for production, distribution and processing. The Edible Economy's current project involves developing a food co-operative in the Bloomington-Normal area. Elaine and the Edible Economy are interested in gathering information regarding consumer perceptions of external costs and finding approaches to strengthening the community food system.

In order to better understand the issues of the U.S. food system, community models that minimize external costs and consumer perceptions and behavior, I examine the literature about this topic. I begin with a discussion of the industrialized U.S. food system and some of the resulting external costs. I also discuss concepts surrounding hunger and recommendations for minimizing external costs. I elaborate on quality food markets, the role of consumers and their purchasing decisions. After which, I explain my methodology for pursuing consumer perceptions of external costs of "cheap" food in the community of Bloomington-Normal, IL. After the collection of information, I discuss data obtained regarding consumer perceptions and make recommendations for quality food markets in the community and further steps to benefit community health.

Literature Review

Access to food, a necessity for humans, is determined by food systems. The organization of a food system determines each individual's access to food, which affects the amount of energy present for daily human processes and quality of life. With over one billion people on the planet undernourished and even more with issues of access to food [Patel, 2012, 1], food issues are visible and analyzing food systems is an important task.¹ Food systems are not isolated; they operate within and influence other systems such as the economic system and the mechanism by which wealth is distributed. Ideally, food systems, which overlap at local, regional, national, and at the global level, would provide the food to meet human health needs and allow each person equitable access to food, maintain the health of ecosystems, and provide an economic structure that does not produce negative effects.

There have been a number of developments within the United States food system that have improved efficiencies in production and distribution in an effort to tackle hunger. This industrialized system has had a number of successes including the production of more food. Regardless, access to food for each person is not equal. In addition, the industrial operation also generates external costs from "cheap" food that are invisible to consumers. To minimize the external costs of the industrial system, different communities have strengthened their

¹ A food system consists of the processes that develop food products and every actor that participates in the system. The development of food products relies on the input, instruments and infrastructure in place for food production, processing and packaging, distribution and retailing, consumption and disposal of food, and actors in this development include, agricultural producers and workers, industries, governments, institutional purchasers, communities and consumers [APHA].

community-based food system. The adoption of one or more quality food markets can allow a community to begin eliminating external costs from the U.S. industrial food system. The role of consumers is also important because their purchasing decisions affect what continues to be sold and where [Steier, 2011, 165]. If more community residents were aware of these external costs and made informed purchasing decisions, their demand would help develop a community-based food system that minimizes external costs and benefits community health.

This literature review will cover the external costs of the industrial U.S. food system. It will then discuss food access and actions taken to minimize external costs. The community-based food system will be discussed. The literature review will also cover the role of the consumer and their purchases of healthy food items, purchasing of wellness products and behavior change.

External Costs of the United States Food System

The industrial food system in the United States has made advancements in production and distribution and has greatly increased the amount of food available to the nation since 1970 [French, et al., 2001, 309]. This has been continued with the 2000 Millennium Development Goals developed by the United Nations, with the first goal to eradicate extreme poverty and hunger by the year 2015 [McMichael, Schneider, 2011, 119]. Increased food production was seen as a way to feed the hungry [Patel, 2012, 1] and the U.S. food system focused on improving productivity. Although productivity has increased, the Millennium Development Goals have only been accomplished to an extent, and the system has resulted in some negative effects. Although these external costs are not characteristic of every industrial food product, they can affect the health of animals, humans, and the environment. The term also regards negative effects on the livelihood of smaller agricultural producers and the economy. The following information is not all-inclusive, but attempts to give a foundation of a variety of issues that result from the current national food system.

Economic Effects

Although large corporations procure revenue from the industrial food system, other participants in the economic system suffer as a result of the externalization of cost. Externality is a word that describes the external costs that are not paid for within the sale of a product. Externalities are described as market failures; they are costs that do not get covered by transactions and over time they will catch up to the market. If these unpaid costs remain unaccounted for, the economy will fail. Instead of taking responsibility for externalities, large food corporations shift the burden of these external costs of food production to people or consumers [Steier, 2011], in the form of health and poor nutrition. Furthermore, farmers do not get paid adequately for their services.

According to the author of *Ecological Intelligence* who evaluated market forces and their relation to sustainability, “Price is one thing we understand, so costs become the singular driving force in how things are made and marketed” [Goleman, 2009, 72]. For this reason, low prices are the goal of corporations and large agribusinesses. They use production practices that allow them to produce for cheaper costs than others and increase their level of competition relative to other smaller-scale agricultural producers. They are then able to make their goods cheaper, which is appealing to consumers. The consumers may get food products for low prices but they pay for the externalized costs in their health, their health care and other taxes. “Cheap” food products externalize costs, while food that account for these external costs internalize them and sometimes have higher prices up front than industrially- produced food products. Although the prices are

cheaper, people pay the external costs with their health and end up making up that amount in taxes to pay for health care and other institutions.

The market functions in its most simple form in a ‘virtuous cycle.’ supply and demand is orchestrated by the purchasing power of the consumer, which then determines what is produced, how much is produced and prices charged, which returns full circle to affect the consumer [Goleman, 2009, 134]. In theory, if consumers were to only demand one item, such as organic or local goods, then, it would be the product produced and supplied. If consumers were willing to pay up front for a product that internalized the cost then these products would be supplied. Nevertheless, the reality remains that one individual does not have control over the market, but many individuals could make a difference.

The livelihood of small agricultural producers is threatened in a system of industrial food production. Corporations want to reduce transaction costs so their support goes towards the largest producers and the smaller farms are at a competitive disadvantage [Leopold, 2003]. The farmer becomes a raw material supplier and a “pricetaker,” they do not have as much market power as processors, distributors, etc [Leopold, 2006]. The ability of farmers to earn money has decreased; farmers have been spending their gross income and subsidies from the government to pay bills [Leopold, 2003]. Farmers cannot make enough money to cover their living expenses and with pressure to add more production units, animals, acres, etc, to try and pay past bills, “little attention has been paid to motivating farmers to use their land well” [Leopold, 2003]. Furthermore, the households of small farms rely on income that is off the farm [www.ers.usda.gov] and they can no longer primarily rely on their farms.

In a study of farms in Iowa, the greatest percentage loss of farm operators was among a middle range of acreage owned. “The total percentage of sales for farms under 100 acres and over 1000 acres increased between 40 and 55 percent” [Leopold, 2003]. Therefore the middle ranges, that cannot involve themselves profitably in direct markets (e.g. selling directly to consumers at farmers markets) or markets available through ‘vertically-integrated, multi-national firms,’ are declining and not profiting [Leopold, 2003]. Middle range farmers have declined as the result of industrial farming competition, because they have to make \$50,000 in sales in order to be independent [Leopold, 2005]. Government subsidies are a large part of the income [Leopold, 2005]. Similar trends of a loss of agriculture in the middle are happening in other Midwest states.

The U.S. industrial food system externalizes the cost of food in some of their food products. If external costs are not accounted for, workers and consumers bear the cost on their livelihood or health. As a result of industrial food production, smaller producers have trouble earning profits and many of the mid-sized farms are in debt. As a result of the lack of money, government subsidies are relied on and in an effort to pay off bills; farmers do not use their land well. If consumers were more aware of how their purchasing decisions affected the market and how their food product demand could affect what food products are supplied, it could alter the current system where large agribusinesses dominate and incur profit and smaller agricultural producers suffer.

Animal Health

Livestock raising is one area that has improved efficiencies but has resulted in adverse effects on animal health. Today, the entirety of domesticated livestock, especially ruminants, has

a global biomass that exceeds humans, and intensive raising is the result of a high demand from a growing human population [Janzen, 2011]. Therefore, livestock raising is prevalent today and there is high demand for it. Social benefits as a result of their production include nutritional advantages, cultural richness, and aesthetic value; there are also ecosystem benefits that will be discussed later. Meat, milk and other animal products provide nutritional value beyond energy, “accounting for about a third of the protein consumed by humans globally” [Janzen, 2011]. It is also argued that livestock production produces cultural richness by providing a person’s livelihood [Janzen, 2011]. Lastly, their presence on landscapes has been described as alluring to tourists and ‘enhance the appeal of the countryside’ [Janzen, 2011]. These alleged benefits contribute to high livestock demand.

One of the ways that demand for animal products, meat and milk has been met is with intense livestock raising in the form of factory farms. These concentrated operations allow for the swift production of meat at relatively low costs. In this example of external costs, the cost of production is externalized onto animal health. In Johnathan Safran Foer’s, *Eating Animals*, he describes Concentrated Animal Feeding Operations (CAFOs) and describes the harm afflicted upon the animals within these industrial operations. CAFOs can include tightly packed livestock in cages void of light or space, injections of growth hormones for unnaturally fast growth (to produce meat, eggs, and milk faster), and medication if disease appears so that no money is lost in their production [Foer, 2009]. His account of industrial agriculture is reminiscent of Upton Sinclair’s *The Jungle*, which continues to be referenced for the depicted mistreatment of animals and poor working conditions since it was published in 1906.

A carton of eggs can be utilized to illustrate this external cost. For example, a supermarket sells eggs produced by many sources. Factory farmed eggs will be most commonly sold, although increasingly ‘cage-free,’ ‘organic,’ and ‘free range eggs’ which are typically marked on the packaging are available at farmers’ markets and other locations. Factory farmed eggs with hens raised within confined areas can have more cholesterol and saturated fat than eggs from hens raised on pasture, they can also have 7 times less beta carotene, 2/3 less vitamin A, 3 times less vitamin E, 2 times less omega 3s which are important to human health [Prairieerth Farm, 2012]. The hens raised on pasture have more freedom, and are able to grow and produce eggs naturally. Their health is not compromised by the desire for higher production yields. This production internalizes the costs of meat and milk.

These practices are often condoned and perpetuated by large corporations and are protected by state laws. Common Farming Exemptions (CFEs) make any method of animal raising practices legal as long as they are commonly practiced in the industry [Foer, 2009]. Therefore the corporate-run markets get to define cruel animal treatment as acceptable, spread the practices, and legalize them. This low price production, allows large agribusinesses that use concentrated operations to have higher yields at lower costs [Goleman, 2009, 73]. With a high-product yield for cheap prices these large agribusinesses can be very competitive in the market and sell products at low prices. These “cheap” foods may be purchased regardless of whether consumers understand these common practices and as a result, animal health continues to suffer in food production. It appears that as the corporations strive for high rates of production and profit, animal health and by extension, human health may suffer.

Human Health

Hunger is often understood as ‘undernourishment’ or ‘lack of food security,’ [Patel, 2012, 1]. Undernourishment is an individual suffering; it refers to an amount of food consumption that does not meet the minimum requirements for health and activity and affects approximately one seventh of the global population [Patel, 2012, 1]. Food security refers to an individual’s access to and power over their food but can be seen as a community suffering. Researchers have spent time figuring out the causes of hunger. Some have proposed that hunger is the result of a deficit in global food production [Patel, 2012, 1], but even as food production has advanced, hunger is still an issue. Hunger is a food issue that food systems attempt to solve with industrial production, but have not succeeded completely.

Industrial production has increased vegetable production and other nutrient-rich or healthy food items are more available; yet healthier foods are still consumed below recommended levels [French, Story, Jeffery, 2001, 311]. Industrial production has also ensured unhealthy foods are more available (i.e. soft drinks are replacing milk consumption [French, et al., 2001, 309]). Along with their availability; the majority of food spending is on food with sweets, fats, and oils [www.ers.usda.gov] which should not be large portions of our diets.² Industrial production has made different foods more available, yet there is still hunger, so the advancement of food production has not solved the problem completely. The term “food deserts” will be explored later, which will describe the different accessibility in communities. Purchasing decisions that benefit human health are not made or cannot be made in certain communities. Some do not have access to enough food and others are not consuming the recommended levels of nutrient-rich food even though more food is available, and it is affecting their health.

In 2010, the United States Department of Agriculture (USDA) in conjunction with the Organization for Economic Cooperation and Development (OECD), published statistics that looked at international consumption habits of the U.S., France, Spain, and Germany. According to these results, the U.S. is leading in percentages of diabetic adults, obese adults, overweight and/or obese adults, deaths from heart disease and stroke and income inequality [Philpott, 2010][Appendix A]. Obesity and poor diets such as one that is high in fat and cholesterol (available with unhealthy foods), as well as physical inactivity, have been determined to be underlying risk factors for diabetes which can later influence the onset of cardiovascular disease [Grundy, 2005], the number one cause of death in America [www.cdc.gov]. Even with the availability of more foods from the industrial food system, human health in America suffers.

The only percentage the U.S. has below others is the portion of disposable income spent on food [Appendix A]. This percentage highlights that the amount of food spending in America is disproportionately lower than in other countries but it does not mean that we have the cheapest food [Fred Kirschenmann, 2005]. However, it does refer to the fact that Americans are not devoting a lot of disposable income to food and are suffering a number of diseases as a result of what they do have access to and are purchasing. Income inequality is another percentage in which the United States leads; this reality may speak to some of the disparities in food spending of disposable income.

² Getting a certain number of servings from fruit and vegetables is a key indicator of health because they are nutrient-dense foods [Lichtenstein, et al. 2006, 5]. Consumption of nutrient-dense foods and beverages will benefit diets and minimize health problems that result from consumption of high sodium and calorie consumption from fats, sugars, and refined grains [Lichtenstein, et al. 2006, 5], will not.

As of 2010, the American family and individual were only spending 9.4% of their income on food. The portion of income dedicated to food spending has substantially decreased [French, et al., 2001, 218] from totals closer to 25% earlier in the 1900s [www.ers.epa.gov]. Even though portions have declined, more money has always been spent on “food-at-home” compared with “food-away-from-home.” Of the 9.4% of income spent on food in 2010, 5.5% was “food-at-home” [www.ers.usda.gov]. Food-at-home consists of raw materials and processed goods purchased in supermarkets and quality food markets and prepared at home while food-away-from-home is purchased at restaurants, fast-food restaurants and convenience stores. This research will focus on food-at-home locations, because the items sold in those locations are where the majority of food purchasing occurs. It is with food-at-home purchases, that consumers can demand certain products and more effectively alter the supply, [Steier, 2011, 165] and by extension, the food system.

Even as industrial food production has increased the availability of a variety of different foods, hunger remains. Human health suffers and Americans have higher percentages of food-related diseases than other industrialized nations. In addition, on average Americans spend low amounts of their disposable income on food-at-home. If more disposable income was spent on food-at-home that didn't harm human health, demand for these products would alter the supply of food products, and the food system would change.

Environmental Degradation

Although the modern U.S. food system has made its practices more efficient, it also can create extensive environmental damages in production, distribution, and consumption. The environmental degradation can be seen on different scales if one looks at a specific community or the whole nation. This section will focus on U.S. environmental degradation from food processes, in which, farmers have become industrialists to make food cheaper and feed more people [Steier, 2011, 172].

Agriculture has been around for 10,000 years and some of the more recent industrial practices are causing long-lasting harm to the environment. These industrial practices do not resemble the examples of communities all over the globe that provide a more environmentally sustainable model of food production and consumption [Goleman, 2009, 41]. Goleman describes the community of Sher, Tibet, which has a healthy environment after 1000 years as a result of their use of building materials from the local environment, subsistence agriculture practices, responsible tree planting and appropriate irrigation channels for their latitude [Golman, 2009, 41]. Although some of these communities have populations of a few hundred or thousand, they provide models of food systems and agriculture that minimize harm to the environment.

Environmental Degradation-Resource Use

In general, for the production of food, natural resources are limited and agriculture is a resource-intensive process. For example, water is essential to all of earth's processes, every species on the planet, and agriculture, but the resource is limited. Of all the water on the earth only about 3% of it is freshwater and an even smaller percentage of that is accessible to humans [www.epa.gov]. Furthermore, agriculture is resource-intensive; “agriculture is a major user of ground and surface water in the United States, accounting for approximately 80 percent of the nation's consumptive water use,” [www.ers.usda.gov]. Also, the contamination of groundwater from point and non-point source pollution, associated with chemicals used in agriculture, can

affect water quality and produce dead zones. Point-source contamination can identify a point where chemicals (e.g. pesticides) enter the water. Non-point source pollution can be the result of chemicals moving from different water sources and traveling large distances, and has affected over 40% of surveyed bodies of water (e.g. streams, rivers, etc) [www.epa.gov]. The runoff of chemicals that end up in groundwater can affect water quality.

Infrastructure for regulating waterways and pollutants have been in place since the Clean Water Act was presented in 1948 and amended in 1972 [www.epa.gov] and are in effect to tackle point and nonpoint solution. Regulation is strict on pollution sources from agriculture, yet waterways can still get contaminated. The growing Dead Zone in the Gulf of Mexico is an example of the effects of chemical runoff. Runoff from fertilizers, pollution from pesticides, the erosion of soil, animal waste and sewage from upstream states have traveled through the Mississippi River to this location and increased the concentration of nutrients in the water. This addition of nutrients exacerbates the growth of algae, eliminating oxygen in the water and compromising the balanced state of the ecosystem [Bruckner 2012]. Water contamination is an external cost of food production recognized but even with pollution regulation there can still be harm.

Another resource affected by agriculture is land. For example, the production and planting of corn in the United States requires about 80 million acres of land [www.ers.usda.gov]. Soil on this land is vital for agriculture and many ecological purposes and needs to be carefully used to prevent soil degradation. Ecological services of soil include nutrient recycling and filtering of contaminants; soil can reduce over-land runoff by infiltration of water during storms, and it can serve as a greenhouse gas sink to remove greenhouse gases that are eliminating the atmosphere and overheating our earth. If soil is improperly cared for to the point of being removed, soil degradation is the result. Soil takes millions of years to form and soil degradation is a depletion of this precious resource. The Dust Bowl, in the 1930s, is an example of nutrient depletion of the soil in which clouds of dust destroyed crops and made it even more difficult to get access to food. Limited food access resulted in a number of deaths caused by starvation.

Although there are conservation practices in some agricultural productive regions [Ken Meters, 2011, 6], more widespread use is needed to ensure the stability of the environment. Conservation practices include no-till or limited tilling (less stress on topsoil), filter strips to remove chemicals from runoff (vegetated areas between potential pollutant sources and surface water), and crop rotation, all of which could potentially reroute some of the destruction already caused [Gold, 2007]. If production is handled properly, harmful effects to the environment will be minimized.

Environmental Degradation-Livestock Impact

“Livestock production accounts for 70 percent of all agricultural land and 30 percent of the land surface on the planet” [Steier, 2011, 194]. There is a high demand for their production and they are dominant and growing users of land [Janzen, 2011]. Livestock are ecologically beneficial because they can create food from sources that are inedible to humans, preserve grasslands, promote perennial plants, and recycling nutrients [Janzen, 2011].³

³ In more detail, livestock are able to digest food from sources we cannot eat directly and convert it to food; therefore, we do not compete with them for food directly. If livestock are safely managed, they can benefit an ecosystem with their presence as they would in non-domesticated situations. It is also said they

Without proper management, livestock raising can alter land, overuse freshwater, inefficiently use energy, and the livestock can excrete polluting nutrients, eat feed that could otherwise be food and emit greenhouse gases.⁴ Their raising can cause soil degradation through overgrazing, compaction, and erosion [Steier, 2001, 194], which can lead to deforestation and the loss of habitat and biodiversity of plant and animals species [Janzen, 2011]. Controlled grazing has been used to combat this effect [Gold, 2007]. Meat consumption requires about eight times the water as a vegetarian diet. If livestock excrement flows into waterways it will negatively affect water quality [Janzen, 2011]. Crops grown for livestock feed can require intensive irrigation and deplete the water supply. Grass-fed cattle are a devised solution to lower water usage in irrigation [Gold, 2007]. Yet, if too many lands are converted to grasslands for pasture, less carbon dioxide will be stored [Janzen, 2011] in the new ecological system and more greenhouse gases emitted into the atmosphere. In addition, agriculture relies on supplemental energy and the land livestock grazes on cannot be used for crop production simultaneously which takes a toll on food production overall. Furthermore, livestock emit greenhouse gases themselves; nitrous oxide from excreted nitrates or applied nitrates and methane from enteric fermentation [Crosson, 2011]. Livestock raising is often harmful to land and water but as noted earlier can be beneficial to the environment if managed properly.

Environmental Degradation-Pesticides

Pesticides are an example of advancement in agricultural production that has benefitted the industry but has had harmful environmental effects. A pesticide is a “substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest” [www.epa.gov/agriculture/] and has been used nationally to increase crop yields. “Pesticide” is the umbrella term that includes biopesticides (derived from natural materials), insecticides (to kill insects), herbicides (to kill weeds), attractants and repellants (to lure or deter pests) and refers to synthetic and natural chemicals [www.epa.gov], and more. Synthetic pesticides are determined to be more harmful on crops than biopesticides because some have been known to disrupt the nervous system, be poisonous, persist in the environment, and be carcinogenic (known to cause cancer) [www.epa.gov]. However, some natural pesticides, such as arsenic, are very deadly, so there can be exceptions to the rule. If these pesticides, especially synthetic insecticides and herbicides, are not appropriately and safely applied to agricultural fields they can run off the field and contaminate groundwater.⁵ Fortunately, there are ways to manage pests with less use of chemicals. For example, Integrated Pest Management (IPM) analyzes relationships between species and crops to come up with practical solutions [Gold, 2007] using chemicals as a last resort.

can enhance carbon storage by promoting perennial forages which sequester carbon into the soil and lowers the effect of carbon on climate change. Lastly, through excretion, nitrate and other nutrients are returned to the soil. At appropriate levels, the land will be fertile for future yields [Janzen, 2011].

⁴ Greenhouse gases deflect the solar radiation leaving the earth in a number of directions, since the solar radiation does not immediately leave earth; it heats up the surface temperature and has lasting effects on climate.

⁵ The Environmental Protection Agency (EPA) conducts tests to identify harmful effects of these chemicals at different amounts of exposure. As a result of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) pesticides must be registered, their retail is monitored; applicators must be professionals or supervised by professionals.

An example of a pesticide is the herbicide Roundup UltraMax. The product label defines when Roundup UltraMax can be applied safely (only during certain times of the plant cycle), the number of days after application grazing or replanting can safely occur, details on sprayer preparation and the maximum limit of application is also supplied [ww.epa.gov]. It also defines that it can *only* be applied to crops that have the Roundup-Ready gene (or crops that have been genetically modified to withstand the Roundup herbicide, they can then be sprayed with the herbicide without being harmed) [www.epa.gov]. Ingredients of this globally used product have been found to cause illness and ecological destruction. “In California, where pesticide-related illness must be reported, Roundup’s active ingredient (glyphosate) was the third most commonly reported cause of pesticide illness among agricultural workers, and the most common cause of pesticide illness in landscape workers” [Organic Gardening, 2000]. In addition, this chemical reduced the ability for soybeans and clovers to fix nitrogen, reduced the growth of ecologically beneficial soil-dwelling fungi, reduced sperm production in mammals, and there is also research speaking to its ability to cause cancer [Organic Gardening, 2000]. This illustrates one of countless potential environmental harms from the use of pesticides in food production.

Environmental Degradation-Fertilizers

Nitrogen is an element abundant in our atmosphere but rare in the soil used for agriculture. After World War II, leftover ammonium nitrate used in weaponry was then marketed for agriculture. At first the nitrogen in the soil improved crop yields and sequestered carbon with the greater amount of vegetation. After years of application, crop yields no longer increased and the excess nitrate use began to exacerbate carbon dioxide levels in the atmosphere. Synthetic nitrogen fertilizers have been developed so that nitrogen can be returned to the soil and boost crop yields. These nitrogen fertilizers rely on natural gas, a non-renewable resource for their production. If nitrates runoff into waterways and enter the groundwater, drinking water can be contaminated. If humans consume nitrate, their ability to carry oxygen will be reduced which can be particularly harmful to infants. The use of this fertilizer has grown; “over 13 million tons of synthetic nitrogen were spread over American farmland in 2008 alone, covering about one-eighth of the continental land mass” [www.ers.usda.gov/data/fertilizeruse]. Nitrate content in waterways is noncontrollable and controllable. Noncontrollable sources can be a result of the nitrate in the soil and extreme weather, while controllable nitrate content is the result of Nitrogen application [Randall, 2006]. Agricultural producers then have a responsibility for the controllable nitrate content so the chemical stays out of the waterways. Similar to pesticides, at certain amounts and without proper use chemicals from synthetic fertilizers can contaminate waterways.

Environmental Degradation-Packaging, Distribution, Consumption

Environmental degradation also results from the packaging, distribution, and retailing of food items miles away from where they were produced. Industrial agriculture has allowed food from varied areas to travel large distances to get to consumers year round [Steier, 2011, 170], and although this helps address food insecurity, it can also be harmful to the environment. The distribution process is energy-intensive because of different forms of transportation and energy required to deliver them to their final destinations. “On average, U.S. household food consumption adds 8.1 metric tons of Carbon Dioxide (CO₂) each year. The production of food accounts for 83% of emissions while its transportation accounts for 11%” [Weber, Matthews, 2008]. For example, the delivery of food via trucks can contribute to climate change because the trucks run on gas, refined from fossil fuels (a process which depletes natural resources) and the truck emits greenhouse gases into the atmosphere. “The produce in a typical American

supermarket travels an average fifteen hundred miles from field to bin,” [Goleman, 2009, 54]. If this mileage is used to calculate the carbon footprint (the total greenhouse gas emissions) of one food product, the environmental effects of food products that have traveled a long distance become apparent. Reducing transportation could reduce negative external costs to the environment.

Industrial food production has allowed for a large volume of food to be available for consumers but not all of it is accessible, used and disposed of in an environmentally friendly way. Consumption involves the food purchasing by a consumer, customs of preparation, and food and food packaging disposal. The environmentally destructive roles of consumption and disposal regard food waste and food packaging. Packaging and food waste are significant portions of waste [Appendix B]. Of the 250 million tons of trash generated in 2010 by Americans, 13.9% were food scraps and 28.5% were paper and cardboard [www.epa.gov]. More than half of this trash is discarded to landfills and other methods of disposal (54.2%), less is recovered (34.1%) and even less is combusted and repurposed into energy (11.7%) [www.epa.gov]. Although landfills appear to address waste disposal, if the lining is unsuccessful, hazardous waste and other chemicals can leak into groundwater. Furthermore, rotting food waste in landfills is a methane producer. This greenhouse gas has twenty-one times the global warming potential of carbon dioxide [www.epa.gov]. Therefore, food packaging that ends up in landfills and incinerators contributes to greenhouse gases, and food waste sent to landfills, decomposes quickly, produces methane, and contributes to the rising temperature of the earth. Reducing food packaging and food waste can minimize external costs to the environment.

A variety of environmental concerns have emerged from industrial food production practices. Agriculture in general requires extensive use of land and water. However, food production practices such as the increased use of synthetic pesticides and fertilizers and runoff for increased crop yields, poor livestock and waste management, food product distribution and consumption, as well as the general depletion of resources because of production volumes have affected the environment. If the environment continues to be depleted, there will no longer be resources to produce food and sustain the human population. Reducing some of these external costs with better practices can minimize the harmful effects to the environment.

Summary of External Costs of the United States Food System

This section discussed a few external costs to the industrial U.S. food system-potential revenue losses to the economy and small agricultural workers, animal cruelty and poor human health, environmental degradation-and was instrumental to characterizing some problems associated with the U.S. food system. The problems mentioned help set up the need for solutions that minimize some of the external costs to “cheap” food. Although solutions to some of these specific issues were proposed, (e.g. organic farming as an alternative to synthetic pesticides and fertilizers) the following section aims for a systemic solution to the industrial food system.

Addressing Issues of Food Access

This section looks at the concepts of food insecurity, lack of access to food stores, and communities without food sovereignty and proposed solutions to these food issues. For example, the industrial food system has attempted to tackle hunger with increased food production but the solution does not fully address the food security of communities.

Concepts

Access to food, the community suffering of hunger, is described by the term ‘food insecurity.’ Food security, “at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life,” [Patel, 2012, 1]. Food security affects individuals in communities all over the United States and affects more people than undernourishment does [Patel, 2012, 1] because it can include both underweight and obese individuals.

One of the terms that arises in food security studies is the “food desert.” Consensus for the definition of this term has not been met. The term “food desert” can refer to an area without a supermarket where access to healthy food is limited. It will be discussed in further detail as a community’s access to food stores. One of the larger concepts that encompasses food security is “food sovereignty,” which addresses tools for a community in order to eliminate food insecurity.

Food Desert

In a review of the nations’ disparities in access to healthy food by Walker, Keane, and Burke, an analysis of food desert studies was conducted. Their review elaborates on the environment that helps a food desert develop. These include access to supermarkets, racial and ethnic disparities, income and socioeconomic status and differences in chain versus non-chain stores (e.g. prices, availability and store type) [Walker, Keane, Burke, 2010, 878]. Lower-income areas typically have 30% fewer supermarkets than higher-income areas, similar ratios are visible in minority neighborhoods (commonly predominantly Black neighborhoods); access is further diminished by lack of transportation, the design of the community, and individual situations. It was found in low-income areas the food prices are higher, smaller quantities and varieties are offered and food is typically purchased for convenience instead of quality. Studies on differences between chain and non-chain stores state large supermarkets can stock leading brand and generic items of different packaging sizes, which offsets higher prices at smaller grocery stores. Therefore, consumers who shopped at non-chain stores, in urban and poorer areas paid more per unit of food than chain stores, suburban and wealthier areas. The review shows the complexity of food issues and that lower access to healthy food can lead to food deserts.

Location of Food Stores

According to Morland, Wing, Roux, and Poole, the location of food stores and food service locations helps define community access to food or food security. Large supermarkets are described as large, corporate-owned, “chain” stores; grocery stores are smaller noncorporate-owned food stores. Supermarkets and grocery stores are where consumers are able to purchase “food-at-home” [Morland, Wing, Roux, Poole, 2002, 24]. Food-away-from-home locations are not discussed because even if they do minimize external costs, they are not the supplier of enough of each consumer’s diet, and purchasing decisions at those outlets are not a significant concern. It was found in their study that access to these food stores and service locations, specifically supermarkets, differs greatly depending on neighborhood wealth and demographics as it relates to race or ethnicity. Greater amounts of supermarkets were available in wealthier and white neighborhoods. Their recommendations for future studies of food access included looking closer at characteristics of individuals’ local food environments. Learning more about local food environments could help understand and address access to food stores.

Researchers Krukowski, West, Berino and Prewitt looked at food access and food stores after Morland, et al., with a particular look at food availability and pricing. They looked at pricing of different healthier foods in neighborhoods of varied socioeconomic and racial demographics. They found that the relationship between price and the other factors was not statistically significant. Similar to other studies mentioned in Walker, et al.'s review, the sample population was relatively small. Median household income was a factor used to describe the socioeconomic demographics of the area. It was decided that financial incentives for healthier food and placing supermarkets in underserved areas were solutions to food deserts and food security. In their article, they recognize that the impact of the development of community food environments on healthy food choices is still being researched. This study is an example of community food access and availability, and although it used smaller sample sizes, was able to make inferences to the larger population.

These articles lend an overview of the food desert concept, and the way the issue had been addressed in some areas. For example, upon learning more about food deserts, cities in the northeast decided to build supermarkets in food deserts. Although this successfully placed supermarkets in underserved areas and increased the availability of food, additional supermarkets does not completely address the failures of the system. Another example from the U.K., focused only on increasing the availability of fruits and vegetables. Although there were then more fruits and vegetables available, like the U.S. food system, these foods were still consumed below recommended levels, so issues with the system remain. After reading this literature, it seemed that a comprehensive system-based approach is appropriate for increasing food access, whereas just increasing supermarkets and produce availability are too narrow of a solution for the severity of the issue. Researchers recommended a continuation of research in this field to develop and implement individual and community-level interventions that would increase access to healthy foods and affect buying practices.

The Food Sovereignty Movement

Organized originally by the peasant movement of smaller-scale agricultural producers, La Via Campesina, the movement for food sovereignty has grown to encompass a number of different initiatives to address undernourishment and food security. The principles of the movement describe the food crisis to be the result of industrial agriculture and the organization of the global food system, which encourage production efficiency [McMichael, 2011, 805], but do not effectively feed everyone despite the Millennium Development goal mentioned earlier [McMichael, Schneider, 2011, 134].⁶

The Food Sovereignty Movement argues that peasant farming (small-scale and sustainable farming) is the solution to food security across the world. In other words, food security can be resolved by having smaller farms producing for local markets and supporting

⁶ The movement was organized against the food system that had become 'globalized and centralized' and was supported by the World Trade Organization, the United States and agricultural food corporations [Block, Chavez, Allen, Ramirez, 2011, 203]. Members were not pleased that small farms had transformed into major agricultural food corporations and were forced to undertake their industrial methods and practices [McMichael, Schneider, 2011, 120]. Furthermore, members were frustrated that this change was supported by the United States and other entities such as the World Trade Organization that sees production and trade as a way to combat the food crisis [McMichael, Schneider, 2011, 127].

domestic problems instead of global ones [McMichael, 809].⁷ Food sovereignty perceives agriculture as related to social and environmental health, instead of just economic growth [McMichael, Schneider, 2011, 134]. This is because food sovereignty is the “right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self-reliant” [Ayres, Bosia, 2011, 50]. Within this movement, individuals and communities make food production decisions and determine their level of self-sufficiency. The understanding of the food crisis is historical and systemic [McMichael, Schneider, 2011, 134] and solutions within the movement try to address it as such.

Although its initiatives are comparable internationally, food sovereignty solutions can vary. Some of the projects undertaken by the United States include a focus on buying local, concern for the environment, farmers’ markets and other institutions [Block, et al., 2011, 205]. It is sometimes argued that these food sovereignty initiatives in the U.S. do not include low-income populations [Block, et al., 206]. Regardless, different case studies reveal that community-based solutions can benefit low-income populations.

The south side of Chicago’s is a low-income area, described as a food desert, where access to food is limited. It is an example where a low-income population has benefitted from food sovereignty solutions. Growing Power, a national non-profit for food access, and Healthy South Chicago, a community-based organization to improve health, are working in tandem for sustainable agriculture and community empowerment. Interest for and the actual development of community gardens are in place. Both organizations have put food production into local hands, giving the community the power to produce empowered citizens by mobilizing them [Block, et al., 2011, 210]. Improving food access through community gardens and strengthening the food system allows individuals to move from their personal issues and begin concerning themselves with the community [Block, et al., 2001, 212].

Another location is the state of Vermont, which has developed an infrastructure conducive to food sovereignty principles and is a location where a community-based food system solution has increased food access. According to an article published in 2011, Vermont has the most farmers markets per capita in the U.S. and its direct sales from farmers to consumers per capita is also the highest in the U.S [Ayres, Bosia, 2011]. In addition, food gardens and horticulture programs are growing and farmers’ markets during wintertime have also been developed. The state’s focus on their food has allowed them to gain more control over food production and minimize economic external costs. Their increased self-sufficiency has helped this area supply their state population with food. Giving each community the tools for its own sufficiency and giving them food access, benefits them economically, environmentally and socially.

⁷ As industrial agriculture reaches its threshold of productivity, millions of small farms still have potential and with support could save jobs in communities, save nature, and have even been considered to have the potential to save whole cultures [Kopka, 2008, 46]. The goal is for, “small and medium-sized farms practicing forms of agro-ecology, supported by supply management policies geared to domestic markets rather than overproducing food to be dumped on export markets opened by WTO liberalizations” [McMichael, 809]

Summary of Addressing Issues of Food Access

Eliminating food deserts and increasing access to food stores has helped address food security to an extent. Regardless, suggestions made from food deserts studies are narrow solutions; increasing the amount of produce and supermarkets will not fully address food security. Studies recommend that further research look at the role of the individual and the community. There is also food sovereignty, which aims for the health of communities and the elimination of food insecurity. The food sovereignty movement is against the globalized and centralized food system. It encourages the development of alternative food projects and community-based solutions that allow communities to improve their economic, environmental, and social health and address issues of undernourishment and food security. More specific examples of community-based food systems will be given in the following sections.

The Community-Based Food System

A community-based food system is a smaller component of the U.S. food system. It also includes food production, processing, distribution, retail and consumption, but instead of industrialization, processes are completed to enhance the environmental, economic, social and nutritional health of a place [cornell.edu]. This concept has been used almost interchangeably with 'local' food systems, but community-based systems have an emphasis on self-sustaining communities and recognize that each community is different. Furthermore, these systems aim to build relationships between steps and create a sustaining food system for the community.⁸ Lastly, the system is characterized by sustainability, not just for the health of the people in it, but for the environment, the economy, the workers and the community as a whole [Gold, 2007].

As mentioned in the section on food sovereignty, communities in the United States have attempted to reduce food insecurity and external costs by strengthening their food systems. Each community utilizes different quality food markets. Quality food markets are locations where food products are sold that minimize external costs of "cheap" food. They are farmers' markets, community gardens, local food stores, etc., but are not supermarkets supplied by the industrial food system. External costs from the U.S. food system are minimized but convenience and availability of these programs are limited. The following list of outlets is not inclusive of every quality food market but does list common elements that have been known to reduce external costs effectively. This section will also demonstrate how these quality food markets can change a consumers' perception of their food.

Farmers' Markets

The farmers' market is a direct channel for food distribution and retail that can benefit the producer and consumers. Farmers do not travel far to retail at the farmers' markets. "'Local' is usually defined as constituting foodstuffs originating from a defined area, usually within a 30-50 mile radius of the market location" [Szmigin, 2010] or as much as 100 miles [MacMillian Uribe, Winham, Wharton, 2012]. For the community, a farmers market can bring people into an area, nurture economic development and sustainability, reduce 'food miles,' contribute directly to the

⁸ This type of community-based food system goes hand in hand with goals of the food sovereignty movement. This food system hopes to supply its residents (whether neighborhood, county, or region) with food security and access to food. It also hopes to shorten the distances between different steps within the food system. Similar to the concept of food sovereignty, there is a desire to become more self-sufficient and aims to do so by having the community produce food for its own needs.

local economy, and find a way to change the conventional production and consumption systems [Szmigin, 2010]. Farmers selling at these markets may specialize in organic or other sustainable farming practices (in contrast to conventional production practices), which can cut down on environmental external costs. For farmers, these markets provide a secure and regular local market for their products, increasing profit by shortening the supply chain (direct sales), allow them to diversify, and get a regular income [Szmigin, 2010].

Consumers also benefit socially; it was referenced in the 2007's *State of Our World*, that people that travel to farmers' markets have ten times as many 'conversations, greetings, and other social interactions' than people in supermarkets [Worldwatch Institute, 2007, 53]. "Farmers markets serve as business incubators that then increase the density of local food networks and relations" [Brown, Miller, 2008, 1301]. The state of Vermont (with the most farmers' markets in the nation) was given earlier as an example of an area that increased self-sufficiency by utilizing this quality food market and increased their community food network. These direct sales allow for transparency in the food system and can allow consumers to become more familiar with their food, farming practices, and the local community. With knowledgeable consumers and the growth of these markets comes the growth of the community system.

Community Gardens

The community garden is another quality food market that minimizes external costs of the industrial food system. This program allows multiple people within the community to grow their food on a plot of land. Their use has grown; "By the mid-1990s, over one million individuals were involved in more than 15,000 community gardens throughout the U.S." [Okvat and Zautra, 2001, 375]. Studies have shown the use of community gardens in urban areas and suggest that community gardens and individual, community, and environmental well-being are related [Okvat and Zautra, 2011, 382]. An individual will engage in more physical activity and may become more interested in their health as a result of what they have grown. The individual will connect with their community, which will organize and empower it, and benefit the community economy and natural environment. The carbon sequestration of community gardens over a decade is approximately 190,000 tons of carbon, which offsets carbon emissions of one year from over 11% of Americans [Okvat and Zautra, 2011, 382], which leads researchers to believe that the instigation of community gardens does not have a negative effect on climate change. In the earlier description of community gardens in the south side of Chicago, these programs allowed people to connect with community issues and communities have become more self-sufficient, empowered, and have healthier food.

Community-Supported Agriculture (CSA) Programs

Community-supported agriculture or CSA programs give consumers the chance to support local farmers and reduce the negative economic effects on smaller agricultural producers. With this outlet, consumers buy shares in a farm's harvest before the crops are produced, partnerships between farms is also common. The money up front increases the farmer's security for the year and offers contact with customers. Sometimes these programs extend into the winter, which not only give the farmers more profit, but allows consumers to acquire fresh produce and dairy products all year-round, something they have come to expect with the industrialization of the food system. This helps the local economy, keeps money in the community, and helps disengage consumers from the larger industrial system [Schnell, 2007, 550]. Program participants typically fit an urban, progressive, higher education, middle and

upper income profile; as these are the individuals who can concern themselves with issues of food production... regardless the diversity of participants is expanding [Schnell 2007, 557]. These programs have grown substantially in the last 22 years, as of 2007, every state has at least one and the amount per state increased by 50% in the 2000-to-2004 interval [Schnell 2007, 552].

“CSAs have made great strides in reconfiguring the very way that Americans think about their food supply” [Schnell, 2007, 552] and, “it is possible that CSA involvement could contribute to behavior changes related to environmental sustainability, and eating a greater amount and variety of fresh food” [MacMillian Uribe, Winham, Wharton, 2012]. In the study conducted by MacMillian Uribe, et al., in the state of Arizona, it was found that survey respondents ate and sold their families a greater variety of fruits and vegetables as a result of their CSA membership [Macmillian Uribe, et al., 2012]. In addition, they found that their results were consistent with other literature; a study in California “showed that 81% of members reported some change in eating habits” [Macmillian Uribe, et al., 2012]. These comments suggest that as a result of participation in CSA programs, consumers may reorganize their thinking of food supply and change their behavior so they eat healthier foods and concern themselves with environmental sustainability. “As [consumers] eat, they gain opportunities to increase their understanding of food, the challenges faced by farmers, the needs of the environment, and the potential role informed citizens can play in reshaping food and economic systems” [Brown, Miller, 2008, 1301]. Therefore, CSAs reduce the external costs on smaller scale agricultural producers, the environment, and consumer health and may alter consumers’ perception of their food.

Locally-Owned and Natural Food Co-operative Stores

Local grocery stores and food co-operatives are other models of quality food markets that minimize external costs to “cheap” food and are both businesses that support local agricultural producers all year-round. These operate most similarly to supermarkets.

Food supplies for local grocery stores can come from producers in the surrounding areas and sometimes even local food processors (that convert the basic crops to processed foods). These local groceries also try and sell quality food products at adequate prices so external costs are minimized. Some argue that these local grocery stores do not always sell healthier food than the chain supermarkets or that the foods are sold at higher prices in the smaller grocery stores [Chung and Myers, 1999]. This reality may have to do with volume of food available at supermarkets and the internalization of cost by the local groceries and their sale of quality (not ‘cheap’) products. It was found that when a large corporate owned supermarket enters into a community it provides competition to smaller groceries. In this way, the new competition captures existing business because they take over a large portion of sales and the existing store must lower their prices to compete [Arts, Stone, 2006, 1302]. One of these examples includes the entrance of Wal-Mart into a community in Mississippi. “Wal-Mart’s entry into nonmetropolitan markets reduces growth of grocery store sales by nearly 17 percentage points within two years of entering” [Artz, Stone, 2006, 1302]. Local groceries minimize external costs to “cheap’ food because they are supplied by some local sources, focus on healthier food, and internalize costs.

Similarly, food co-operatives aim to supply community residents with a grocery store that supports the economy of the community. A co-operative model means that the owners of the business are members of the community. Food co-operatives aim to have money to stay in the community by making sure local farms are being supported and jobs are created. After a certain

amount of success, these cooperatives may also aim to add an educational component that offers cooking classes and develops other skills for members. Co-operatives sell goods that are good for the health of community members and the environment and make it a priority to sell food products that are organic, local, and unprocessed. “A growing subset of consumers is seeking out alternative sources of unprocessed foods grown and harvested in close proximity to where they live. As a consequence, the demand for locally grown agricultural goods is rising. In 2008, for example, 44.3% of organic sales occurred locally (within 100 miles of production site)” [MacMillian Uribe, Winham, Wharton, 2012].

This grocery store model is less common than the others, but looking at examples in Illinois, such as the Common Ground Cooperative in Champaign-Urbana Illinois or the Neighborhood Grocery Cooperative in Carbondale, Illinois, it is apparent that these models have been embraced by their communities. The first moved and expanded in September of 2012 so that they could encompass more individuals and food products as well as more activities (such as cooking or dining in). The latter started out by selling goods from the back of a truck and were able to secure about 345,000 dollars from their members which will be a substantial portion of the amount needed for their expansion which will include a café, events, and cooking classes. The food cooperative has the ability to engage members of the community into sustainable lifestyles through their food.

“Local foods venues, such as farmers’ markets, CSA programs, and community gardens, are increasing in number each year,” (MacMillian Uribe, Winham, Wharton, 2012); consumers are interested in them. They allow communities to keep money in the area, handle issues of the environment, and get people to eat healthy food products.

Another year-round model for minimizing external costs would be a small-scale food-processing center or a food hub. This food processing center would allow for canned, frozen, and stored fruits and vegetables to be locally processed and for the self-sufficiency of communities. This type of location is particularly useful in regions where food is produced for few months in the year. An example of a processing center is the Western Massachusetts Food Processing Center, which dedicates 36,000 sq. feet. to the sustainment of local agriculture with food processing facilities, offices and more [www.fccdc.org] An example of this type of a food hub is the Red Tomato stationed in Massachusetts. This organization was founded in 1996, coordinates the marketing, sales, and logistics for over 40 family farms in the Northeast, and its produce sales were \$2.65 million in 2011 [www.redtomato.org]. They are able to create a connected system for quality food distribution. If communities could rely locally on more than just production, the community-based system would be strengthened and community health would improve, external costs minimized.

Summary of Community-Based Systems

Farmers’ markets, CSA programs, community gardens, local food stores, food co-operatives and small-scale food processing centers are all models of quality food markets that minimize external costs to “cheap” food. These quality food markets also have the ability to get consumers thinking about their food supply, their purchasing decisions and lifestyles. Getting customers thinking about where their food comes from and differences between food outlets is crucial to their perception of food systems, health and economic and ecological sustainability. Changing perceptions will create opportunities for altering purchasing decisions and lifestyles.

The Role of the Consumer

Consumers are important elements of the U.S. system and the community-based system. Consumers can have an influential role in the food market; their perceptions of a particular brand or business of any scale can be essential for trust and commitment to large agribusinesses as well as small-scale agricultural producers [Beland, Katz, 2003, 26]. Their perception of external costs and the food system could alter their food purchasing decisions. Therefore knowing what leads to their food purchasing decisions and what can alter them are important for strengthening the community food system.

Factors Affecting Food Purchasing Decisions

Industrial production has increased the availability of healthier and non-healthy foods, but healthier foods are consumed below recommended levels [French, Story, Jeffery, 2001, 311]. Americans are suffering from diseases as a result of some of the food products they purchase and eat and the lack of physical activity. Yet, a study conducted by French et al. found that educational awareness of healthy food did not enact a lot of change in an individual's life [French, et al., 2001, 328]. For example, public health campaigns for healthy eating habits have had successes on increased consumption of fruits and vegetables "but the impact of these educational campaigns on obesity has so far been negligible" [French, et al., 2001, 328]. Therefore, although education affects purchasing decisions, other changes were necessary to address larger issues. French et al. recommend that encouraging lifestyle change would be effective with community action, or community-based approaches to encourage individuals toward healthier lifestyles. Examples include, "establish wellness councils in neighborhoods and communities to organize and direct activities aimed at promoting healthy eating and physical activity [and] establish standards for foods served at cafeterias, vending machines, snack stand on city/county property, and in government buildings" [French, et al., 2001, 329]. These are just two examples of possible community-based approaches. In addition to education, some of the other factors that influence food purchasing decisions will be talked about next.

The studies published by Simone French and by Glanz et al., involve food pricing and the profile of the American consumer. Both studies had small sample populations but have been cited a number of times. In both studies, it became evident that the American consumer considers taste, cost, convenience, and nutritional value when it comes to purchasing food. Glanz, et al. adds the factor of 'weight control concerns.' Although the communities examined in French's study were primarily work sites and secondary schools, it was found that minor price adjustments could account for behavioral changes. The strategy for this long-term study was to raise the price of higher fat food by about 10% and to reduce the price on lower fat or healthier foods by 25% [French, 2003]. Over the course of the year-long study, it was seen that healthier food choices were made based on the price. Even if the communities studied, perhaps, did not capture the attitudes and behaviors present in a larger population, minor pricing alterations impacted behavior. This study helps illustrate that purchasing decisions are based on a number of factors and can be altered by economic incentive.

Glanz, et al. also offered potential solutions to food purchasing behavior changes. The study was conducted within the village of Arlington Heights in the state of Illinois, and a survey was handed out to a sample of 5,000 adults within a population of approximately 75,000 people. The importance of these factors relied heavily on the demographics of the respondents and their concern for a healthy lifestyle [Glanz, et al., 1998]. In particular, food purchasing decisions for a

healthier lifestyle were related to the individual's level of concern for nutrition and weight control. As a result, their suggestions for altering behavior included campaigns that increased the importance of nutrition in purchasing decisions, but recognized this may only affect health-oriented individuals [Glanz, et al., 1998]. Another strategy offered would be to stress the good taste of healthful foods, as it would apply to all demographics. Therefore, focusing on the taste of healthy food may encourage people to alter their purchasing decisions, if health concerns will not. The strength of this study was its methodology; they were able to acquire demographic information and valuable data on a larger sample population and identified influences on purchasing decisions.

The American consumer is not likely to alter their purchasing decision toward healthier, quality food based on one element alone. For example, education and economic incentives will not work by themselves to move individuals toward healthier lifestyles. Studies by French et al., French and Glanz et al. offer ways that may alter food purchasing decisions toward healthier foods, through community based approaches, economic incentives and a focus on the taste of healthy food to those that are not oriented toward nutrition and weight control. These purchasing decisions and increased demand toward quality food will help reduce the 'cheap' food supply from industrial food production.

The Wellness Consumer

Since 1997, a research provider known as The Hartman Group has been dedicated to understanding consumer culture, behavior, trends, and demand. They do this to encourage wellness but also for marketing purposes, to increase the demand for wellness products. Wellness is a term that represents a consumer lifestyle. While it is thought to be comparable to 'health,' in fact 'healthy' appears to be understood specifically in terms of the health of the body, exercise, diet etc, whereas wellness is a term that is used to describe a state of living or being, an approach to life or a way of thinking [Harman Group, 1997, 7]. The Hartman Group has gathered data on the consumer to find approaches to strengthening the wellness sector of the market so that consumers 'hungry to change their lifestyles in ways they find positive and life affirming' can acquire the necessary wellness products and services [Hartman Group, 2000, ix]. Through their research, the Hartman Group has found that change in the marketplace 'is consumer driven' [Hartman Group, 2000, xi]. Therefore if consumers make demands (e.g. for wellness products), what they demand will be supplied. The consumers that change their lifestyles can help alter what is supplied. If food products from the industrial food system were demanded less, it could help eliminate the external costs produced by the system.

The Hartman Group's methodology over the last two decades of research, has typically been reviewing literature, interviews with experts in the industry, personal experience and observation, nationwide surveys, and other representative reports in order to learn more about this topic. They define organic broadly and in later reports, they study 'wellness' as well. They found that there is a scale of interest with organic products, or ultimately wellness products. People could be grouped as 'organic interested' at approximately 60% or 'organic uninterested' at 40% [Hartman Group, 1997, viii]. Therefore, there are more people with the potential to be interested in organics and ultimately wellness. The combination of interested or indifferent people is more likely to pay price premiums for organic products. When price was analyzed it was found that of organic-interested customers, 32% would be willing to accept a 20% price premium for organic products. Of organic products, which can range between 20 and 100% more expensive than conventional products, only some people were willing to pay the prices. If 60%

of people were to demand certain products, the market would meet their demand with supply. Yet, even with this amount of interested people, sale of organic products has only grown to about 3% of total U.S. food sales today [www.epa.gov]. Therefore, approaches are needed to continue actively engaging the interested people to alter their purchasing decisions.

It was found that “once consumers begin even at the very lowest level of involvement in the wellness marketplace, most keep moving to levels of higher involvement” [Hartman Group, 2000, 3]. People generally move from desiring wellness products of food and beverage products in phases, starting with fresh foods then adding more food and other products over time [Hartman Group, 2007, 35]. Therefore, the individuals that begin purchasing wellness products will continue to do so and will begin purchasing different types of products over time. This may be a reference to the psychological concept that people do not like to hold two conflicting opinions of something, let alone be perceived as a conflicting person. This concept is called cognitive inconsistency, which leads to cognitive dissonance [Gawronski, Bodenhausen, 2006]. If an individual starts to perceive himself as someone who purchases wellness products, he may then continue making wellness purchasing decisions so as not to make decisions that conflict each other. With more selection of wellness products and the information needed to impact their lifestyle, customers will move towards a higher level of involvement [Hartman Group, 2000, 5]. If customers get more involved and make more purchasing decisions for wellness, they will demand wellness products, which will ultimately alter what wellness products were available in the marketplace.

Food outlets need to market their wellness products carefully and get community involvement. Price, convenience and availability are not as important as the affirmation of people’s lifestyles [Hartman Group, 2000, 32]. Wellness product retailers (e.g. quality food markets) must concern themselves with these consumer influencers. Wellness products sold successfully when the food outlet used tactics for ‘knowledge transfer, lifestyle and community linkage and value generation’ [Hartman, 2000, 30]. People want a sense of community in their own communities and are more likely to make ‘wellness’ purchasing decisions if community bonds are developed around them and if they share these lifestyle goals with others. These are the factors that lead wellness-interested individuals to alter their food purchasing decisions and could help people move from a wellness-uninterested to a wellness-interested position. Quality food markets should use this knowledge to gain interested members and help strengthen the community-based food system.

In the reports from the Hartman Group, their focus is on the individuals who are already interested in making wellness decisions. Some of their discussion revolves around what makes people aware of different issues and keeps them actively making purchasing decisions with wellness [Hartman Group, 2007, 19]. In that way, it appears that focusing on participants that already knew about the subject or had altered their purchasing practices could shed light on what could influence the purchasing decisions of others. If interested and uninterested wellness consumers were able to make informed food purchasing decisions and continued making them in favor of wellness products, they would alter what products are available. Their lifestyles would change with these wellness-purchasing decisions. If consumers’ lifestyle changes are affirmed by their surrounding communities, seeing others make similar lifestyle choices, having certain actions become social ‘norms,’ a community system could develop. If this were to function with food purchasing decisions and the others participating in the community food system, products

from the community would be demanded more than those from the industrial food system, and external costs would be minimized.

Summary of the Role of the Consumer

Even though healthier food is available through the industrial food system, it is not purchased enough by consumers for everyone to live healthy lifestyles. Therefore, food purchasing decisions need to be influenced toward healthier foods and away from the industrial food system. Recommendations for altering these decisions have focused on community based approaches, economic incentives, and a focus on the taste of healthy foods. These healthy products are a part of the sector that the Hartman Group would define as ‘wellness products.’ If consumers begin making purchases of wellness products they will move to higher level of involvement and change their lifestyles. The Hartman Group has focused on the individuals that have already started making these purchasing decisions to learn about tools that can influence others. Part of this process is the affirmation of the individual lifestyle by the community. These tools can help develop the community food system; if a community were to demand wellness products from this system, the products of the industrial food system would be demanded less and some of the external costs would be minimized.

Summary of Literature Review

The U.S. food system compromises the environmental, economic and social health of communities by producing external costs to “cheap” food. Although it has made more food available to consumers at low prices, everyone does not have equal access to the food and the “cheap” food can have external costs. In addition, industrial agriculture can be harmful to humans and animals, cause environmental degradation, and leave potential revenue loss in the community and to small-scale agricultural producers. Different solutions to eliminating food security and encouraging people to eat healthier have been implemented. These solutions have been eliminating food deserts by providing a community with supermarkets or giving economic incentives to purchasing healthier foods. Unfortunately, these solutions have not been systematic and have not enacted as much long lasting change in communities as it has in the individual food purchasing decisions of consumers. Proposals for eliminating food issues and minimizing external costs to cheap food systematically include strengthening the community-based food system. Community-based food systems have given communities the ability to provide for themselves and become sustainable.

A combination of quality food markets in communities have been shown to minimize external costs by supporting local producers, producing less harm to the environment, and providing better food to consumers. One quality food market cannot stand by itself; there must be a combination of outlets to help develop the community food system. Consumers play a large role in this system; the food products they demand will affect what is supplied. If consumers demand products from the community food system instead of the industrial food system, external costs can be reduced. Consumers that begin purchasing wellness products will continue to purchase wellness products in an effort to appear as a consistent person. These consumers are more likely to continue making food purchasing decisions for wellness products (products of a lifestyle change) that minimize external costs if other community members do the same. If the consumers’ lifestyle choices are justified, they will continue to make them, if there is community support, there can be long lasting behavior change and the strengthening of the community food

system. As a larger movement, less demand of the industrial food system becomes possible, and external costs are minimized.

Research Design and Methodology

Overview of Research Purpose and Questions

The primary purpose of this research was to obtain the perceptions of external costs to “cheap” food in the Bloomington-Normal, Illinois community. The research also looked into quality food markets that are developed in the community used to minimize external costs of “cheap” food available from the United States industrial food system. The corresponding research questions include: How do residents of Bloomington-Normal perceive the external costs to “cheap” food? What models of quality food markets exist that minimize external costs to “cheap” food? The results should shed light on the community-based food system and reveal tools to continue moving similar systems forward as it relates to consumers and their purchasing decisions.

Overview of Community Partner

The Edible Economy Project and my contact, Elaine Sebald, also board member for Green Top Grocery Food Cooperative, Illinois Farmers Market Task Force and Illinois Food Safety Advisory Committee Member, were interested in gaining consumer perceptions of external costs to ‘cheap’ food. They were also curious how much consumers are willing to pay in order to reduce external costs as well as tools to strengthen the community food system. The Edible Economy Project is a resource for the Central Illinois region that aims for self-sufficiency. Their goal is to keep money in the region, supply people with healthier food, and allow people to buy and eat food that is produced in the community. They recognize that the soil and climate situation in the area has allowed for substantial agricultural productivity but the money from production is leaving the food system of the community.

The Edible Economy Project sees the food system strengthening process as happening in stages. The first stage would require the participants in the local food system to make connections and work together, namely, producers, buyers, and consumers; matching supply and demand. The next stage would involve the scaling up of the food system, get organizations working together to better connect the whole region. The following steps would include building health and building wealth. Building the health of the local economy would make the community resilient socially, economically and environmentally. Building wealth would involve utilizing human resources, creating opportunities and jobs, and improving the quality of life in the community.

The Edible Economy project works to create a stable partnership between institutions, farmers, and community members around their food. The Edible Economy is in the process of developing a facility for the local production, distribution and processing of food, sometimes called an ‘aggregation facility.’ This aggregation facility would allow for the infrastructure to be in place for local agricultural producers to get their products to institutions such as schools, businesses, etc. Another project they have been working on with the help of Elaine Sebald is a Green Top Grocery food co-operative. Although the aggregation center and food cooperative are both co-operative business models, the grocery would be marketed towards individuals, while

the aggregation facility would function for institutions such as schools and businesses. These projects would contribute to the strengthening of the food system in the community and region.

Overview of Study Location

Food and Farming Facts

McLean County, IL is one of the 32 counties in Central Illinois and Central Illinois has 35% of Illinois farms. There are just over 170,000 individuals in the county, 70% of the McLean County population lies in the city of Bloomington and the town of Normal. In this county there is a large portion of agricultural production occurring on farms of different sizes and direct sales to consumers has increased over time. This county is the first-ranked county in Illinois and the U.S. for sales of grain, oilseeds, dry edible beans and peas. It has other similar qualifications for the state and the nation. Still, the entire region is losing money because food residents are purchasing the majority of their food from outside the region [Ken Meters, 2011, 3]. If this county could offer more support to its own agricultural producers, the economy of the county and the region would improve. If food purchased by central Illinois residents came directly from local farmers, farm income is projected to increase by \$639 million [Ken Meters, 2011, 3]. Changes in the local food system could positively affect the economy of the region and community.

Only about half of the farms in the county are practicing conservation practices, such as no-till, limited tilling, filtering field runoff to remove chemicals, fencing animals to prevent their excretions from entering streams, rotational or management of intensive grazing, and some farms generate their own energy or electricity [Ken Meters, 2011, 21]. Although these can still harm the environment, they at least minimize the external costs of the industrial food system. That means there is another half that utilizes practices which cause more harm and degrade the soil in the area. If the agricultural producers got more support and did not only exist as “pricetakers,” there could be more profit and with that money, more care taken for the land. This reality would benefit the community environmentally.

Food eaten at home in McLean County contributes to poor health. Of the \$421 million of food purchased each year for consumption at home, \$96 million is spent on food with sweets, fats, and oils. The market for “meats, poultry, fish, and eggs” is next at \$53 million, with the ‘fruits and vegetables,’ ‘cereals and bakery products,’ and ‘dairy products’ ranking accordingly below [Ken Meters, 2011, 25]. Therefore, the majority of food spending is going to foods high in fat, sodium and sugars instead of food products that are nutrient rich. This lack of spending on nutrient-rich products relates to spending on artificially low-price food and poor health for county residents. In McLean County’s Health Department report for community health, the IPLAN, factors affecting health are described. Along with the rest of the United States, obesity has increased substantially in the county, by 15.4% in 2002 to 22% in 2008 for adults, and similar trends are apparent in children [IPLAN, 2012, 101]. As a result of food purchasing decisions and a lack of exercise, there are obesity, diabetes, heart disease, asthma, sleep disorders, and orthopedic problems in the community [IPLAN, 2012, 101]. These are just a few of the health problems in the community that may be associated with the industrial food system.

Quality Food Markets

There are many large corporate-owned supermarkets in the community of Bloomington-Normal, IL, they will not be described here. In this study, “quality food markets” is the term used to describe locations that sell local and quality foods. There are a variety of quality food markets available in Bloomington-Normal, IL. The following quality food markets were operating as of

November 2012. There is a weekly farmer's market in Uptown Normal, and a weekly farmer's market in Downtown Bloomington. These farmer's markets move to every few weeks or remain dormant during the late fall and winter months. There is at least one community garden in Normal, IL, there is one on Illinois Wesleyan University's campus in Bloomington, and at least four different community garden programs in Bloomington. It was hard to document the number of CSA programs, however, about 25% of the regular twenty-three vendors at the Bloomington farmers market had CSA programs. There are probably more than this amount, however, since the number of CSA programs are growing all over the United States. Henry Brockman's CSA program will be mentioned in this report. Natural and local food stores include Common Ground in Bloomington, Lupita's in West Bloomington, Fresh Market and Naturally Yours in Normal, IL. A food cooperative is in the process of being developed by the Edible Economy Project and would be entitled the Green Top Grocery. There is not a small-scale processing center or food hub, but plans are developing for Central Illinois by the Edible Economy Project.

Description of Research Methods

My research consisted of a combination of qualitative research methods in the form of in-depth literature review, personal observation, key informant and consumer interviews and the distribution of a survey to consumers. These methods were conducted between September and November 2012 [See Appendix G for timeline]. These methods helped obtain consumer perceptions of external costs to cheap food and information on quality food markets that minimize external costs.

The literature review was completed in order to generate a better understanding of the industrial and community food system, external costs, and learn what is understood about the consumer. Personal observation was used in food retail stores that provided 'food at home' for the residents in Bloomington -Normal, IL. The personal observation allowed me to compare and contrast consumer experiences among quality food markets. This gave me information about which establishments Bloomington-Normal utilizes and that which could still be utilized. Key informant interviews helped me fill in the gaps about what I did not see or understand to get a better understanding of how each quality food market fits into the community. This process continued throughout the duration of the project.

Key informant interviews either took place in person or via the telephone, and over e-mail if necessary. Key informant interviews targeted community representatives who are experts on food issues in Bloomington-Normal, IL or the region or representatives of quality food markets that minimize external costs in the community and in other communities. Different question guides were used for different target groups [See Appendix D for Interview Questions]. These individuals were recruited by recommendation from Elaine Sebald of the Edible Economy project and Dr. Laurine Brown, faculty of healthy and environment at IWU, from online searches, and then a snowball sampling occurred afterwards when key informants recommended other informants. I interviewed fifteen key informants; four agricultural production representatives, eight quality food market representatives and three community representatives. [See Appendix D] Key informant interviews took approximately 30 minutes to an hour.

In addition to the key informant interviews, consumers were interviewed at three locations; on the Illinois Wesleyan University campus on one occasion, at Henry Brockman's CSA on one occasion, and at the Bloomington farmers market on two occasions [please refer to

Overview of Study Location section for full list of quality food markets]. These participants were approached asking if they would be willing to participate, were asked to sign the consent form, and either were asked questions or filled them out themselves. Twenty-seven individuals were interviewed for this purpose, interviews took anywhere from 5 to 15 minutes. Two different sets of questions were used to interview participants. The first set was used to generate what affects food purchasing and benefits or challenges of food purchasing at quality food markets (that minimize external costs) as well as gather perceptions of external costs and learn if they are willing to pay for the reduction of these costs. The second set of questions was used to assess what people thought could help alter food purchasing decisions or help strengthen the local food system [See Appendix E]. Pretesting of these materials helped develop close-ended and open-ended survey questions.

A consumer survey was developed through the online Qualtrics program and circulated through e-mail to local consumers in order to get a better understanding of consumer perceptions of external costs of “cheap” food, information on quality food markets, and tools to strengthen the community food system in the community [See Appendix F for Survey Questions]. This survey was circulated for one week, through the Green Top Grocery mailing list. These e-mails were work and personal e-mails of individuals interested in the Green Top Grocery and their food. The mailing went to 1,380 people. The survey was taken by 248 individuals at an 18% response rate. Thirty five percent opened the mailing, 48% of those people clicked the link and it was shared through social network 8 times. Individuals were from McLean County. It was understood that participants might have a more developed perspective on their food than the average individual in Bloomington-Normal because of its circulation through the Green Top Grocery e-mailing list. Regardless, because they are already making food purchasing decisions that benefit their health, the environment and the local economy, their reasoning behind their behavior can lead to information to help alter the purchasing decisions of others. Information they shared was also used to help assess quality food markets and strengthening the community food system.

Ethical Concerns

There is the knowledge that participants would not consent to the interview or survey and that information may be lost or certain perspectives may not be gathered. Regardless, the consent form and its promise for anonymity and confidentiality should have participant comfort. There are potential ethical issues by asking people about their basic needs, since it relates to income and lifestyle; it is possible that discussing external costs may leave some overwhelmed. This researcher attempted to create an open atmosphere so that people felt comfortable participating and tried to end on a positive note so participants do not feel discouraged. Throughout the personal observation, key informant and consumer interviews and survey this researcher made every effort to be objective so as to eliminate the presence of bias. Efforts were taken to ensure methodology was standardized and to allow for better qualitative data collection and wise use of participant time.

Summary of Research Design and Methodology

The review of literature helped define what is understood about the topic of external costs, “cheap” food, and quality food markets in a community-based system, and purchasing decisions. A combination of other qualitative methods will allow for a qualitative study that assesses consumer perceptions of the external costs to “cheap” food and different quality food markets around Bloomington-Normal, IL. The data collected from the variety of methods will

lend new information to this community and help strengthen other community-based food systems.

Research Findings and Discussion

Information gathered from the literature review was mentioned earlier. This section will focus on reporting and analyzing data collected in observations, key informant interviews, consumer interviews, and the consumer survey.

Key Informant Interviews

The research purpose of the key informant interviews was to obtain an understanding of food issues and the food system locally and nationally. A secondary purpose was to learn more about quality food markets and models for a community-based food system. My analysis will assess the information gathered from community representatives, agricultural representatives and quality food market representatives separately. A variety of information was offered in the interviews regarding the food system and food issues, consumer perceptions, the community-based food system, and Green Top Grocery Cooperative efforts. The discussion will assess the local community food issues and whether there is a need for strengthening the community food system in Bloomington-Normal, consumer perceptions and efforts for the proposed Green Top Grocery food cooperative. [See Appendix D for question guide].

List of Key Informants

Community Representatives

- **Mercy Davison**, Normal, Illinois Town Planner.
- **Joe Tulley**. Uptown Normal Marketing Director. Handles the Farmers' Market in Normal, Illinois.
- **Elaine Sebald**. Edible Economy, board member for Green Top Grocery Food Cooperative, Illinois Farmers Market Task Force and Illinois Food Safety Advisory Committee Member.

Food Production/Agricultural Representatives

- **Rod M. Weinzieri**, Executive Director, Illinois Corn Marketing Board and Illinois Corn Growers Association.
- **Terra Brockman**, Writer, Founder of the Land Connection. Trains farmers in sustainable agriculture. Brother, Henry Brockman, conducts successful Community Supported Agriculture Program.
- **Mike Kelley**. McLean County Soil and Water Conservation District Chairman. Also a conventional farmer in Lexington, Illinois.
- **David Bishop**, PrairiErth Farm in Atlanta, IL. Organic Certified. Also a member of the Edible Economy Project and efforts for aggregation center.

Quality Food Market Representatives

- **Lisa Smith**. Brand Development Manager, Neighborhood Co-op Grocery, Carbondale, Illinois.
- **Yadira Ruiz**. Former Produce Manager at Common Ground Natural Foods, Bloomington, Illinois.

- **Kim Ryburn.** Owner of Wild Birds Unlimited in Normal, Illinois. Coordinator for food cooperative in Bloomington-Normal, IL (operated until about 2010). Also, grows own food.
- **Lisabeth M. Searing,** PhD, RN. Assistant Professor, School of Nursing, Illinois Wesleyan University. Shopper at Common Ground Food Cooperative in Champaign-Urbana, Illinois.
- **William Munro,** Ph.D. Professor of Political Science, Illinois Wesleyan University. Member of Common Ground Food Cooperative in Champaign-Urbana, Illinois.
- **Joy Rust.** Marketing Manager of Common Ground Food Cooperative in Champaign-Urbana, Illinois.
- **James Simeone,** Ph.D. Chair of Political Science, Illinois Wesleyan University. Helped organize the IWU Peace Garden, which has goals for a community garden.
- **Jeremy Spencer.** Director of Wellness Program, Illinois Wesleyan University. Involved with community food system, refrains from participation with Green Top Grocery food efforts.

Community Representatives

It was reported by the three community representatives that Bloomington-Normal is an agriculturally productive area and the local and community food movement is growing. “This community could produce at least two-thirds of its food” [Elaine Sebald, pers. comm., 2012], and in the last decade the level of professional producers has gone up significantly, many people are providing and purchasing local food and not just as a hobby [Mercy Davison, pers. comm., 2012]. It was stated that quality food markets appear to be growing in success (such as the farmers market) [Joe Tulley, pers. comm., 2012] but appear to be more expensive and that the individuals purchasing food in these locations is not the average individual. Community representatives believe that there are food access issues and that the local food movement may not be profitable. However, they also recognize that the area can produce food for itself and that the local food movement in Bloomington-Normal is growing and promising.

When asked directly about the community food system and whether it needs strengthening or is necessary, community representatives held different positions. It was stated that strengthening is important, but unclear whether it is a necessity [Joe Tulley, pers. comm., 2012]. It was also stated that strengthening is important but that the Town of Normal will not be playing a direct role in its development [Mercy Davison, pers. comm., 2012]. In addition, it was stated that it is important and that the next step is the Green Top Grocery Food Cooperative [Elaine Sebald, pers. comm., 2012]. Statements such as these suggest that community representatives believe the strengthening of the food system is important, but it may not be a necessity and it is not a direct goal for the Town of Normal. I was not able to get a statement from the city of Bloomington. Regardless, steps to move the town forward are being taken with the proposed food cooperative. As of November of 2012, the cooperative efforts are in the process of gaining members [Elaine Sebald, pers. comm., 2012].

Statements regarding the Green Top Grocery food cooperative by community representatives are as follows. Although not directly related to the food cooperative, it was stated that staying local and providing healthy food to community residents and Illinois State University students, since many have restricted transportation, would be good for bringing food traffic into the community and supporting the local economy [Joe Tulley, pers. comm., 2012]. It

was stated that a grocery store in uptown Normal has been a goal for many years and that the cooperative model could be successful [Mercy Davison, pers. comm., 2012]. It was also stated that the next step for the community is the Food Cooperative and will get people thinking about their food [Elaine Sebald, pers. comm., 2012]. I was not able to interview Marisa Brooks, who holds a similar position in Bloomington as Joe Tulley does in Normal. It appears that something that would provide healthy food to residents would benefit the community, a grocery store has been a goal, and Elaine (who is spearheading cooperative efforts) believes the cooperative model is a way to do this for the community and could make consumers think about their food. Perhaps, every community representative does not believe that Green Top Grocery is the answer but if the cooperative can fulfill community needs of a grocery store selling healthy foods, it could be beneficial.

It was mentioned in the last paragraph, that one community representative believed that the food cooperative could get people to think about their food and where it comes from. When asked how they thought consumers perceived their food or external costs to their food, it was stated that, “I think the overwhelming majority put no thought into it” [Joe Tulley, pers. comm., 2012], or that they don’t think many people think about it but the portion of the community that is educated about it are concerned and help the food system grow [Mercy Davison, pers. comm., 2012]. It was also stated that “people are much more aware of their food than they were ten years ago” [Elaine Sebald, pers. comm., 2012]. With these comments it appears that it is believed by some community representatives that consumers do not think about their food but the food cooperative could help people alter their perceptions of their food. In addition, over the last decade, people are much more aware of their food system, and that the growing portion of people concerned with their food will allow the food system to grow.

Key informant interviews with community representatives reveal that the community has food issues (e.g. people are disconnected from their food) but is strengthening the local food system. Furthermore, representatives believe strengthening the community food system is important, and the food cooperative is one suggested next step. Although the food cooperative is not the step everyone had in mind, a grocery store that supports the local economy and has a goal for available healthy food in Normal could fulfill described needs. Interestingly, uptown Normal is one proposed location for the food cooperative. In addition, the cooperative may be a quality food market that will get people thinking of their food more which all representatives believe very few community members are concerned with.

Agricultural Representatives

Key informant interviews with four agricultural representatives covered similar topics as the community representative interviews [See Appendix D for questions]. These topics cover community food issues, whether the community food system should be strengthened, opinions about consumer perceptions, food production changes and practices. Two representatives came from sustainable agricultural backgrounds and two were from conventional farming backgrounds and this led to oppositional opinions on what was necessary for the food system.

Statements regarding the food system and food issues were as follows. “One of the challenges agriculture faces is that there is an ever-increasing majority of the population that do not grow and produce their own food...food is produced for convenience... farmers need to grow what people are willing to buy and pay for...there have to be tradeoffs” [Rod Weinzieri, pers. comm., 2012]. We need to allow the ecosystem we rely on for food to survive, people

forget where their food comes from, they think of it as just appearing in the store, we need to give people the choice between processed or high nutrition and delicious foods [Terra Brockman, pers. comm., 2012]. The basic problem is figuring out how to get infrastructure in place so that the system can benefit the farmer and eliminate the ‘middle man’ [Dave Bishop, pers. comm., 2012]. Conventional farming brings volume into the equation and although there is a place for organic farming it would not be enough to produce the volume of food needed [Mike Kelley, pers. comm., 2012].

A few issues were raised by these interviews; consumer perceptions, maintaining the land, types of farming, and trade offs. It seemed that most agricultural representatives believed that people are not as aware of where their food comes from as people have been in the past. As a result, consumers demand convenient, more processed foods and then those food products are produced. Those on the side of sustainable agriculture would argue that the environment is harmed in the production of more processed foods and higher volumes of those foods. Conventional farmers believe there is a place for organic farming but since it cannot produce the same volumes, it should not be the only option provided to consumers. It appears that these key informants believe people need to be given options, of processed and fresher foods, of organically or conventionally-grown food products, etc, because there are tradeoffs of both. It was also argued by all agricultural representatives that the system should be reorganized so farmers can get money directly. Therefore there is room for both types of production in the food system and if consumers made different food demands, those products would be supplied.

The following statements were made about whether the strengthening of the food system is necessary for McLean County and opinions on consumer perceptions. “A huge portion of society will only get further removed from how food is produced,” people need to connect with farmers and understand the tradeoffs [Rod Weinzieri, pers. comm., 2012]. “Strengthening the community food system is necessary,” people need to get a better understanding of how things are connected and vote with their pocket books, “the way we spend money will make things happen” [Dave Bishop, pers. comm., 2012]. “We need to make local food more available,” more of the population needs to make demands of farmers; a combination of different efforts (i.e. CSAs, farmers’ markets) will strengthen the food system [Terra Brockman, pers. comm., 2012]. People need the ability and opportunity to purchase what they want, for example, “If large numbers of consumers were willing to pay price for organic, then we would see changes [Mike Kelley, pers. comm., 2012].

The four agricultural representatives interviewed have different opinions on the best practices for food production and they differ on which is the most pertinent food issue. Regardless, it appears that agricultural representatives believe giving consumer options is important; people should be able to choose between high quality organic food products or decent conventionally produced food products. There is a place for both in the system. It seems that some believe that a focus should be placed on the farmer and others on the consumer. It is agreed that people are becoming too far removed from their food and food production and that they can and should vote for what they want to be produced with their money because it will affect what is supplied.

Quality Food Market Representatives

Key informant interviews with eight quality food market representatives were conducted to better understand the role that different quality food markets play in the community of

Bloomington-Normal and other communities. These quality food markets reduce external costs to “cheap” food. Observations will be included; there was a representative for farmers’ markets, community gardens, CSAs, a local food store, food cooperatives, and lastly, a discussion of larger facilities [See Appendix D for questions].

Farmer’s Market

Many statements and observations were made about the Bloomington and Normal farmers’ market by interviewees and were related to research done on this topic; farmers get an opportunity to directly sell their food products, food products are locally produced, and the market provides social benefits. Although the Normal farmers’ market season ended shortly after I began research (normally held 3:00-6:00p.m. each Tuesday), I was able to go to the Bloomington farmers market every Saturday for ten weeks to make observations. In addition there is a farmers market outside of one of the local food stores. I attempted to go at different times throughout the 7:30a.m. to 12:00 noon period of time so that I could determine what it was like at different times. I was told that the type of person that goes early in the morning is different than the dog walkers or the individuals who come by later on [Elaine Sebald, pers. comm., 2012], and that the type of individual attending differs [Joe Tulley, pers. Comm., 2012]. The farmers’ markets in Bloomington-Normal are available for low-income individuals with LINK cards which function for individuals that qualify for food stamps. Temperature was a factor of these markets. When it was warm there were many mulling about, sitting, enjoying the weather and when it rained the market closed down early. It appeared that fewer people attended the market for as long when it began getting cold in October. Regardless of the weather, there were always conversations occurring. The limited availability of this quality food market and other conditions affected shopper attendance, but there was still community interest.

It was stated the farmers’ markets are successful, have grown over time and are more recently subsidized by the Town of Normal and City of Bloomington [Joe Tulley, pers. comm., 2012]. According to the Downtown Bloomington Association website, there are up to 40 vendors that go to the farmers market, however there are fewer in Normal and by observation, about one third of all vendors present week to week sold non-food products. In Normal, it is said that “[they] maintain the market because it is the right thing to do,” it is sustainable, pedestrian friendly, and brings more foot traffic into the town [Joe Tulley, pers. comm., 2012]. I was not able to interview Marisa Brooks of the Bloomington Farmers’ Market directly but in an article written about the market, she was quoted saying, “you can talk with each farmer, baker and artist about their products to learn more about its creation and uses... ‘intimate, worthwhile and enjoyable experience,” [DeSalvo, 2012]. Representatives and observations on the farmers’ market show that the outlet has a lot of vendors; food and objects are from local sources, the market has been growing over time and many interested people come. These interested people come for the food, the atmosphere, the conversations, and other types of products offered regardless of the weather. Therefore, the farmers’ market reduces external costs, provides quality and local food products, supports the local agricultural producer and provides a social outlet the community.

Community Gardens

Community gardens serve a number of purposes in a community, such as positive environmental functions and community well-being. This was reflected in observations and the key informant interview for community gardens in Bloomington-Normal, IL. I did not travel to see every community garden in the area, so although I do not have adequate observations for all

of them, I did visit the community garden near Illinois Wesleyan University's campus, the IWU peace garden. Many students have been working to grow vegetables and provide the upkeep since the groundbreaking ceremony in 2011. In the fall of 2012, a hoop house was built to protect the growing plants during the winter months. In an interview with the faculty who is supervising this project, he mentioned that there were a number of community gardens created in West Bloomington, a certified food desert. He stated that community gardens can help people understand how much it takes to produce food, if they are to see what it takes, they may be willing to pay more for their food [James Simeone, pers. comm., 2012]. Therefore it seemed community gardens benefit communities; and as the IWU garden has begun supplying some of its food products to Illinois Wesleyan University (an institution), the community is more self-sufficient. Additional comments regarded the necessity of strengthening the food system by creating demand for food products that do not externalize costs and because "agribusiness is not going to give up power easily" [James Simeone, pers. comm., 2012]. Community gardens then help strengthen a community food system and can alter consumer perceptions of their food.

Community-Supported Agriculture (CSAs)

Community Supported Agriculture programs (CSAs) are quality food markets found to support local agricultural producers. I attended one of Henry Brockman's CSA pick-ups at the local bike shop one Tuesday evening at 6:30p.m. and spoke to Terra Brockman, his sister and the founder of the Land Connection. Observations were made during this pick-up, many people were catching up with each other, people got to choose their food or even trade an item; families, couples or individuals came in. The general atmosphere was positive. This type of system directly benefits the farmer. In addition to fresh vegetables, Henry provides his produce 26 weeks of the year instead of 18 to 20 like regular CSAs. Henry also provides his customers with recipes and different ideas for what to do with what he produces weekly. Therefore, ideas are provided for those who do not understand how to cook with his produce, which was a concern during interviews conducted at his pick-up. It was stated that "CSAs are really good for farmer security through the year" [Terra Brockman, pers. comm., 2012]. In addition, Terra Brockman had compared Henry's food prices with what could be found in large corporate owned supermarkets and found that his prices were typically less than the produce at these locations and was much fresher [Terra Brockman, pers. comm., 2012]. This representative stated this quality food market combined with others such as farmers' markets would benefit the community. Sustainable agriculture was important to sustaining the environment; CSA programs benefit the farmer and provide customers with low-price healthy foods.

Locally-Owned Stores

In the literature, it is said that local grocery stores support local agricultural producers year-round and that corporate owned supermarkets were their competition. Observations were conducted at Common Ground Grocery in Bloomington, which had its 35th anniversary during the research. The store was smaller than a supermarket and defined as a natural food store although local items were provided, it had a wide variety of food available, not everything was fresh produce, and there was also natural processed food. Prices can be high but there were sales and the food was natural and ingredients were provided on the items. A representative from the natural food stores stated that Common Ground was the only place to purchase natural food when it was created in 1977, that it "remains to this day, unique. There are other natural food stores but none quite like Common Ground. Common Ground has offered a place for local farmers to sell their produce for years; no other place in town has done that" [Yadira Ruiz, pers.

comm., 2012]. In addition, it was mentioned, “there are some ‘imitator’ grocery stores that claim to offer natural foods and organic produce but when you look at their offerings, the items on the shelves that are actual natural or organic, are quite insignificant” and that these other stores provide an ambiance that people desire with fewer natural products [Yadira Ruiz, pers. comm., 2012]. This interview suggests natural and local food stores can provide natural and local food to the community and support local food producers. Some food stores may try and imitate this model but may provide an insignificant amount of natural or organic food products, regardless, the community has benefited from this quality food market.

Food Cooperative

Food cooperatives support the community economy and local agricultural producers; provide a social outlet for community members as well as educational opportunities, which can alter their lifestyles. The stakeholders in the business are community members. The community of Bloomington-Normal is in the process of gaining membership for a food cooperative. People involved in the food cooperative process in this community or in communities with food cooperatives were contacted; a food cooperative in another community was observed.

“A food cooperative makes people step up, think about their food, and think about their food system. It is an organization that can support farmers and local food, and can also play a role that is not profit-centered (such as food in schools and low income households)” [Elaine Sebald, pers. comm., 2012]. It was also stated that food cooperatives typically are formed in different waves, it begins with a buying club, which provides organic and local food and is usually stationed out of someone’s house or church once the demand expands, the trend is toward small, full-service grocery stores with more community support [Elaine Sebald, pers. comm., 2012].

I spoke with Kim Ryburn, the coordinator from the buying club in Bloomington-Normal that stopped in 2010. She stated that she was unsure of who would benefit from the Green Top Grocery food cooperative but does desire to find a way to get consumers to understand the difficulty of growing food [Kim Ryburn, pers. comm., 2012]. Another key informant that has a life philosophy dedicated to sustainability was also unsure about Green Top Grocery. He was concerned about whether it would be affordable for everyone and felt the food cooperative would not be the social and community outlet he had hoped [Jeremy Spencer, pers. comm., 2012]. It appeared that these two informants believe that this second wave of food cooperative for the food system is a concern but if the outlet could be dedicated to sustainability and make people think of their food origins than perhaps it could solve some community food issues.

There are models of running food cooperatives in many communities all over the United States. In the communities of Champaign-Urbana, IL and Carbondale, IL, the food cooperatives are entitled the Common Ground Food Co-operative and the Neighborhood Co-op Grocery, respectively. These food cooperatives started as buying clubs and are now successful and expanding. Communication from representatives at these cooperatives yielded the following statements. The marketing director at the Common Ground Food Co-operative in Champaign-Urbana, IL stated, “After the initial step to bring food to low income areas, focus began to shift its emphasis on natural foods, as the country at large developed an awareness of the need for food raised without environmentally-damaging and unhealthy chemicals, and as the demographics of the membership changed...we are thought of as an educational resource in town. With our expansion, we are adding a teaching kitchen and full time education coordinator”

[Joy Rust, pers. comm., 2012]. In addition to bringing food to low income areas and other initiatives, the Common Ground food cooperative is able to sponsor and create community events as they grow and expand. Similarly, the Neighborhood Co-op Grocery in Carbondale offers an “extensive outreach program, cooking classes, farm tours and other types of events” [Lisa Smith, pers. comm., 2012]. It was also stated that cooperatives are leading the way, the Neighborhood Co-op has eliminated plastic bags at their registers and labeling GMO products. Furthermore “cooperatives work for the sustainable development of communities through policies and programs accepted by the members... because its [their] mission to do so” [Lisa Smith, pers. comm., 2012]. Expansion of the Common Ground Food Cooperative and The Neighborhood Co-op has allowed them to hold more food products because of their high demand; create more programs and provide more services to the community. These models are seen as leading the way, bringing consumers healthy, natural and organic products. They appear to be necessary and beneficial in the communities, alter consumer perceptions and offer many services. If the proposed model here in Bloomington-Normal can provide a similar outlet in this community, it could also be beneficial.

Accounts from faculty members of Illinois Wesleyan University that teach in Bloomington-Normal, live in Champaign-Urbana and shop at the Common Ground food cooperative in Champaign-Urbana (one is a member) will be mentioned here. My own observations of this quality food market include that it seems to be accessible by public transportation, even early in the morning there are people sitting and eating. All foods were extensively labeled, customer service was above average, and there are even hygiene items available and other natural and organic products. The existence of the Common Ground in Champaign-Urbana is “a sign of change in some way that people think of their food” and it is one of many initiatives in the community, in addition to local CSAs, community gardens, etc. [William Munro, pers. comm., 2012]. This model also allows for a community and food connection because it expands the social side of food but it may only feed a small sector of consumers [William Munro, pers. comm., 2012]. Another statement more readily discusses the economic benefits; the food cooperative provides a direct outlet for the farmer to sell his or her goods and the cooperative model has been successful in the community [Lisabeth Searing, pers. comm., 2012]. It was argued that the community food system needs to be strengthened [William Munro, pers. comm., 2012] and that the local food system is not enough to overcome poverty because of the high prices low-income individuals cannot afford. Statements from Common Ground food cooperative patrons describe that the community food system needs to be strengthened but it may not feed everyone. Also, the addition of the food cooperative has allowed for a connection of the community and its food and provided an outlet for the local farmers to sell their goods.

There are varying positions on the role of a food cooperative in a community-based food system as it relates to people involved in efforts and potential members. Champaign-Urbana and Carbondale models have been successful and are growing, they provide a forward thinking community outlet and provide consumers with natural, organic, and healthy foods. Shoppers at the Common Ground in Champaign-Urbana also believe that the cooperative initiative has benefitted the community, but say the prices are high. Efforts for a food cooperative in Bloomington-Normal are underway, but a representative of the buying club wave is unsure about who it will benefit and another representative is concerned about price, regardless, they both

desire a strengthening of the food system and getting people to connect with their food; the food cooperative could provide this outlet to Bloomington-Normal and other communities.

Aggregation Center

A food processing facility in McLean County would allow for more self-sufficiency. I had the opportunity to speak with one quality food market representative about the Edible Economy's proposed aggregation center for farmers. The aggregation center would be for all farmers, would provide packaging and storage services, it would be a way to provide institutions such as schools in the community with larger volumes of locally produced food [Dave Bishop, pers. comm., 2012]. It would reduce the external costs of the industrial food system, and it would strengthen the local food system by improving the self-sufficiency of the community. It is the cooperative business model on a larger scale and could potentially support the entire region of Central Illinois by supporting agricultural producers more directly and supply consumers with lower prices [Dave Bishop, pers. comm., 2012]. This proposed larger year round facility is underway and a goal of the Edible Economy, and will help strengthen the community food system.

Summary of Key Informant Interview Findings and Discussion

There are many ways to strengthen community-based food systems and minimize external costs. The quality food markets mentioned in this section available in Bloomington-Normal and other communities help support environmental, economic, and social health of a community. Community, agricultural, and quality food market representatives all believe the community food system has its place, although at different levels. It is argued that the community food system could not supply the volume of food necessary to feed people, but if the community food system was strengthened it could supply more people and the industrial food system would be less harmful. Although the development of a Green Top Grocery food cooperative in Bloomington-Normal is currently underway, there is evidence that the model is successful for other communities. This business model functions as more than just a grocery store because it offers other services to the community. Just one of these quality food markets benefits a community food system, but a combination can better strengthen the community food system and reduce external costs of the industrial food system.

Consumer Interviews

The purpose of consumer interviews was to determine what factors influence people's food purchasing decisions [See Appendix E for questions]. A secondary purpose was to determine their perceptions of external costs to "cheap" food. A tertiary purpose was to help define survey questions. Twenty-seven consumer interviews were conducted.

As mentioned earlier, these consumers were recruited when I approached and asked about their interest in answering a few questions. It is possible that certain positions on topics were missed because I typically approached people at the farmers' market or CSA pick up who were by themselves and did not seem to be in a big hurry to get their food products and leave. Regardless, I was able to develop survey questions from the responses gathered. Even after asking a few different questions to students, individuals at the farmers' market, and a CSA pick-up, it was clear that there was a range of consumer perception and food purchasing decisions made. Opinions varied on what influences food product choice, where food is purchased, difficulties or benefits of purchasing food at quality food markets, food concerns, and approaches to strengthening the local food system.

Responses to, “what do you look for when you are deciding to buy a food item? In other words, what influences your choice when purchasing food?” revealed a variety of opinions. Some responses resembled the work done by French and Glanz et al., such as taste, cost, convenience, and nutritional values. All responses could be categorized into the following: unprocessed, locally produced (supports local farmer or community), organic, and then, price, taste, convenience, nutritional value, freshness/seasonality, quality, variety, requested by household, and knowing where food comes from. Those that listed the qualities of food that were more specific to external costs such as ‘unprocessed, locally produced, and organic’ are considered to be informed. Less informed participant responses fell into the other nine categories that referenced external costs indirectly. Therefore there is a spectrum of understanding of external costs, a range of awareness of food-related issues and external costs, from less to more informed about external costs. These response options become visible in the survey later as Question 5 [Appendix F].

A variety of responses were gathered for, “At what locations do you purchase your food?” Locations mentioned varied from large corporate owned food stores or supermarkets, to the quality food market locations in town such as farmers’ markets, the local food store, or the CSA. It is important to note that some of these interviews were conducted at the farmers’ market or the CSA. Some people were even known to grow their own food. Many people who were interviewed displayed an interest in different quality food markets and described them as important for getting certain foods. It was already interesting to note that people that made a point of growing their own food or shopping at quality food markets still relied on supermarkets for their food. These responses helped develop Question 2, 3, and 4 on the survey [Appendix F].

Consumer perceptions of the external costs to their food were addressed with the question, “What concerns you the most in regard to your food?” Responses regarded things such as “convenience, price, etc” and were brought up during the question of important to their food purchases, or they addressed concerns more directly. These concerns were on a range, once again, from informed to uninformed. Informed as namely, “How healthy food is, pesticides or other chemicals, how livestock is treated, supporting the local community/farmers, genetically modified foods, negative effects to the environment” and these are related directly to external costs. Or more basic responses such as “where food comes from or not knowing what is in it/safe/clean,” which address external costs but indirectly, as if the individual is unaware of where food is coming from or what may make the food unsafe. These responses contributed to Question 6 on the survey [Appendix F].

The second round of questions asked in consumer interviews [Appendix E] specifically asked, “what do you believe would be a good approach to strengthening the local food system?” And “As stated in the results of the Hartman Group’s studies on the consumer, ‘change is consumer driven’ [Hartman Group, 2000, xi]. If that is the case, what would make it easier to make local food purchasing decisions that could benefit the local food system?” Unfortunately, the responses to this question were limited and I ended up developing a few of my own responses through discussions with key informants. Common responses actually indicated education and marketing or advertising as an approach that would strengthen the food system. Decreasing food prices, convenience, and an explanation of the importance of the food system were indicated as a way to alter purchasing decisions. This became question 8 on the consumer survey [Appendix F]. I found it difficult to make a close-ended question from the responses and it ended up as the open-ended question 9 on the survey [Appendix F].

Other steps taken to develop the survey included adding the consent form, looking at other studies, census questions from the government, and an interest to gather opinions on the Green Top Grocery food cooperative. Results from the consumer survey will be presented and discussed in the next section.

Consumer Surveys

The purpose of the consumer survey was to determine what factors influence people's food purchasing decisions. A secondary purpose was to determine consumer perception of external costs to "cheap" food. A tertiary purpose was to assist in the development of strategies, including educational approaches that can help strengthen local community-based food systems that minimize external food costs. The results of the survey will be analyzed here to understand the objectives above; it was taken by 248 people and circulated through the Green Top Grocery e-mailing list of 1,380 (an 18% response rate).

The demographics of the respondents can be seen in Appendix H. These results do not match the census results for McLean County, IL, so it is not a representative sample of the community. Regardless, the data matches the results found for the wellness interested population from The Hartman Group's studies.

Sixty-six percent of the surveys were taken by females, 33% by males, and 1% by other. Of those that responded to the question on highest level of education completed, 35% of participants had a post graduate degree, 29% were college graduates, 17% had some college, 16% had some post graduate work, 4% were high school graduates or equivalent, no one had a lower degree than that. Of those that responded to the question regarding income, 48% of participants had an average household income of \$75,000 or more, 28% had an income between \$50,000 and \$75,000, 17% between \$25,000 and \$49,000, and 7% less than \$24,999.

Seventy percent of respondents were from Bloomington-Normal and 30% were from other communities. Of that 30%, respondents were from McLean County, the neighboring Woodford Counties, and three people from Chicago. Therefore, all individuals were within 150 miles of Bloomington-Normal, IL, many were closer and fit the definition of 'local,' (within 100 miles). Eighty-seven percent of participants indicated that they purchased 50% or more of food for household; 13% purchase less than 50%. Although there was not a demographic question of age, it is known that some survey takers were college students, and it is unclear just how they would answer questions regarding household income or what community they lived in.

Participants of this survey typically purchased more than 50% of food for their household, were more typically female, were more likely to have a post graduate degree, were more likely to have a household income of \$75,000 or more and more likely to live in the community of Bloomington-Normal. It is not surprising that education and household income is so high because these consumers are interested in the food system and high quality food and in theory have more disposable income to spend on food. Similarly, in the Hartman Studies of the wellness consumer, it was found that wealthy people (income above \$100,000) are more likely than other demographic groups to be wellness consumers, females are more likely than men, and there is usually a primary household shopper (one person who does 50% or more of the grocery shopping) in about 85% of households, [Hartman Group, 2008, 19]. The profiles of participants in this survey were similar to studies conducted by the Hartman Group, and are therefore adequate individuals from which to learn about food pricing and strengthening the food system.

Data from other questions are visible on the following charts. Many of these questions have close-ended questions and quantifiable data from a chart and then qualitative data in the form of quotes from a follow up open-ended questions.

Table 1 and question 3 deals with at what types of food retail stores do people purchase their food. The question specifically asked about corresponding percentages of use. It is possible that the percentages of use are how often people go to a place or volumes of food purchases; percentages of use did not necessarily add up to 100. Even participants that are interested in shopping at local groceries and CSA programs, or produce food for themselves, may also rely on large corporate-owned grocery stores or supermarkets for their food. This relates to the idea that we expect a large variety of food all year [Steier, 2011, 170] and even for those who grow for themselves or make direct purchases from farmers may still need to rely on supermarkets for other items. It is interesting to note that the proposed aggregation center for Central Illinois could allow a larger volume of produce and processed goods to be distributed to the region. Perhaps then people would rely less on the supermarkets while shopping, and the costs of the industrial food system could be minimized.

Table 1: Question 3: At what locations do you purchase your food?

Answer (n=248)	Min Value	Max Value	Average Value	Standard Deviation	Responses #
Large Corporate-Owned Grocery Stores (i.e Supermarkets)	0	100	62	26	238
Small Noncorporate -Owned Grocery Stores (i.e Local Groceries)	0	91	19	20	179
Specialty Food Stores And/Or Convenience Stores	0	100	13	15	122
Farmers Markets	0	99	14	16	187
Community Supported Agriculture (or CSA) Programs	0	95	18	19	41
Other Direct Purchases From Farmers	0	94	13	20	55
Produce Food Products For Self	0	100	16	22	97
Other	0	100	16	25	21

When participants elaborated on “Other,” some of them mentioned “my garden,” or “back yard garden,” perhaps these individuals did not see that spot on the question or wanted to make a distinction. In addition, others state “Amazon,” “internet,” and “mail order,” which indicates that some volume of food products for some participants are alternatively acquired.

Question 4 asked why people shopped at these location and the following are the organized categories for the open-ended themes. Common responses mentioned that large corporate owned supermarkets dominate the area, have lower prices and it is convenient to go there and just get everything. Other quality food market locations are better for quality, fresh foods, healthy, natural or organic options, usually provide an outlet for vegans or vegetarians, but the price can be higher, farmers markets and CSAs are less convenient. Shorter responses resembled “Convenience, cost, variety,” and “I want to support local more; however, it is expensive and not as easily accessible.” Longer responses include, “We do make a conscious effort to obtain most of our food from local sources whenever we can. We do this for environmental, health and economic reasons. The food we get at farmers' markets and our CSA may be more expensive than items purchased at a grocery store, but paying more puts money

back into our local economy, helps farmers continue to provide fresh food to the community, and it guarantees that the foods we purchase are fresh, chemical, and seasonal.”

Descriptions for the differences between types of food stores include, *“The large corporate-owned food grocery store because its convenient and has a large variety, Farmer’s market because I like the fresh produce and like to support local when I can, small grocery stores and specialty food stores for the other things I can’t find anywhere else. I have a small garden and an herb garden that I do for enjoyment and to use for canning/cooking,”* and *“I have two kids to haul around, so making a quick trip to the store for less fresh food indoors is more practical than taking them across town and shopping outdoors,”* and *“unfortunately large stores have the widest variety of items and also have off season fruits and veggies.”* Supermarkets are visited for convenience and a larger variety of cheap food. Other locations are frequented for quality food and other types of items.

Table 2: Question 5: What are the most important things you look for when making a food purchasing decision? Or, what influences your choice(s) when purchasing food?

Answer (n=248)	Not at all Important (1)	Slightly Important (2)	Moderately Important (3)	Very Important (4)	Extremely Important (5)	Mean
Price	2	31	102	76	31	3.43
Taste	0	2	19	136	85	4.26
Convenience	6	41	92	78	26	3.32
Nutritional Value	2	6	36	115	84	4.12
Freshness/Seasonality	1	8	30	110	92	4.18
Unprocessed	9	31	58	77	68	3.67
Quality	0	2	14	114	113	4.39
Variety	3	26	63	101	49	3.69
Locally Produced (i.e. Supports Local Farmer Or Community)	8	29	76	69	61	3.6
Requested By Household	30	38	71	64	29	3.1
Knowing Where It Comes From	10	35	64	80	52	3.54
Organic	43	43	63	57	37	3.01
Other	7	0	3	3	10	3.39
Availability	0	17	60	124	33	3.74

Question 5 addressed what influences participant’s food purchasing decisions and what is important in their food; quantifiable data is found in Table 2. The item that was identified as having the highest level of importance was quality, then taste, freshness/seasonality, nutritional value, availability, variety, unprocessed, knowing where it comes from, price, etc. Similar to results found by French and Glanz et al mentioned in the literature review, it appears that taste, cost, convenience, nutritional value are important factors when making food purchasing decisions but they are not the four highest categories. These participants identified quality, taste, freshness and seasonality very highly, nutritional value next, price and convenience much later.

This is interesting because convenience and price are mentioned as important items in responses to other questions. Regardless, it is interesting that this group of participants find the quality of the food item to be very influential and important in their food purchasing decision. These quality food purchasing decisions help strengthen the community-based food system.

Question 6 and table 3 asked participants about the external costs to their food. Economic, social, and environmental health factors discovered in the literature review were present as options, and the level of concern for the option was to help determine their level of awareness for the issue. External costs affect everybody, if these issues are identified as concerns, it is possible the individual understands this and has a high level of awareness for external costs to “cheap” food.

The categories that enlisted the highest concern included “how healthy the food is,” then “not knowing what is in it/safe/clean,” “pesticides or other chemicals,” “supporting the local community or farmers,” “negative effects to the environment,” and then other concerns such as “where food comes from,” “GMOs,” “livestock treatment” followed. Responses such as “where food comes from, how healthy food is, and not knowing what is in it/safe clean” were three responses that explained a low level of understanding of external costs. On the other hand, “pesticides and other chemicals, supporting the local community and farmers, livestock treatment, genetically modified foods, and negative effects to the environment” were to be understood as higher levels of understanding for external costs specifically because they directly identified the issues. Therefore, it seems that participant awareness of external costs are high, their concern for identified external costs ranges from moderately to extremely concerned. Nevertheless, the depth of understanding is not high, some are more aware of the specific external costs than others.

Table 3: Question 6: What concerns you the most in regards to your food?

Answer (n=248)	Not At All Concerned (1)	Slightly Concerned (2)	Moderately Concerned (3)	Very Concerned (4)	Extremely Concerned (5)	Mean
Where Food Comes From	7	31	79	81	45	3.52
How Healthy Food Is	1	11	29	121	80	4.11
Not Knowing What Is In It/ Safe/ Clean	1	14	41	95	90	4.07
Pesticides Or Other Chemicals	4	22	45	81	91	3.96
Supporting The Local Community/Farmers	6	24	53	93	66	3.78
How Livestock Is Treated	20	36	45	80	61	3.52
Genetically Modified Foods	24	30	44	64	80	3.6
Negative Effects To Environment	10	19	69	74	70	3.72
Other	9	0	1	3	5	2.72

Even though this participant population is concerned with quality and that affects their food purchasing decisions they do not appear to have a great understanding of external costs, and do not identify them directly as serious issues. The issue of supporting the local community and farmers, the economic external costs, is identified with higher concern and thus appears to be a well-understood external cost to “cheap” food.

Table 4: Question 7: How willing would you be to pay more for the food you buy to ensure food quality was addressed to your liking?

Answer (n=248)	Response Number	Response %
Not at all willing	12	5%
Willing to pay more, just not sure how much	67	28%
Willing to pay 0-10% more (e.g. conventionally grown food product is \$1.00, organically grown food product is up to \$1.10)	31	13%
Willing to pay 11-20% more (e.g. \$1.00 vs. \$1.20)	37	15%
Willing to pay 21-30% more (e.g. \$1.00 vs. \$1.30)	30	12%
Willing to pay 31-50% more (e.g. \$1.00 vs. \$1.50)	31	13%
Willing to pay 51-100% more (e.g. \$1.00 vs. \$2.00)	22	9%
Willing to pay more than 100% (e.g. \$1.00 vs. \$2.01+)	12	5%
Total	242	100%

Question 7, and the corresponding Table 4, asked participants to decide how much they would be willing to pay to ensure food quality was addressed to their liking. Twenty eight percent of individuals stated they would be willing to pay more, but were not sure how much. After that, the largest category was 15% willing to pay 11-20% more for their food, and 13% willing to pay 0-10% more for their food.

This data is similar to what is found in the Hartman’s study on price premiums. Thirty two percent of people would be willing to pay 20% more for their food; in this research it is the second largest category at 28% (0-10% and 11-20% categories combined). The Hartman Group found that of those interested in wellness products, only small percentages were willing to pay more than 20%. This is reflected in the smaller percentages of people willing to pay more for quality food. It is interesting to note is that of the participants that responded to this question, 95% stated they would be willing to pay more for their food, 67% of which identified how much, which ranged from 1% to 100% to more than the asking price of the conventional food item. From responses to this question it can be deduced that Bloomington-Normal residents concerned with food quality and with a basic understanding of external costs are willing to pay more to ensure they are buying quality food.

Each participant may define quality differently, it may include the environmental harm and other external costs to health or the local economy, or it could simply relate to the taste and freshness of food. This question does not touch upon a definition of quality directly. Regardless, the questions leading up until this one have addressed quality, and it is possible that what is important in food purchasing decisions and food concerns have carried over into the participants understanding of this question. And many participants are willing to pay more for quality food.

Table 5 depicts question 8 which asks each participant to define what they believe would be the best approaches to strengthening the food system in their communities. Since this question asked participants to mark all that apply, the percentages do not add up to 100%. Eighty three percent of respondents identified increasing availability and/or convenience of local or quality foods for individuals of varying economic backgrounds as the best approach for strengthening the food system.

Table 5: Question 8: What do you believe would be the best approach(es) to strengthening the food system in YOUR community in order to provide availability or awareness of food products meet the quality you desire?

Answer (n=248)	Response Number	Response %
There is no need for an approach to strengthen food system	6	2%
Lowering prices of local or quality foods	83	34%
Increasing availability and/or convenience of local or quality foods for individuals of varying economic backgrounds	201	82%
Highlighting human health benefits of local or quality foods	114	47%
Emphasizing benefits to the local community and farmers made by purchasing local and quality food	168	69%
Explaining positive environmental effects of local and quality food purchases to consumers	119	49%
Other	15	6%
Unsure	4	2%
More marketing/advertising of local or quality food available	127	52%
Educating consumers on food preparation of local and quality food purchases	125	51%

In this way, it appears local consumers want it to be easier to get quality foods and desire more quality foods to be available. Perhaps another quality food market with more hours would satisfy consumers. In addition, participants identified emphasizing economic benefits, increasing advertising and marketing, and explaining positive environmental effects and highlighting human health benefits. In this way it appears that the economic, environmental, and health benefits of quality foods are understood at least to some point and that the external costs of “cheap” food are understood. Participants believe that focusing on promoting these effects could be beneficial to the community as a whole and if it was paired with more marketing and advertising, it is possible more people would participate in similar food purchasing decisions.

Question 9 was paired with the above question 8 and was an open-ended question asking participants to elaborate on making it easier to purchase quality goods. There were a variety of responses that fell under the themes: more from mainstream sources, labeling, convenience, more quality food markets, and other.

The theme of ‘more from mainstream sources’ mentions getting local, seasonal, high quality foods into mainstream sources. It is stated that many people use larger grocery stores to purchase food and they needed a greater selection with a greater variety there. *“The majority of the people in this town shop at big grocery stores. The local farmers need to get their goods in those places. It would be helpful for those places to have a designated local area for the produce/meat, etc or have a very recognizable sign to designate “local” and have the name and town where it’s from listed right there with the package.”* This last quote leads to the next topic of labeling.

People mentioned an interest in having foods that are GMO products labeled, or having the food location label how local the food product is or where it originated. This is because they feel ‘local’ could be 30 miles or even 300 miles away. *“I don’t want to be spending a lot of time reading small print on labels on my produce to find out where it comes from.”*

The next category was entitled convenience; this was mentioned in a variety of ways and appears to be desired by many people. It was stated that the farmers’ market needs to alter its hours so it is available at different times, and that other locations where quality food is accessible is not always convenient to travel too or the times are not applicable for everyone. I have also

included price into this category as people mentioned that price was an issue that denied low income individuals access to the food or that local food stores that exist have prices that are too high. *“I try to purchase unprocessed food (whole grain, no hydrogenated oils, etc), but price and convenience takes priority right now,”* and *“if costs can be kept moderate so those with limited means can afford to eat healthy, local foods, that will go a long way toward influencing food decisions.”*

In addition to some of the suggestions already made, it appeared that some of the respondents desire more locations that sell local and quality foods. *“More natural/organic food store choices would be great to keep the prices more competitive,”* and *“a 12 month source of the freshest locally produced food would help a lot. This should also be a source of organic quality foods.”* Including, *“have more stores that carry local foods,”* and even *“Establish a food hub for local producer distribution. Respect and reward good business models. Establish community gardening. Educate the public about successful cooperation models. Start a co-op grocery store.”* Other responses included, *“teach people how to plant a garden,”* so a number of solutions were provided to make it easier for people to access quality food.

Therefore, there were a number of ideas offered that could make it easier for people to purchase the local food they desire. Many individuals desire the availability of local and organic food products to be increased in some fashion. Ideas for this included getting those food products into mainstream sources such as supermarkets, increasing the hours of currently operating quality food markets such as farmers’ markets or increasing the number of quality food markets, by adding an additional grocery store, or even a food hub for producer distribution.

Table 6: Question 10: How beneficial do you believe the proposed Green Top Grocery Cooperative would be to the Bloomington-Normal community?

Answer (n=248)	Not At All Beneficial	Slightly Beneficial	Moderately Beneficial	Very Beneficial	Extremely Beneficial	Unsure Or No Opinion	Mean
Green Top Grocery Cooperative	5	15	37	80	75	25	4.18

Question 10 in Table 6 asked participants to state how beneficial they saw the Green Top Grocery proposed by the Edible Economy project. The most common response was very beneficial, then extremely beneficial, with moderately beneficial, with other responses following afterwards. Therefore, it appears that most participants believe that the food cooperative would be beneficial to the community. The survey was sent out to individuals that were interested in learning more about the food cooperative, in this way, the data is most likely skewed from a regular ‘wellness interested’ population. Regardless, their open-ended responses still shed light on the food cooperative and its potential role in the community and some of the concerns people have.

Question 11 was the open-ended question asking participants to elaborate on their feelings on the food cooperative. Responses can be categorized as follows: Economic Benefits, Convenience and Price Concerns, Unsure of Benefits and Other. One of the economic benefits participants mentioned in regard to the food cooperative is that it would keep money in the community and provide an outlet for direct purchases to farmer; these were positive statements. *“A consumer owned cooperative grocery would give people a sense of ownership and more power in their food options. It will also serve as a center of gravity not only for good local food,*

but for education and outreach of all sorts. And it will keep money circulating in our community,” and “A great way to provide local fresh, great tasting products direct from farms.”

Another common topic regarded convenience and price concerns and were positive or negative outlooks on the operation. *“Would not change the current environment of local food-- would still be hard to find local food for reasonable prices,” or “if it was available and I could get most of my food in one place, it would be great, I am too old to travel around to shop.” “Sounds like it would be a grocery store that would be available year round. I’m not sure, though, that consumers will be willing to pay a fee to join,” and “it would increase availability and access.”* There were statements regarding how the food cooperative would differ from other natural food stores because there appears to be high quality local foods already available.

The ‘unsure of benefits’ category involved people not understanding the overall concept, concerns with the business model, or whether there was a need. *“I don't understand the overall concept,” and “Their business model is massively debt based and not very likely to succeed. Would be far better to start smaller with comparatively little debt and to grow,”* and even, *“I am not sure there is a need for another grocery in town. I would like to have more information about just exactly how Green Top would operate.”* Perhaps more advertising and marketing could be done.

The last category involved a range of responses, such as, *“Another location in town with quality local food would offer the community choice,”* and *“I think it will raise awareness. Just its existence will force people to consider their own food habits. I think many people don't think beyond major supermarkets because they just haven't thought about it,”* and *“While I don't see the physical store itself as having a very large impact, necessarily, I believe it's part of creating and sustaining a variety of related social values in the community.”*

Participants have a variety of views on the Green Top Grocery. Although there are some that question whether it is necessary, its business model, or how it would differ from other natural food stores in the community, others believe that it could be beneficial to the area if it increased the availability and convenience of acquiring local food products with reasonable prices. Still, other participants view it as very necessary. Those unsure of its necessity still see it as a way to connect people to their food and develop social and sustainable values in the community. Generally, among the participants, the food cooperative could be seen as beneficial, and those that are skeptical can see it as beneficial if it meets a need in the community.

Summary of Consumer Survey

The consumer survey yielded a number of results regarding consumer perceptions of their food and the food system. Although the demographics of the participants do not reflect the census results for McLean County, IL and was not representative of the population, the participant profile does fit results found in the Hartman Group’s studies of the Wellness consumer. Thus, offering an appropriate sample population to gather information regarding food purchasing decisions from.

It was found that although participants purchase their food at a number of quality food market locations, many still rely on large corporate-owned grocery stores (or supermarkets) for a large volume of their food. Reasons for this include the convenience and pricing at supermarkets whereas other quality food market locations are better for quality, healthy, natural or organic foods, but are less convenient. Quality, taste, freshness and seasonality, and nutritional value as

more influential factors in food purchasing decisions, price and convenience came much later in the scale (an indicator of the type of participant, more concerned with their food). Getting others concerned with these food influencers could alter their food purchasing decisions.

These participants are understood to have a better understanding of wellness products but still had a limited understanding of external costs. Although they had concern for the responses that indirectly related to external costs, they did not readily identify the causes of external costs and therefore there is limited depth of understanding. Regardless of the lack of direct understanding of external costs, 95% of consumers stated they would be willing to pay more for the quality products they desire. Eighty-three percent of participants identified increasing the availability and convenience of local and quality for individuals of varying economic backgrounds as a best way to strengthening the food system. Encouraging others to shop at quality food markets may encourage similar desire for increased availability of local and quality foods and willingness to pay more.

Offered suggestions for strengthening the food system included increasing the hours of operation for existing locations that sell quality products, increasing the variety of food products in mainstream sources, or adding quality food markets. Following these suggestions could increase local and quality food options for consumers; which were stated as ways to make it easier to purchase those food products. That may affect food purchasing decisions. The food cooperative was seen as very beneficial by most participants. However, when asked to expand on their position, it seemed that individuals either wanted more information because they did not understand the plan or were unsure how it differed from other food stores, regardless, it was found that if the food cooperative could meet needs in the community and expand social values, it would be welcome.

Summary of Research Findings and Discussion

The combination of key informant and consumer interviews and data from the consumer survey made it possible to assess quality food markets in Bloomington-Normal and their ability to minimize external costs and obtain consumer perception of these costs. Key informant interviews expanded on the role of the community food system and some interviewees determined there was a need for strengthening. The combination of quality food markets in the community helps to minimize the external costs of the food system but other retail outlets could be utilized. For example, a food cooperative and the aggregation center proposed by the Edible Economy Project would provide healthy, local food items for individuals in the form of a grocery store as well as food for institutions.

Consumer interviews portrayed a range of understanding of external costs and helped develop the consumer survey. The consumer survey further defined the limited understanding of external costs. For example, individuals may be concerned with economic, social, and environmental effects but fewer could directly identify the causes of their concern. It was mentioned that quality food is important in food purchasing decisions and people are willing to pay more money to ensure they have quality food products (although at differing amounts). Increasing the availability and convenience of local and quality food for individuals of all economic backgrounds was offered as a way to strengthen the community food system. Suggestions for meeting this need came in the form of getting quality and local food into mainstream stores, increasing the convenience and availability of existing quality food markets or increasing quality food markets. If the last solution is addressed, the food cooperative and the

aggregation center are two initiatives that could meet the need, alter food purchasing decisions, strengthen the community food system and minimize external costs.

Research Limitations

Although this research has strengths there are also limitations. This researcher focused on the individuals that already have been making food purchasing decisions that benefit a community-based food system to find an approach to encouraging others to do the same. If there was a way to spend as much time studying individuals who do not make food purchasing decisions for the community food system as those that do, it could have added another dimension to the research.

In addition, more key informant interviews would have allowed more information to be gathered regarding the Bloomington-Normal community. With more survey participants from a different e-mailing list, the sample could have been more representative of the Bloomington-Normal community. If more data could have been gathered from informants and consumers in other communities new information may have been presented. Furthermore, although this researcher made the effort to eliminate bias while implementing methodology, there is the possibility for human error. Regardless of these limitations, information gathered is still useful for community-based food systems in other communities.

Research Recommendations

The following recommendations are for the community of Bloomington-Normal, IL; the information may also be useful to other communities. The following steps should be considered to benefit the economic, environmental, and human health in the community and reduce the barriers of making local and quality food choices that can help alter what is supplied and minimize external costs of the industrial food system.

1. *Strengthen the following parts of the food system:*

- a. ***The community-based food system:*** It was stated that strengthening the food system is important by key informants but is not a community initiative in Normal. Farmer's markets are subsidized; other quality food markets should be similarly supported, such as the proposed Green Top Grocery food cooperative. Agricultural key informants identified that the system should be reorganized so that farmers can get money more directly. If this systematic approach became an initiative in Bloomington-Normal, IL and other communities, community health would improve.
- b. ***Sustainable agriculture production sector:*** It is agreed by some key informants that sustainable agriculture is better for the environment; the use of conservation practices should increase. There is a place for conventional and sustainable agriculture in McLean County; even those that shop at quality food markets or grow their own food rely on large corporate owned food stores for food products. Consumers should have the option to purchase food from either source.

2. *Reduce barriers to purchasing local and quality food products:* In the consumer survey, participants most commonly identified increasing the availability and convenience of local

or quality food for people of all economic backgrounds as a way to strengthen their community food system. It is thus one of the barriers to purchasing these food products; price was the other identified barrier.

- a. ***Increase availability and convenience:*** Three themes emerged when consumers identified how to increase availability and convenience and these were demonstrated with quotes in the research findings and discussions sections. The first involves making the existing quality food markets more convenient such as increasing the hours of operation of the farmer's market. Secondly, consumers showed interest in getting local and quality food into mainstream food stores such as supermarkets. The third theme was increasing the number of quality food markets such as adding more local food stores or more community-supported agriculture programs. One way to address this last suggestion would be to try a different quality food market such as the food cooperative.
 - b. ***Utilize food cooperative:*** Community representatives revealed that Normal has been interested in a grocery store that could supply quality food to residents in uptown Normal, a proposed location for the Green Top Grocery Food Cooperative currently gaining membership. The food cooperative could also fulfill the desire for additional quality food markets by consumers and increase the availability and convenience of quality food products. If the cooperative can fill community interests for a quality grocery that would be beneficial. After a while, it could also provide educational services and benefit the economy.
 - c. ***Address price concerns:*** Ninety-five percent of survey participants (a sample population that is already concerned with quality food) are willing to pay more for their food but about one-third of those individuals are only willing to pay up to 20% more. Quality food markets concerned with quality and local food should keep these price premiums in mind.
3. ***Alter consumer perceptions:*** Key informants agree that very few individuals in Bloomington-Normal think about where their food is coming from. Additionally, consumers making quality and local food purchasing decisions have an understanding of external costs to "cheap" food but the depth of understanding is limited in the community. Altering perceptions could alter food-purchasing decisions and benefit the community-based food systems of this community and others.
 - a. Survey participants identified emphasizing the economic benefits to the community, increasing advertising and marketing of where products are sold, and explaining the positive environmental effects and human health benefits of quality and local food products as a way to strengthen the food system. A combination of these elements could alter other consumer's perceptions of their food and increase the depth of understanding of external costs to "cheap" food.

Conclusions

The U.S. industrial food system has made advancements in agricultural production and distribution. These advancements were developed in order to increase the amount of food available to the national population. Unfortunately, regardless of the increased food availability

food insecurity still exists and hunger remains. In addition, one of the resulting consequences of this industrial system is a large volume of food produced and sold at artificially low prices to consumers. These “cheap” foods externalize costs onto human, economic, and environmental health.

Community-based food systems can minimize the external costs to the industrial food system. Their focus on self-sufficiency of a community and the sustainability of food systems is a systematic solution that can address community food security. If communities can utilize a number of quality food markets including year round locations such as food cooperatives and aggregation centers, the community-based food system can be strengthened. Additionally, awareness of external costs to “cheap” food can be limited even among community residents that make quality and local food purchasing decisions and shop at quality food markets. Therefore, there is a need for additional quality food markets in communities and initiatives to address the limited depth of understanding of external costs to “cheap” food.

The community of Bloomington-Normal, IL is one area that is growing its community food system but could benefit by utilizing more quality food markets. These quality food markets alter consumer perceptions of their food by getting them to think about where their food comes from. Increasing the availability and convenience of purchasing local and quality food products will provide consumers with more food product options. In turn, the food purchasing decisions of quality and local food products will affect which food products are supplied. The changes in demand and supply will strengthen the community-based food system.

This growing community atmosphere around quality and local food will justify the lifestyles of wellness among consumers and encourage them to continue altering their food purchasing decisions. Then, as fewer food products are demanded from the industrial food system and community food systems strengthen and become self-sufficient, external costs will be minimized and community health everywhere will improve.

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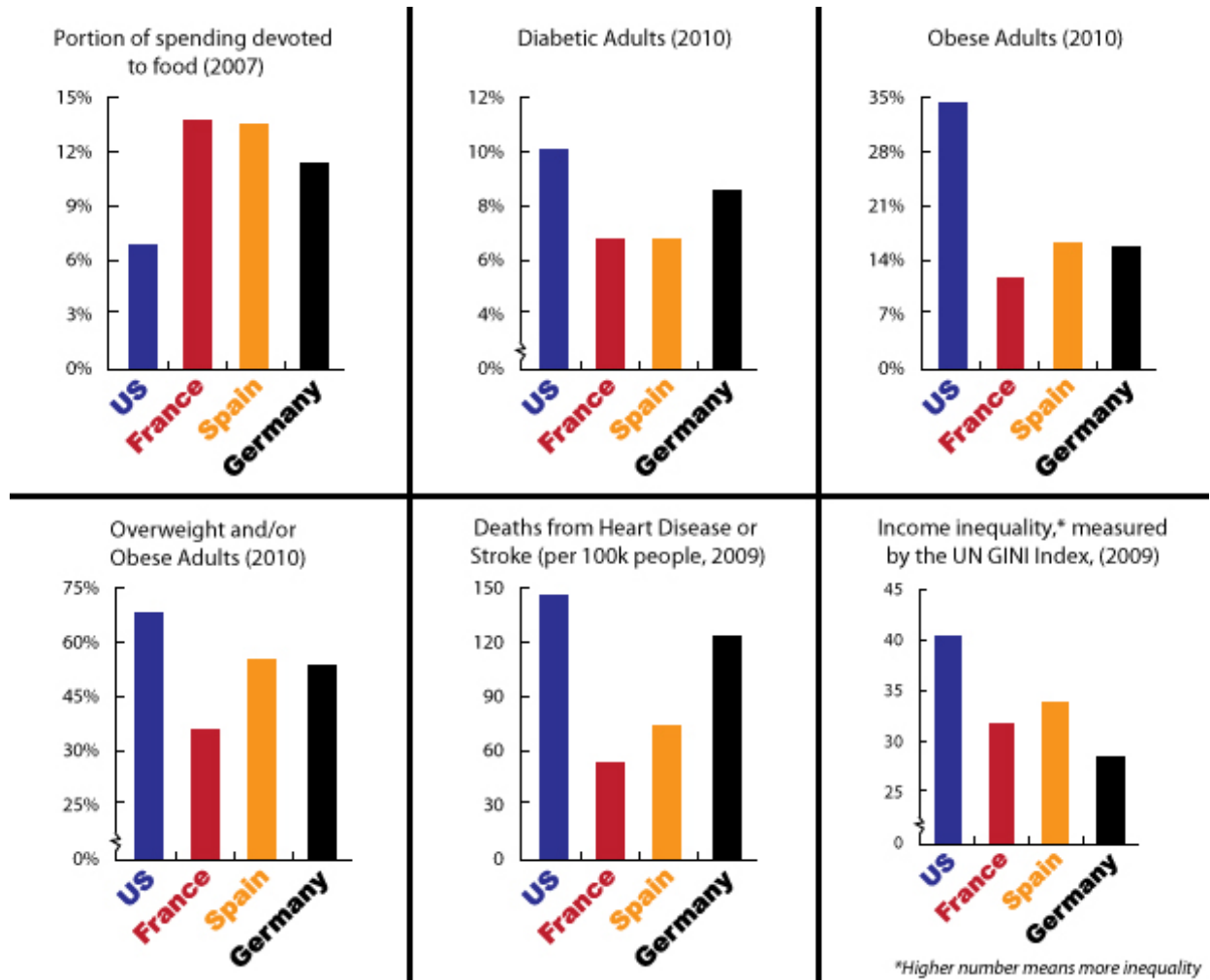
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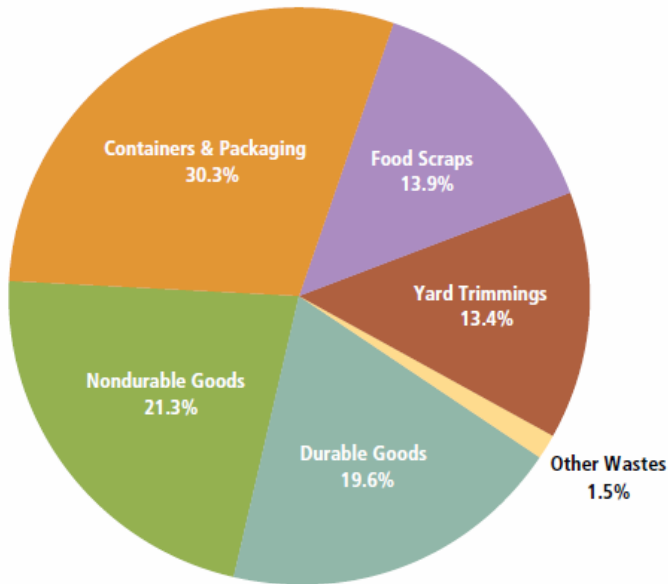
Appendix A- Bar Graphs

Comparative bar graphs representing food spending, wealth, and disease trends in four 'developed' countries. These graphs are based off of statistics published by the United States Department of Agriculture (USDA) in conjunction with the Organization for Economic Cooperation and Development (OECD) in 2010. [Philpott, 2010]



Appendix B- Municipal Solid Waste (MSW) Generation in the United States; Figure 6: in categories of objects. 13.9% of waste is food waste. [www.epa.gov]

Figure 6. Total MSW Generation (by category), 2010
250 million tons (before recycling)



Appendix C – Objective Statement for Methodology

Key Informant interview's purpose is to gather an understanding of food issues and food systems locally (Bloomington-Normal, IL) and nationally. A secondary purpose is to learn more about quality food markets and models for a community-based food system.

The purpose of *consumer interviews* is to determine what factors influence people's food purchasing decisions. A secondary purpose is to determine their perceptions of external costs to "cheap" food. A tertiary purpose is to help define survey questions.

The purpose of the *consumer survey* is to determine what factors influence people's food purchasing decisions. A secondary purpose is to determine consumer perceptions of external costs to "cheap" food. A tertiary purpose is to assist in the development of strategies, including educational approaches (material) that can help strengthen a local community-based food system(s) that minimize external food costs.

Appendix D- Question Guides for Key Informant Interviews

Appendix D includes the questions guides for the purposes of this study and were used for different types of participants during Key Informant Interviews. Also included is a list of Key Informants.

Food Production/Agricultural Representatives

- 1) What is your perspective on the food system in McLean County/Bloomington-Normal, IL? (if issues mentioned, what are challenges to trying to tackle these issues?)
- 2) How do you think consumers in the community perceive their food? (The external costs to their food? Do you believe they are willing to pay more to ensure these costs are minimized?) or (How do you think consumers perceive different farming practices?)
- 3) Can you tell me a little bit about what you do and how it's changed over time? Do you perceive any benefits or negative effects to the community as a result of it?
- 4) What is your perception of the local and community based food system? Do you believe the community system needs to be strengthened?
- 5) Do you know have any additional comments, concerns, or questions for me?

Quality food market Representatives

- 1) How do you perceive the state of food issues/the food system in Bloomington-Normal, Illinois? (if issues mentioned, what are challenges to trying to tackle these issues?)
- 2) Can you tell me a little about _____? (e.g. local food store, farmers' market, community garden, CSA...) Initial challenges? What benefits or changes or negative effects has the community seen as the result of the development of)_____?
- 3) Do you feel the development/strengthening of the community food system is necessary for the community?
- 4) How do you think consumers in the community perceive their food? The external costs to their food? Do you believe they are willing to pay more to ensure these costs are minimized? (For those that know: 5) Perspective on Food-Cooperative efforts in Bloomington-Normal, IL?)
- 5) Do you know have any additional comments, concerns, or questions for me?

Community Representatives

- 1) How do you perceive the state of food issues/the food system in Bloomington-Normal, Illinois? (if issues mentioned, what are challenges to trying to tackle these issues?)
- 2) How do you think consumers in the community perceive their food? The external costs to their food? Do you believe they are willing to pay more to ensure these costs are minimized?
- 3) Do you feel the development/strengthening of the community food system is necessary for the community? What benefits or changes or negative effects has the community seen as the result of the development of the community-based food system?
- 4) What is your perspective on the efforts for a Co-operative in Bloomington-Normal, IL?
- 5) Do you know have any additional comments, concerns, or questions for me?

List of Key Informants

Food Production/Agricultural Representatives

- **Rod M. Weinzierl**, Executive Director, Illinois Corn Marketing Board and Illinois Corn Growers Association.
- **Terra Brockman**, Writer, Founder of the Land Connection. Trains farmers in sustainable agriculture. Brother, Henry Brockman, conducts successful Community Supported Agriculture Program.
- **Mike Kelley**. McLean County Soil and Water Conservation District Chairman. Also a conventional farmer in Lexington, Illinois.
- **David Bishop**, PrairiErth Farm in Atlanta, IL. Organic Certified. Also a member of the Edible Economy Project and efforts for aggregation center.

Quality Food Market Representatives

- **Lisa Smith**. Brand Development Manager, Neighborhood Co-op Grocery, Carbondale, Illinois.
- **Yadira Ruiz**. Former Produce Manager at Common Ground Natural Foods, Bloomington, Illinois.
- **Kim Ryburn**. Owner of Wild Birds Unlimited in Normal, Illinois. Coordinator for food cooperative in Bloomington-Normal, IL (operated until about 2010). Also, grows own food.
- **Lisabeth M. Searing**, PhD, RN. Assistant Professor, School of Nursing, Illinois Wesleyan University. Shopper at Common Ground Food Cooperative in Champaign-Urbana, Illinois.
- **William Munro**, Ph.D. Professor of Political Science, Illinois Wesleyan University. Member of Common Ground Food Cooperative in Champaign-Urbana, Illinois.
- **Joy Rust**. Marketing Manager of Common Ground Food Cooperative in Champaign-Urbana, Illinois.
- **James Simeone**, Ph.D. Chair of Political Science, Illinois Wesleyan University. Helped organize the IWU peace garden, which has goals for a community garden.
- **Jeremy Spencer**. Director of Wellness Program, Illinois Wesleyan University. Involved with community food system, refrains for participation with the Green Top Grocery food efforts.

Community Representatives

- **Mercy Davison**, Normal, Illinois Town Planner.
- **Joe Tulley**. Uptown Normal Marketing Director. Handles the Farmers' Market in Normal, Illinois.
- **Elaine Sebald**. Edible Economy, board member for Green Top Grocery Food Cooperative, Illinois Farmers Market Task Force and Illinois Food Safety Advisory Committee Member.

Appendix E- Question Guides for Consumer Interviews

Survey Questions- First Round

- 1) What do you look for when you are deciding to buy a food item? In other words, what influences your choice when purchasing food?
- 2) At what locations do you purchase your food?
- 3) What makes it difficult or challenging to purchase food at farmers' market/CSAs?
- 4) What do you see as beneficial or rewarding about purchasing food at farmers' market/CSAs?
- 5) What issues concern you the most in regard to your food?

Survey Questions – Second Round

- 1) What makes it difficult or challenging to purchase food at farmers' market?
- 2) What makes it beneficial or rewarding to purchase food at the farmers' market?
- 3) What do you believe would be a good approach to strengthening the local food system (or the combination of farmers' market's, CSA programs, local food stores, etc)? (there is no need, price/availability/convenience, knowledge of benefits, environmental, economic, and human health effects)
- 4) As stated in the results of the Hartman Group's studies on the consumer, 'change is consumer driven' [Hartman Group, 2000, xi]. If that is the case, what would make it easier to make local food purchasing decisions that could benefit the local food system?

Appendix F- Consumer Survey Questions

QUESTION 1: Hello! My name is Jennifer Long. I am a senior at Illinois Wesleyan University and for my Environmental Studies 480 Senior Seminar class; I am interested in obtaining consumers' perception of their food. This research has been approved by the University's Institutional Review Board. This survey should take about 5-10 minutes. If you are able to fill it out, your help would be greatly appreciated. Any information you share will be anonymous and confidential; there will be no way to connect the information you have shared back to you. If you feel uncomfortable at any time you may refuse to answer questions or stop at any moment. If you have any questions, you may contact the professor of the course, Dr. Laurine Brown at 309-556-1067 or lbrown@iwu.edu. You may also contact the Chair of the IWU Institutional Review Board, Dr. Jim Sikora, at 309-556-3163 or jsikora@iwu.edu. Thank you for your time. Do you consent?

- Yes
- No

QUESTION 2: What percentage of food would you say you purchase for your household?

- Less than 50%
- 50% or more

QUESTION 3: Where do you purchase or receive your food that you use at home? (Please mark all that apply and corresponding percentages of use).

- _____ Large Corporate-Owned Grocery Stores (i.e Supermarkets)
- _____ Small Noncorporate -Owned Grocery Stores (i.e Local Groceries)
- _____ Specialty Food Stores And/Or Convenience Stores
- _____ Farmers Markets
- _____ Community Supported Agriculture (or CSA) Programs
- _____ Other Direct Purchases From Farmers
- _____ Produce Food Products For Self
- _____ Other

QUESTION 4: Please offer some reasons as to why you choose to purchase your food at those locations.

QUESTION 5: What are the most important things you look for when making a food purchasing decision? Or, what influences your choice(s) when purchasing food? Please rank the importance you place on the following items.

	Not all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nutritional Value	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Freshness/Seasonality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unprocessed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Locally Produced (i.e. Supports Local Farmer Or	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Community)					
Requested By Household	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowing Where It Comes From	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION 6: What concerns you the most about the food available for you to purchase or eat? Please rank your concern for the following items.

	Not At All Concerned	Slightly Concerned	Moderately Concerned	Very Concerned	Extremely Concerned
Where Food Comes From	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How Healthy Food Is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not Knowing What Is In It/ Safe/ Clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pesticides Or Other Chemicals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supporting The Local Community/Farmers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How Livestock Is Treated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Genetically Modified Foods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Negative Effects To Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION 7: How willing would you be to pay more for the food you buy to ensure food quality was addressed to your liking? (e.g. produce, meat, etc.)

- Not at all willing
- Willing to pay more, just not sure how much
- Willing to pay 0-10% more (e.g. conventionally grown food product is \$1.00, organically grown food product is up to \$1.10)
- Willing to pay 11-20% more (e.g. \$1.00 vs. \$1.20)
- Willing to pay 21-30% more (e.g. \$1.00 vs. \$1.30)
- Willing to pay 31-50% more (e.g. \$1.00 vs. \$1.50)
- Willing to pay 51-100% more (e.g. \$1.00 vs. \$2.00)
- Willing to pay more than 100% (e.g. \$1.00 vs. \$2.01+)

QUESTION 8: What do you believe would be the best approach(es) to strengthening the food system in YOUR community in order to provide availability or awareness of food products meet the quality you desire? (Mark all that apply)

- There is no need for an approach to strengthen food system
- Lowering prices of local or quality foods
- Increasing availability and/or convenience of local or quality foods for individuals of varying economic backgrounds
- Highlighting human health benefits of local or quality foods
- Emphasizing benefits to the local community and farmers made by purchasing local and quality food
- Explaining positive environmental effects of local and quality food purchases to consumers
- More marketing/advertising of local or quality food available
- Educating consumers on food preparation of local and quality food purchases
- Unsure
- Other _____

QUESTION 9: Please comment on what you believe can be done in YOUR community to make it easier to purchase the quality foods you care about.

QUESTION 10: How beneficial do you believe the proposed Green Top Grocery Cooperative would be to the Bloomington-Normal community?

	Not At All Beneficial	Slightly Beneficial	Moderately Beneficial	Very Beneficial	Extremely Beneficial	Unsure Or No Opinion
Green Top Grocery Cooperative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QUESTION 11: Please offer some reasons as to why you feel this way about the proposed Green Top Grocery Cooperative.

DEMOGRAPHIC INFORMATION

QUESTION 12: How would you best describe yourself?

- Male
- Female
- Other

QUESTION 13: What is your highest level of education completed?

- Some High School
- High School Graduate or Equivalent
- Some College
- College Graduate
- Some Post Graduate Work
- Post Graduate Degree

QUESTION 14: What is your annual household income?

- Less than \$24,999
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 or more

QUESTION 15: Which community do you live in?

- Bloomington/Normal IL
- Other (please specify) _____

THANK YOU FOR PARTICIPATING IN THIS SURVEY!

Appendix G- Timeline for Research

The research steps and a schedule for different events will be outlined as follows:

- August 28: Research Project Description Due
- Month of September
 - Gathering articles, researching for the literature review and working on setting up interviews,
 - Waiting on IRB decision regarding application
 - Mapping the community of Bloomington-Normal
 - **Due:** September 10: Revised Research Project Description
 - **Due:** September 20: IRB (Institutional Review Board) Research Project Application
- Month of October
 - Week of October 1:
 - Setting up interviews of community representatives, leaders of quality food markets and programs, using referrals and conducting internet searches for more Key informants, conducting Key Informant interviews
 - Modifying questions for interviews, if necessary
 - Setting up and conducting times for approaching consumers, asking for consent and conducting consumer surveys/ interviews
 - **Due:** October 5: Research Project Proposal
 - Week of October 8:
 - Continuation of Key informant and consumer interviews, surveys, focal groups, synthesizing and organizing data,
 - Making any modifications to topic or question guide, if necessary,
 - Adding any information into the research proposal, if necessary, revising research proposal
 - Send thank you notes to any Key informant interviewees
 - **Due:** October 8: Written Peer Response
 - Week of October 15:
 - Continuation of Key informant and consumer interviews, synthesizing and organizing data,
 - Making any modifications to topic or question guide, if necessary,
 - Adding any information into the research proposal, if necessary,
 - Week of October 22:
 - Continuation of Key informant and consumer interviews, synthesizing and organizing and analyzing data
 - Adding any information into the research proposal, if necessary,
 - Week of October 29:
 - Tying up loose ends, continuation of key informant interviews, send out consumer survey through Elaine Sebald
 - Analyzing data, writing and refining research project report
 - Make sure interviews and thank you notes are completed
 - Work on Draft Research Report
- Month of November:
 - Week of November 5:
 - Work on Draft Research proposal
 - **Due:** November 9: Draft Research Project Article/ Report
 - Week of November 12:
 - November 12: Return of Peer Response
 - Revise and edit
 - Week of November 19:
 - **Due:** November 25: Final Research Article/ Report
 - Work on Presentation
 - Week of November 26
 - Work and practice on Presentation
- Month of December
 - December 4: Formal Briefing of Project to the Community

Appendix H- Demographic Results from the Consumer Survey

Demographic Table 1: Question 2: What percentage of food would you say you purchase for your household?

N=248	Answer	Response	%
	Less than 50%	28	13%
	50% or more	192	87%
	Total	220	100%

Demographic Table 2: Question 12: How would you best describe yourself?

N=248	Answer	Response	%
	Male	80	33%
	Female	160	66%
	Other	2	1%
	Total	242	100%

Demographic Table 3: Question 13: What is your highest level of education completed?

N=248	Answer	Response	%
	Some High School	0	0%
	High School Graduate or Equivalent	10	4%
	Some College	40	17%
	College Graduate	69	29%
	Some Post Graduate Work	38	16%
	Post Graduate Degree	85	35%
	Total	242	100%

Demographic Table 4: Question 14: What is your annual household income?

N=248	Answer	Response	%
	Less than \$24,999	16	7%
	\$25,000 to \$49,999	40	17%
	\$50,000 to \$74,999	63	28%
	\$75,000 or more	110	48%
	Total	229	100%

Demographic Table 5: Question 15: Which community do you live in?

N=248	Answer	Response	%
	Bloomington/Normal IL	169	70%
	Other (please specify)	71	30%
	Total	240	100%