

A COMPREHENSIVE ANALYSIS OF FOOD SECURITY
ASSESSMENTS OF LANE COUNTY

By

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The current food system is both unsustainable in terms of environmental pollution, social injustice, and decreasing community support and development. In recent decades, the Community Food Security Movement evolved to help reduce hunger through a new lens - a focus on the community, rather than the household or individual. This report examines the method of reducing hunger and improving community well-being through community food system development and the community food security assessment process. This thesis focuses on community food security in Lane County, Oregon. It includes an examination of the current global food system and the basic environmental and social advantages of a locally based food system. In addition, this thesis contains an analysis of current information regarding Lane County's food system and a gap analysis of these reports. This report concludes with a set of suggestions for further research and recommendations for local policy groups and food activists.

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CHAPTER I. INTRODUCTION

Food security is a term which refers to the availability of food and one's access to it. It has been a concern for people of all cultures since the beginning of humankind. According to the UN's Food and Agriculture Organization, "Food security exists 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."¹ This idealistic definition of food security is the most recent and most commonly accepted and was determined at the 1996 World Food Summit in Rome. Hunger is a possible consequence of food security, and was defined in 1990 as both, "The uneasy or painful sensation caused by a lack of food" and "The recurrent and involuntary lack of access to food."² Food security is dependent upon successful linkages between all aspects of a food system, which includes food production, direct markets, transportation, storage, distribution, processing, food waste processing, food assistance programs, governmental roles, food retailing, and community health.

Just after World War II a movement began that focused on worldwide food insecurity and numerous organizations were created to help put an end to world hunger. Although many of programs and organizations working to end world hunger originally appeared to be successful, hunger rates have been increasing since the 2002 oil spill. Recent studies show that there are more than one billion people in the world that are

¹ Food and Agriculture Organization, UN. *The state of food insecurity in the world, 2001*. Rep. FAO, United Nations, 2001. Web. 10 Oct. 2009. <<http://www.fao.org/docrep/003/Y1500E/Y1500E00.HTM>>.

² Anderson, S.A. "Report on Nutritional Assessment Defined Terms Associated with Food Access, Core indicators of nutritional state for difficult to sample populations." *Journal of Nutrition* 102 (1990): 1598.

food insecure, about 50 million of whom are in the United States.³ The idea of ending world hunger along with technologies developed during WWII spurred the Green Revolution; whose advocates claimed it would ‘feed the world.’ Although successful at first, the Green Revolution had numerous unanticipated consequences and was not the panacea it was thought to be for the hunger epidemic.⁴ In response to the continuation of world hunger, there has been a recent push to focus on local or community food insecurity in addition to international hunger.

The federal government has implemented a variety of programs to help improve food security in the United States. A few of these programs include the Food Stamp Program, National School Lunch (and Breakfast) Program, Summer Food Service Program for Children, and the Supplemental Nutrition Program for Women, Infants, and Children (WIC). Since 1965, the federal government has revised and passed ten farm bills. Many of these bills have been under high scrutiny since they can affect international trade, environmental preservation, rural communities, and food safety. After the Community Food Security Act of 1996, the United States Department of Agriculture launched the Community Food Security Initiative in February 1999; “this nationwide initiative seeks to forge partnerships between the USDA and local communities to build local food systems, decrease need, and improve nutrition.”⁵

³ Food Research and Action Center, USDA. 2007
<http://www.frac.org/html/hunger_in_the_us/hunger_index.html>

⁴ Manning, Richard. *Food's Frontier The Next Green Revolution*. New York: University of California, 2001 pgs. 6, 81, 95, 197.

⁵ Kantor, Linda. "Community food security programs improve food access." *Food Review*. USDA, Jan. - Apr. 2001. Web. 4 Nov. 2009.
<http://findarticles.com/p/articles/mi_m3765/is_1_24/ai_80517255/?tag=content;coll>.

In 2002, the USDA's Economic Research Service, Cooperative State Research, Education, and Extension Service, and Food and Nutrition Service worked together and published a community food security assessment toolkit, which ordinary citizens can use to conduct community food system assessments. The toolkit provides, "a standardized set of tools for measuring various indicators of community food security, including food resource accessibility, food availability, food affordability, and local agricultural resources."⁶ More recently, the 2008 Farm Bill was passed which provided funding for research and support for community food programs, including the Fresh Fruit and Vegetable Snack Program for school children, Farmer's Market Promotion Program, and a grant program for community food projects.⁷

In order to determine what types of food support programs would be most beneficial to it, a community often first conducts a food security assessment to determine its greatest needs. A community food security assessment is a collaborative and participatory process that systematically examines a broad range of community food issues and assets, so as to encourage and inform change actions to make the community more food secure. It results in a compilation of data including information about a community's existing resources to provide sufficient and nutritionally sound amounts of culturally acceptable foods to all of the community's households.

To further the understanding and applicability of community food security assessments I decided to research the different topics and indicators included in various

⁶ Kantor, Linda. "Community food security programs improve food access." *Food Review*. USDA, Jan. - Apr. 2001. Web. 4 Nov. 2009.

<http://findarticles.com/p/articles/mi_m3765/is_1_24/ai_80517255/?tag=content;col1>.

⁷ Farm to School. "Good News for Local Foods in the Farm Bill." Farm to School. Web. 10 Oct. 2009. <<http://www.farmtoschool.org/policy/FBOutcomes.pdf>>.

community food security assessments. After conducting this research, I was able to create my own community food security assessment framework which could then be applied and used in any community.

I felt it would be most effective to choose a location where food insecurity is a major issue and there are multiple vulnerable populations. Lane County, Oregon fits these criteria. The following statistics provide a very basic background of hunger in Lane County. According to data from the 2001-2003 Census Current Population Survey, 12.9% of Oregon households were considered food insecure without hunger and 4.3% were considered food insecure with hunger. These two values show a higher level of food insecurity in Oregon than in the average values for the United States which were 11% and 3.4% respectively. A higher percentage of Lane County residents live below the poverty line than the national average (14% and 12% respectively). The Latino community is at an even higher risk of food insecurity, since about 27% of Latino residents in Lane County experience poverty. The median household income in Lane County is \$36,942, which is only 88% of the U.S. median household income of \$41,994.⁸ In 2003, over 13% of Lane County residents and 22% of Lane County children used food stamp benefits. According to the Oregon Department of Education, 41% of Lane County school children are enrolled in free and reduced price school meals programs during the school year. Food for Lane County reported that 65% of Lane County food stamp recipients stated that their monthly benefits lasted two weeks or less,

⁸ U.S. Census, 2000

only 5% of those surveyed reported that their benefits lasted all month.⁹ Lane County is also a particularly interesting case study because it is located in the southern Willamette Valley and has fertile farmland; however 75% of farms are devoted to non-food crops.¹⁰

Although no comprehensive assessment has been completed for Lane County, a number of partial community food security assessments have been conducted. These assessments are not considered complete because they do not focus on all aspects of the food system. One assessment only focused on farmland, another on local food-related businesses, and another primarily on food waste management. A food system assessment should include details about all aspects of the food system and the security levels of each aspect. It is important for assessments to include all relevant information so policy makers and local leaders can most efficiently understand the whole picture and more effectively make changes.

In the absence of a complete assessment, a comprehensive analysis of the partial studies can provide an improved understanding of the county's level of food security. My thesis is such an analysis and fulfills that need. It summarizes and analyzes previous food system assessments, allowing local leaders to use their fiscal and social resources in the most effective and efficient way possible to combat hunger and food insecurity in Lane County.

⁹ Lane County Food Coalition Research Committee. *Community Food Security Assessment*. Rep. Eugene: Willamette Farm and Food Coalition, 2005.

¹⁰ Callister, Jacob and Gerber, David and Kim, Jong and Macias del Villar, Sandra. *Farms and Farming in Lane County: Trends, Opportunities, and Challenges*. Rep., Department of Planning Public Policy and Management at the University of Oregon. March 2007

Statement of the Problem Situation

According to the Community Food Security Coalition, “Community food security represents a comprehensive strategy to address many of the ills affecting our society and environment due to an unsustainable and unjust food system.”¹¹ As stated earlier, a community’s food system consists of multiple actors and phases; every single resident in one way or another interacts with their food system everyday. Since a community’s food system can have such a drastic effect on each individual’s quality of life, it is vital for those in planning and public policy positions to assist in the planning of food systems and to understand the needs and desires of all stakeholders.

Food systems affect the design of a community due to the large amount of space taken up by the production, processing, and distribution of food, as well as the disposal of food waste. The land use policies established based on the various aspects of the food system can affect a community’s ecological health, sense of place, economic vitality, and quality of community life. Public health is another aspect which food plays a vital role in. Obesity and hunger are both growing problems in many communities across the world. The Food and Agriculture Organization uses the term “globeisty” to reference the global obesity epidemic. Without daily access to affordable and nutritious food it is impossible for people to stay healthy and eat a balanced diet.

A decrease in the amount of farmland is another issue that planners and activists are and should be concerned with. Farmland is lost every year because of urban and suburban conversion; this threatens rural communities and traditional conservation

¹¹ "Community Food Security Coalition - About CFSC." *Welcome to the Community Food Security Coalition*. Web. 22 Nov. 2009. <http://www.foodsecurity.org/views_cfs_faq.html>.

practices on farmland. Other threats to farmland include high land acquisition costs, limited profitability of small farms, and retirements among farmers. The average age of farmers in the United States was 55, in 1997, the proportion of farmers 55 years of age and older was 61%.¹² Thus the practice of farming appears to be dying out - not enough young people want to become farmers due to all the barriers of owning and running a farm. When a community such as Lane County, which is surrounded by farmland, imports that majority of its food supply from all over the country and world; local producers have a very hard time finding a viable market for their products; this in turn hurts the local economy. If local producers could find local markets, local farms would need to expand to meet the growing demand; this necessary increase in production would require more labor and create jobs for local residents.

Environmental quality is also greatly affected by the food system and it is therefore necessary that planners and policy makers ensure that safe practices are implemented to protect the environment. From the growing of the food to the transportation to the retail site to the disposal of food waste, each of these steps can degrade the quality of water, air, or wildlife habitat in a given area. On average, food in this country travels 1,500 miles before reaching the dinner table. It takes about seven to fifteen fossil fuel calories to produce one food calorie.¹³ In addition, food waste and packaging accounts for 20-30 percent of all solid waste in landfills.¹⁴ A smart and well-

¹² Economic Research Service, USDA. "ERS/USDA Briefing Room - Farm Structure: Questions and Answers." *USDA Economic Research Service - Home Page*. Web. 21 Nov. 2009. <<http://www.ers.usda.gov/Briefing/farmstructure/Questions/aging.htm>>.

¹³ Pollan, Michael. *The Omnivore's Dilemma*. Penguin Press, New York; 2006.

¹⁴ Roberts, Rebecca. "Planning for Community Food Systems." *The Land Use Tracker*. University of Wisconsin, Center for Land Use Education, Winter 2007. 15 Oct. 2009. <http://www.uwsp.edu/cnr/landcenter/tracker/winter2007/food_systems.html>

planned food system can greatly reduce the amount of waste and pollution that occurs within the current globalized food system. Policy makers and activists have the power to increase composting programs and reduce the miles our food travels by promoting local food systems which would result in a more efficient use of energy and land.

In order for planners and activists to create thriving local food systems and meet their community's hunger needs, a process for examining the current food system in place is necessary. It is not uncommon for local groups of professional and concerned citizens to assist policy makers in this process. One common way that this has been done in the past is by conducting food security assessments.

Research Questions

What does a comprehensive food security assessment look like?

Which aspects of food security in Lane County require further research and which issues should be of highest priority to the Lane County Food Advisory Committee?

Purposes of the Study

The aims of this case study of Lane County are— to;

- 1) provide Lane County leaders and residents with a description and analysis of their food system; and
- 2) determine the role and possibilities of food security assessments in community and regional food system planning.

Importance of Study

This study will help policy makers to create policies and programs that will reduce hunger in Lane County and create a more efficient and just food system for future residents. The bulk of this thesis will provide pertinent information to planners, policy makers, designers, and environmental and social justice advocates. It has long been established that the reason there are so many hungry and food insecure people in the world is not because there is not enough food produced, but because our current food system is unjust, inefficient, and unsustainable.¹⁵ By analyzing the most recent reports and food security assessments in Lane County and discovering the most efficient method of assessing a community's food security, I will be able to provide a comprehensive understanding of the county's food security strengths and weaknesses.

The gap analysis includes a list of indicators which will allow me to determine which information is currently known and which indicators are unknown, based on the eleven reports compiled for my analysis. This form of analysis will give me the overall picture of the food system as well as the specific issues we face here in Lane County, and the issues that we still do not know enough about. I hope that this will provide an example plan or set of goals for other organizations and local governments to implement in their own communities. By compiling all of this information into one document and creating a list of highest priorities, Lane County policy makers and advisers will be able to act more efficiently as they work towards reducing hunger. This

¹⁵ Boucher, Douglas, ed. *The paradox of plenty: hunger in a bountiful world*. Institute for Food and Development Policy, 1999.

thesis project will help local policy makers and activists assess what the current level of county food security is, what it should be, and how to get it there.

Scope and Delimitations

My project is a case study of one county in one state. As such, it is not meant to be generalized to a larger population or political unit. Rather, it is intended to contribute to our understanding of what constitutes a “good” and useful food system analysis.

Organization of this Thesis

Chapter 2 is a review of the literature on community food security and community food systems, describing the arguments for and against the importance of local food systems as a response to food insecurity.

Chapter 3 draws on a variety of scholarly and professional policy and planning sources to develop an analytic tool – a matrix – that describes what information should be found in a food security assessment.

In Chapter 4 I apply the matrix to a set of assessments of the Lane County food system. Through this analysis I attempt to create a comprehensive assessment of food security in Lane County as well as an identification of gaps in knowledge that require further research.

In the final chapter I draw conclusions and make recommendations regarding

- 1) high priority issues and opportunities to improve food security in Lane County, and
- 2) using food security assessments as a means of measuring and planning for regional and community food systems and food security.

CHAPTER II. LITERATURE REVIEW

This chapter begins with an overview of the current state of the food system, followed by a look at the benefits of a locally based food system. The discussion of the two food systems provides the context for an explanation of the idea of community food systems and the community food security movement's approach to improving local and regional food systems. The review ends with an examination of community food security assessments which serve as the focal point of this project.

Current State of the Food System

In the past 50 years, food in the United States has become increasingly cheaper for the average consumer. Technological advances in machinery, pesticides and herbicides, a focus on the practice of monoculture, and the consolidation of farms have led to a reduction in the cost of producing food; allowing more Americans to purchase more food. In the period from 1980 through 2000 U.S. per capita food consumption grew from 1800 pounds per year to 2000 pounds per year.¹⁶ The producers and distributors of our nation's food supply have done an incredible job of ensuring that there is plenty of food to meet everyone's needs.

At first glance, this increase in food consumption leads one to believe that our nation's food system has only become more efficient and effective in the last half century, and in fact, it has, for the short term. In the United States from 1909 to 2004,

¹⁶ Jerardo, A. 2002 *The Import Share of US Consumed-Food Continues to Rise*. Washington, DC: United States Department of Agriculture, Economic Research Service.
<http://www.ers.usda.gov/publications/fau/july02/fau6601/fau6601.pdf>

there have been at least 3,500 calories per capita available for consumption, even with a population increase of 202 million.¹⁷ Thus an undersupply of food for the American people has not been a problem for over a century.

The nation's food system encompasses most of the world due to our globalized trading systems and reliance on other nations and communities to provide markets for our cheap crop surpluses. This, along with the availability of cheap transportation has allowed the current food system to succeed in keeping the majority of the American people fed. However, when one looks more deeply into the components of the food system, one can see that leaving 50 million Americans food insecure (over one billion people hungry worldwide) is not the only adverse effect of our food system.¹⁸ The globalized food system, which American companies and trade policies have heavily influenced and controlled, is facilitating and encouraging rapid environmental degradation, social injustice, and unhealthy dietary habits.

More simply put, our current food system is unsustainable; the abundant supply of low-quality, low-cost food that 85% of Americans enjoy cannot last forever.¹⁹ A sustainable community food system is a network of sustainable food production, processing, distribution, consumption and waste management which enhances the environmental, economic, and social health of a particular place. Before one can understand what a sustainable and food secure food system might look like, or how it

¹⁷ USDA/Center for Nutrition Policy and Promotion, Feb. 27, 2009 Economic Research Service. Nutrient Availability Spreadsheets. <http://www.ers.usda.gov/data/foodconsumption/>

¹⁸ Food Research and Action Center. 2009. *Hunger and Food Insecurity in the United States*. Washington, DC: Food Research and Action Center. <http://www.frac.org/html/news/foodsecurity99.html>

¹⁹ Nord, Mark. Et al. 2009. *Household Food Security in the United States, 2008*. Washington, DC: United States Department of Agriculture, Economic Research Service. <http://www.ers.usda.gov/Publications/ERR83/>

can be achieved, it is important to know what is unsustainable about our current food system.

Farm Expansion and Specialization

The food sources we have grown accustomed to in the United States are predominantly composed of very large scale farms. At first sight, it is very economically efficient to devote entire farms to growing one or two crops. Since World War II many farmers have been using pesticides and herbicides made from petroleum to help increase the productivity and survival rate of their crops. When one is dependent on the success of only a few crops it is vital that they survive diseases and pests. As crops and pests develop immunities to pesticides and herbicides stronger chemicals are needed to ensure continued pest control. Growing one crop in an area is an example of monoculture, which is how most large scale produce and grain farmers grow their crops. When the same crop is using the same soil season after season it begins to deplete the nutrients from the soil, particularly nitrogen. Thus large quantities of fertilizers are also needed to ensure the success of one's crops. This dependency cycle is pouring increasing amounts of petroleum based products into the nation's soil and water supply. The current food system's emphasis on monoculture is an "ecological instability and vulnerability."²⁰ Pouring pesticides and herbicides into our soil results in an unhealthy ecological environment. Predominantly growing just a few crops, whose success is dependent on a non-renewable resource (oil), puts the population's food supply at risk. If a major disease or blight, specific to corn, wheat, or soy hit the United

²⁰ Wirzba, Norman. *The Essential Agrarian Reader: the Future of Culture, Community, and the Land*. Lexington: University of Kentucky, 2003. 124

States, a large portion of our nation's farms and exports would be ruined. The practice of repeatedly growing the same crop in the same area depletes our nation's soil and water sources and eliminates the benefits of resistance via diversity. This will cause future generations to be food insecure due to a lack of sufficient and safe resources.

The size and number of farms has drastically changed in the last century; a food system characterized by a large number of small farms has been replaced by one with a small number of large farms. The number of farms in the U.S. has declined from 6.8 million in 1935 to only 1.9 million in 1997.²¹ While the number of farms has decreased, the size of the average farm has increased by 40% since 1960.²² The theory of economies of scale provides an explanation for why it is beneficial for businesses and farms to work on a large scale and consolidate. The larger the scale, the greater the increases in efficiencies of production, and therefore the greater the profit generated for the business and the more cost effective it becomes to buy farm related machinery. This phenomenon has led to the consolidation of farms into the hands of a continuously shrinking number of companies. As companies generate more profit they buy out other farms to further increase their profits resulting in further consolidation of farms.

Although the CEOs and managers of these conglomerates don't own the farmland they profit from, they have the ability to impose their demands on farmers via contracts for cash crops like corn, wheat, soybeans, or chickens and cattle. This has resulted in most farmers being trapped in a system of vertical integration in which one

²¹ USDA Economic Research Service. "Farm Structure: Questions and Answers." Washington, DC: USDA Economic Research Service.
<http://www.ers.usda.gov/briefing/FarmStructure/Questions/farmstruct.htm>.

²² Nestle, Marion. *Food Politics: How the Food Industry Influences Nutrition and Health*. Berkeley: University of California, 2002. Pg. 11

corporation owns all of the stages of production and marketing.²³ Four companies control 84% of the US cereal market.²⁴ Today, the top five firms account for 42% of food retail sales, whereas in 1997, they accounted for only 24% of the market.²⁵ This consolidation of companies and tasks prevents local and regional businesses from succeeding because they are simply too small to compete with large corporations. This common method of production increases the risk of food insecurity by decreasing the level of control of local farmers. Farmers are forced to meet demands and thus grow their crops or animals in the fastest way possible, removing land stewardship practices which leads to environmental pollution and degraded resources.

Control of the supply chain by a few processors and retail chains

Recent and increased adoption of certain economic processes have led to changes in control of processors and retail chains. Previously, processors and retailers were subject to the market's influences, now, those processors and retailers are owned by a small number of companies who control and determine the market. According to Phil Howard, a professor in the Community, Agriculture, Recreation and Resource Studies at Michigan State University, consolidation of farms and the change in control of processors and retail chains is the result of three processes; horizontal integration, vertical integration, and global expansion.

Horizontal integration alludes to the consolidation of ownership and control within one stage of the food system, for one specific commodity. In his article,

²³ Ibid.

²⁴ Krebs, A. V. 1994. "Cargill: Dredging Up the Profits." *The AgBiz Tiller*. 4 March, 1994. <http://www.eal.com/CARP/tiller/archives/backlog.htm>.

²⁵ Hendrickson, M., W. D. Heffernan, P. H. Howard, and J. B. Heffernan. 2001. *Consolidation in Food Retailing and Dairy: Implications for farmers and consumers in a global food system*. Columbia, MO: University of Missouri. <http://www.competitivemarkets.com/library/academic/heffernan.pdf>.

“Consolidation in Food and Agriculture: Implications for Farmers and Consumer.”

Howard explains the extent to which many processing industries are consolidated and what that means for the market. Since the mid-1980s, a research team has been documenting, “the ratio of the market share of the top four firms in a specific industry compared to the total market, called the concentration ratio (CR4).”²⁶ The concentration ratio is important because, “economists suggest that when four firms control 40% of the market, it is no longer competitive. This means that the largest firms will have a disproportionate influence on not just the price of a commodity, but also the quantity, quality and location of production.”⁷

The table below shows the CR4 ratios for various food commodities, illuminating current trends in horizontal integration. All of the listed ratios exceed the 40% threshold, showing a continually increasing trend towards horizontal integration.

Concentration ratios of the top agricultural firms, 2001

Beef packers (Tyson, ConAgra, Cargill, Farmland)	81%
Corn exports (Cargill-Continental Grain, ADM, Zen Noh)	81%
Soybean crushing (ADM, Cargill, Bunge, AGP)	80%
Soybean exports (Cargill-Continental Grain, ADM, Zen Noh)	65%
Flour milling (ADM, ConAgra, Cargill, General Mills)	61%
Terminal grain handling facilities (Cargill, Cenex Harvest States, ADM, General Mills)	60%
Pork packers (Smithfield, Tyson, ConAgra, Cargill)	59%
Broilers (Tyson, Gold Kist, Pilgrim’s Pride, ConAgra)	50%
Pork production (Smithfield, Premium Standard, Seaboard, Triumph)	46%
Turkeys (Hormel, ConAgra, Cargill, Pilgrim’s Pride)	45%
Source: Hendrickson, M. & W.D. Heffernan. “Concentration in Agricultural Markets” ²⁷	

²⁶ Howard, Phil. "Consolidation in Food and Agriculture: Implications for Farmers & Consumers." *The Natural Farmer* [Barre, MA] Spring 2006: 17-20.

²⁷ Hendrickson, M., W. D. Heffernan, P. H. Howard, and J. B. Heffernan. 2001. *Consolidation in Food Retailing and Dairy: Implications for farmers and consumers in a global food system*. Columbia, MO: University of Missouri. <http://www.competitivemarkets.com/library/academic/heffernan.pdf>.

Vertical integration, involves linking firms at more than one stage of the food chain, such as upstream suppliers or downstream buyers. For example, “ConAgra distributes seed, fertilizer and pesticides; owns and operates grain elevators, barges and railroad cars; manufactures animal feed; produces chickens, processes chickens for sale in meat cases; and further processes chickens for frozen dinners.”⁷

Global expansion refers to the attempt of agribusiness firms to increase their market share worldwide. This is most apparent on the retail end of the food chain, as some analysts have predicted there may soon be only 6 global food retailers.⁸ Wal-Mart provides the most common example of the increase in merges in the retail industry. “Before Wal-Mart became a major player in food sales the top 5 retail chains in the US controlled less than a quarter of the market (1997 data). Current estimates suggest that the top 5 now share more than half the market.”²⁸

Consolidation is the result of adopting vertical and horizontal integration and expansion and is occurring both on a national and global scale. This has led to the emergence and increase of food chain clusters which are groups of firms who join together to control every step in the food chain. The poultry industry provides an example of the detrimental effects of the adoption of economic practices of consolidation via horizontal and vertical integration.

Ninety-five percent of chickens produced for meat are grown under production contracts with fewer than 40 companies. The farmer furnishes the land and labor, and is required to invest hundreds of thousands of dollars for buildings and other equipment. The company provides the chicks, feed and medicine and agrees to pay a guaranteed price per pound. In the 1950s, when there were more than a thousand companies, most poultry farmers benefited from such contracts because they were protected from price fluctuations. Now that four vertically integrated firms control 50% of the market, the terms of the contracts are much more favorable to the companies. Their power is so great that some companies have been found to systematically cheat farmers by underestimating the weight of birds, overestimating the weight of feed, or providing poor quality chicks or feed. A farmer who complains is likely to have their contract canceled and be placed on a blacklist. Although most poultry farmers are

²⁸ Howard, Phil. "Consolidation in Food and Agriculture: Implications for Farmers & Consumers." *The Natural Farmer* [Barre, MA] Spring 2006: 17-20.

*making poverty level wages or below, without a contract they can't pay off their mortgages and face foreclosure.*²⁹

Similar trends are occurring in the grain and vegetable sectors as well due to the consolidation and patenting of seeds, pesticides, and herbicides. Price gouging is one way that food conglomerates can exploit their increasing power, for example, even though farm milk prices are the lowest they have been since the 1970s, consumer prices have not declined.

This shift in the control of farms from the farmers to the corporations also represents a change in the priorities of those controlling the farm. Previously, a farmer's livelihood was dependent upon the long-term success and sustainability of his or her farm, the health of the farmer's community and resources necessary to sustain the farm were of primary concern. Due to the consolidation of farms and ownership by large corporations that practice vertical integration, the top priorities are, "to compete effectively with other supply chains and to gain a larger share of the consumer's food dollars,"³⁰ as explained by Frederick Kirschenmann in his essay "The Current State of Agriculture."

Farmer Inequity

Not only are there just a few corporations controlling the majority of the nation's farmers and farmland, but the farmers that are left are struggling to survive. "Market forces have squeezed U.S. farmers to the point that it is extremely difficult to make a living producing food. In 1998 farmers earned an average of only \$7,000 per

²⁹ Ibid.

³⁰ Wirzba, Norman. *The Essential Agrarian Reader: the Future of Culture, Community, and the Land*. Lexington: University of Kentucky, 2003. 104

year from their farming operations.”³¹ Despite doubling productivity, farmers earned less in 2002 than they did in 1969.³² From 1986 to 1999, farmers’ share of the food dollar dropped 36%, while prices went up 3%.³³ Although there may be more money going into the food economy, less and less of the consumer’s dollars are going to the farmer. In 1900, 40% of the population lived on farms; today less than 2% do.³⁴ The increased population in urban areas, and increase in the population in general, is causing further sprawl and development of farmland. Thirty-two percent of the best quality farmland in the US has already been irretrievably lost to development.³⁵

All workers have rights, including farmers and farm workers. They have rights to a decent income, safe working conditions, and a sustainable livelihood. The current system does not pay farmers a living wage, nor is their working environment safe because it involves contact with petro-based chemicals. Farm work often results in exposure to high levels of toxics resulting in higher rates of cancer for farm workers.³⁶ Farmers themselves barely make enough money to survive, thus they are forced to pay their farm workers very low wages. The current system encourages a lack of economic security and profitability for farmers. The idea that commerce and growth in global

³¹ USDA Economic Research Service. 2000. “Farm Income.” *Agricultural Outlook*. Washington, DC: United States Department of Agriculture, Economic Research Service. <http://www.ers.usda.gov/publications/agoutlook/may2000/ao271.pdf>.

³² Meter, Ken and Jon Rosales. 2001. *Finding Food in Farm Country: The Economics of Food and Farming in Southeast Minnesota*. Institute for Social, Economic and Ecological Sustainability, University of Minnesota.

³³ Mamen, Katy. Spring 2007. *Facing Goliath: Challenging the Impacts of Supermarket Consolidation on our Local Economies, Communities, and Food Security*. Policy Brief. The Oakland Institute. (Volume 1, Number 3)

³⁴ Nestle, Marion. *Food Politics: How the Food Industry Influences Nutrition and Health*. Berkeley: University of California, 2002. 11

³⁵ Biodiversity Project. 2000. *Getting on Message: Making the Biodiversity-Sprawl Connection*. Madison, WI: Biodiversity Project. http://www.biodiversityproject.org/mediakit/Sprawl_1B_farmland_loss.pdf

³⁶ Lappé, Anna and Bryant Terry. 2006. *Grub*. Jeremy P. Tarcher/Penguin, New York. 70.

trade can increase the wealth of farmers is only true in some cases. The coffee trade has increased from \$40 billion to \$70 billion over the last few years, but the price coffee growers receive has decreased from \$9 billion to \$5.5 billion.³⁷ Large-scale farms are the norm in the current system, even though, “Small, multi-crop farms yield more per acre, measured in tons, calories, or dollars” than large, industrial farms.³⁸ The requirement of farms to grow bigger in order to compete in the global market has caused farmers to take on more debt than they can handle. For the past 35 years, farmers have annually experienced increased debt.³⁹

Loss of Agriculture of the Middle

Agriculture of the middle refers to a disappearing sector of mid-scale farms/ranches and related agri-food enterprises that are unable to successfully market bulk commodities or sell food directly to consumers. These farms operate in the space between the vertically integrated commodity markets and the direct markets.

What we are calling the agriculture of the middle is, in other words, a market-structure phenomenon. It is not, strictly speaking, a scale phenomenon. Yet, while it is not scale determined, it is scale related. That is, farms of any size may be part of the market that falls between the vertically integrated, commodity markets and the direct markets. But the midsized farms are the most vulnerable in today’s polarized markets, since they are too small to compete in the highly consolidated commodity markets and too large and commoditized to sell in the direct markets.⁴⁰

³⁷ Wirzba, Norman. *The Essential Agrarian Reader: the Future of Culture, Community, and the Land*. Lexington: University of Kentucky, 2003. 27

³⁸ Mckibben, Bill. *Deep Economy*. [S.l.]: Oneworld, 2007. 67

³⁹ Meter, Ken and Jon Rosales. 2001. *Finding Food in Farm Country: The Economics of Food and Farming in Southeast Minnesota*. Institute for Social, Economic and Ecological Sustainability, University of Minnesota.

⁴⁰ Kirschenmann, et al. “Why Worry About the Agriculture of the Middle?” White paper. <http://www.agofthemiddle.org/papers/whitepaper2.pdf> 30 April, 2010.

The loss of the agriculture of the middle is an unfortunate result of the current food system. “It is the mid-sized farms that have a comparative advantage in producing unique, highly differentiated products. Their smaller size enables them to remain flexible

and innovative enough to respond to highly differentiated markets.”⁴¹ Many of these farms are family farms that have been passed down for generations. This inter-generational value of farmland encourages good land stewardship because the farm is a family asset and therefore preserving it is vital to the family’s long-term survival.

Government Subsidies

Governmental subsidies are given to farmers and agribusinesses to supplement their income, manage the supply of agricultural [commodities](#), and influence the cost and supply of such commodities. The U.S. Department of Agriculture distributes between \$10 billion and \$30 billion in cash subsidies to farmers and owners of farmland each year.⁴² More than 90 percent of agriculture subsidies go to farmers of five crops—wheat, corn, soybeans, rice, and cotton.² Over-production of specific commodities impacts land use and crop rotation practices. Choosing to subsidize such a small number of crops, most of which are used as animal fodder, reduces incentive to grow a diverse selection of crops which leads to increased practices of monoculture. Twelve of sixteen billion dollars in farm subsidies went to the top 10% of producers by size in 2003. The bottom two-thirds got nothing.⁴³ Current government subsidies are not dispersed

⁴¹ Kirschenmann, et al. “Why Worry About the Agriculture of the Middle?” White paper. <http://www.agofthemiddle.org/papers/whitepaper2.pdf> 30 April, 2010.

⁴² Edwards, Chris and Dehayen, Tad. “Farm Subsidies at Record Levels As Congress Considers New Farm Bill,” Cato Institute Briefing Paper no. 70, October 18, 2001.

⁴³ Lappé, Anna and Bryant Terry. 2006. Grub. Jeremy P. Tarcher/Penguin, New York. Pg. 24

throughout the country, but in concentrated areas because so few crops are subsidized. This unequal distribution of subsidies and tendency to give subsidies to large agribusinesses makes it harder for small farms to compete and sustain themselves. Especially when government subsidies are most often given to large farms instead of small farms which are often using more sustainable farming practices. Current government agricultural subsidies also reduce food security in the United States. The majority of crops that are subsidized are commodity crops, not food crops. For example, one of the most commonly subsidized crops is corn, which is grown for animal feed, ethanol, and high-fructose corn syrup – not direct human consumption.

Farm expansions and specialization, changes in the control of processors and retail chains, and government subsidies did not necessarily cause each other, however these issues are not acting individually. The concurrent forces of all of these elements create an environment that is very hard for small farmers and farms to survive in independent of the previously mentioned systems and the barriers they have created. The effects of this system have resulted in a vulnerable food supply which is controlled by a profit driven industry as opposed to the producers and consumers and their own financial and dietary needs. This large scale system is creating economic burdens for small scale farmers and largely removing the agriculture of the middle, which are predominantly family run farms. With the deterioration of and increasing burdens to these farming populations, our nation is losing valuable resources. Aside from the loss and degradation of our natural resources, which is described in the next section, we are losing the knowledge and stewardship that small and medium scale farmers have to

offer. Non large scale farmers are integral to a community's food security and to that of the nation as a whole because they have the ability and experience to teach their children how to produce food in an environmentally and socially sustainable way which will ensure that there are farmers and producers for generations to come.

Environmental Impacts

The current food system not only produces negative social impacts but it also has resulted in large-scale environmental degradation, both in terms of a reduction in the quality and quantity of our natural resources. Waste, pollution and environmental degradation signal inefficient use of resources.

Soil degradation

As mentioned earlier in this section, most of our nation's farms practice monoculture (repeatedly growing one crop in the same area). This has resulted in the pouring of continuously increasing amounts of petroleum based products into our valuable and fertile soils. Growing one crop in an area is an example of monoculture, which is how most large scale produce and grain farmers grow their crops. Monoculture is also causing a loss in the generative capacity of soils and is contributing to erosion; coupled with threats of development, this puts our remaining farmland in an endangered position. Industrial agriculture practices have lost approximately half of U.S. topsoil since 1960.⁴⁴ Thus we are losing fertile soil to both urban growth and development and degrading the quality of the soil we currently have to farm on. Unfortunately, the current method of farming and inputs of petroleum based products created a positive

⁴⁴ Kirschenmann, Fred. 2002. *The Economics of Sustainable Agriculture*.

feedback system. Continuing to practice monoculture results in degraded soil which necessitates more pesticides, fertilizers, and herbicides to be dumped into the soil which causes more soil degradation which necessitates more petroleum based inputs. Thus the longer we continue with current farming practices, the more and more soil we degrade, and the less and less farmland we have to grow food on.

Water contamination

Once in the soil, the chemicals used to grow crops leach into the ground water and degrade our nation's water supply. The 1998 National Water Quality Inventory reports that agricultural non-point source pollution is the leading source of water quality impacts to surveyed rivers and lakes and a major contributor to contamination of the ocean.⁴⁵ This fact comes at no surprise when one realizes that chemical fertilizer use tripled and herbicide use quadrupled from 1960 to 1980.⁴⁶ "Insecticide use and the toxicity of insecticides increased ten fold from 1950 to 1990, even as crop loss to insects has doubled."⁴⁷ The Gulf of Mexico's dead zones (water with low oxygen) and subsiding of the fish industry can be tracked up the Mississippi River to the farms in the area which are covered with petroleum based fertilizers.⁴⁸ The industrial agriculture practices are draining aquifers at a rate faster than they recharge.⁴⁹

⁴⁵ United States Environmental Protection Agency, Office of Water. 2000. The Quality of Our Nation's Waters: A Summary of the National Water Quality Inventory: 1998 Report to Congress. Washington, DC: US EPA, Office of Water. <http://www.epa.gov/305b/98report/>

⁴⁶ Wisconsin Food Research Project. Food and Energy: Another Way to Count Calories. UW-Madison Center for Integrated Agricultural Systems.

⁴⁷ Brenner, Loretta. 1991. Dollars and Sense: The Economic Benefits of Reducing Pesticide Use. Journal of Pesticide Reform.

⁴⁸ Rosenberg, Eli. August 23, 2007. Oil and Food Don't Mix. Salon.com.

⁴⁹ Kirschenmann, Fred. 2002. The Economics of Sustainable Agriculture.

Air pollution

The transportation of crops and food all over the world, the result of the current globalized food system is continuously degrading the world's air quality. The transportation of food and crops across the country and globe and the increasing use of pesticides and herbicides not only cause air and ground water pollution, but they are also only made possible by cheap oil. Growing, processing and transporting food contributes to 17% of US fossil fuel consumption.⁵⁰ Oil is a non-renewable resource, once it's gone, it's gone for good. Thus many important aspects of our food system are dependent on something that will be scarce and very expensive in the future and which our continued use of degrades the environment. If current trends continue, our nation's food system is and will continue to be unprepared to change when oil supplies significantly decrease. Without oil, our nation's food system would not survive, leaving the majority of the population food insecure. Oil is used to run large tractors, to create pesticides, to transport food hundreds of miles, and to create the plastic packaging most of our food comes wrapped in. Currently, "Between 7 and 15 fossil fuel calories go into producing one calorie of commoditized food, compared to the pre-industrial yield of 2 calories for every calorie of energy inputted."⁵¹ The growth in the distance food travels corresponds with an increase in food packaging since the packaging must be designed for longer shelf-lives and journeys. In North American cities, food waste and packaging account for 20-30% of landfill waste. The increasing distance of produce from farm to

⁵⁰ Rosenberg, Eli. August 23, 2007. Oil and Food Don't Mix. Salon.com.

⁵¹ Pollan, Michael. 2006. The Omnivore's Dilemma. Penguin Press, New York.

consumer eliminates an ideal source of plant nutrients and soil-building organic matter at one end and creates large amounts of waste disposal on the other.⁵²

Aside from the air pollution caused by the transportation of food and crops, concentrated animal feed operations (CAFOs) also contribute to the surrounding communities. Although there are some air quality guidelines for these operations, some of emissions are not included in the Clean Air Act and therefore are not regulated. Many of the regulations are also not strictly enforced and it is easy for companies to continue to pollute the air and either not be caught, or simply pay the fine and continue to pollute.

Loss of biodiversity

As previously mentioned, the majority of farmland in the United States is only planted with a few crops which allows for the production of crops for very low monetary costs. This makes our crops more competitive in other markets. Thus we use our mass produced crops to displace those of local farmers in the U.S. as well as other nations. 85% of apple varieties and 90% of lettuce varieties have been lost over the last century. One breed of cow is the source of nearly all milk and almost all eggs come from a single breed of hen.⁵³

Health Risks

The food system involves transporting and trading items across the globe and relies on large-scale feedlots for animals. This results in a lack of traceability and increases the potential for widespread disease. An estimated 76 million persons contract

⁵² Halweil, Brian. *Eat Here: Reclaiming Homegrown Pleasures in a Global Supermarket*. New York: W.W. Norton, 2004. 39

⁵³ Lappé, Anna and Bryant Terry. 2006. Grub. Jeremy P. Tarcher/Penguin, New York. 6

food-borne illnesses each year in the United States.⁵⁴ The swine and avian flu epidemics are great examples of humans suffering (some even dying) as a result of certain aspects of the food system. Scientists have warned that keeping many animals in a confined space creates a breeding ground for diseases. Managers of these confined animal spaces know that their animals are susceptible to diseases and feed them antibiotics so that they can be marketed for human consumption. Approximately 25 millions pounds of antibiotics are given each year to livestock to prevent rather than treat their diseases, damaging their natural immune systems.⁵⁵

However, the crowded and unsanitary conditions these animals are kept in can still lead to diseases communicable to humans due to genetic mutations which one cannot prevent with this type of farming practice. Once stable, a virus can spread far and wide by feces, feed, water, or even the clothing of a worker.⁵⁶ It usually takes a long time before a health department is sure if there is an epidemic or not, on top of that, the government must figure out if it was caused by a food item and where that piece of food went from production to consumption. Discerning the location and cause of the virus is an even more arduous process when the product has traveled through multiple countries.

The environment in which our food is produced is not the only dietary related health problem with the current food system; the types of food being promoted and

⁵⁴ Centers for Disease Control and Prevention. "Preliminary FoodNet Data on the Incidence of Foodborne Illnesses—Selected Sites, United States, 2001." *Morbidity and Mortality Weekly Report*. Atlanta, GA: Centers for Disease Control and Prevention. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5115a3.htm>.

⁵⁵ Kurzweil, Jenny. 2005. *Fields That Dream: A Journey to the Roots of Our Food*. Fulcrum Publishing, Golden, Colorado. 56

⁵⁶ Grain, "A Food System that Kills" April 2006. <http://www.grain.org/articles/?id=48>.

consumed are also causing a variety of health issues in the United States. One-third of all cancer deaths are linked to diet, according to the National Cancer Institute.⁵⁷ An estimated 300,000 deaths per year may be attributable to obesity.⁵⁸ Seventy-six million Americans fall ill every year from food-borne illnesses. Salmonella incidents have doubled since the 1970's.⁵⁹ Just seven diet-related health conditions cost the United States \$80 billion annually in medical costs and productivity losses, according to the latest Economic Research Service estimates.⁶⁰ "In corn farming states, blue baby alerts are sent out to let parents know when not to let children drink water because of an excess of nitrates from field run-off. The nitrates compromise the ability of the blood to carry oxygen, producing blue babies."⁶¹

Americans are starting to realize the economic and health costs of our industrially based artificial food system. The food given to children in school, a place of learning, is filled with sugar, corn syrup, and un-fresh vegetables.

Food Insecurity

If the entire population was food secure with this system in place, it might not be such a problem. But this overabundance of food production is not only failing to reach 15% of American citizens, but it also causes increased shelf space competition between companies for the food dollars available from the other 85% of consumers. This

⁵⁷ Doll, R. and R. Peto. 1981. The causes of cancer: Quantitative estimates of avoidable risks of cancer in the United States today. *Journal of the National Cancer Institute*, 66: 1191-1308. http://rex.nci.nih.gov/NCI_Pub_Interface/raterisk/risks73.html.

⁵⁸ Allison, D. B., K. R. Fontaine, J. E. Manson, J. Stevens, and T. B. VanItallie. 1999. Annual deaths attributable to obesity in the United States. *Journal of the American Medical Association*, 282(16): 1530-8.

⁵⁹ Mckibben, Bill. *Deep Economy*. [S.l.]: Oneworld, 2007. 61

⁶⁰ USDA Economic Research Service. "Diet and Health: Overview." Washington, DC: USDA Economic Research Service. <http://www.ers.usda.gov/briefing/DietAndHealth/>.

⁶¹ Pollan, Michael. 2006. *The Omnivore's Dilemma*. Penguin Press, New York. 47

competitive environment of the food industry explains why companies expend so much time and money creating a, “sales-friendly regulatory and political climate, and why they are so defensive about the slightest suggestion that their products might raise health or safety risks.”⁶² The polluter does not pay in industrial agriculture, all of the adverse effects mentioned above are externalities felt by the American people, not by the corporations that promote and ensure the continuation of this unsustainable food system.

*Industrial breeding has actually reduced food security by destroying small farms and the small farmer’s capacity to produce diverse outputs of nutritious crops... While the poor go hungry it is the hunger of the poor that is used to justify the agricultural strategies that deepen their hunger.*⁶³

Our globalized food system is contributing to worldwide hunger rates by, “removing the floor from prices of agricultural commodities under the dual pressure of export subsidies and competition between producing countries.”⁶⁴ Although our food system is currently able to feed the majority of the population, it has resulted in a number of negative externalities that are predominantly felt by low-income populations and farmers. Our food system has stripped farmers of their rights to economic success and has made the poor pay more for less variety of less nutritious food.⁶⁵

Large scale practices of monoculture reduce national food security by increasing the vulnerability of crops. If any major blight or disease spread through a farm large portions of the crops or livestock could be contaminated or wiped out. This has

⁶² Nestle, Marion. *Food Politics: How the Food Industry Influences Nutrition and Health*. Berkeley: University of California, 2002. 13

⁶³ Wirzba, Norman. *The Essential Agrarian Reader: the Future of Culture, Community, and the Land*. Lexington: University of Kentucky, 2003. 136, 137.

⁶⁴ Ibid. 127

⁶⁵ McMillan, Tracy. August 26, 2006. Jicama in the Hood. Salon.com.

occurred in the past with the Irish Potato Famine and in the USA with the Southern Corn Leaf Blight in the 1970s.⁶⁶ The centralization of control over supply chains causes insecurity by creating dependencies on specific companies which further enforce monoculture. In essence, we are placing all of our eggs in one basket, the antithesis of security and stability. Current industrial agricultural practices are causing increasing consumer and worker health and environmental risks. As such, the current state of agriculture is both environmentally and socially vulnerable and insecure, and concurrently decreasing human and environmental health. This system does not allow for communities across the nation to be food secure and an alternative is necessary to ensure national food security. Considering the fact that the United States produces enough food to feed all its residents, and food is human right, it is necessary for us to establish a food system that gives the entire population access to a sufficient supply of culturally acceptable, safe, and nutritious food.

Benefits of a Locally Based Food System

A locally based food system can reduce many of the problems discussed above and increase the livelihood and food security of communities in a sustainable way. There is no exact definition of the word local when discussing food systems; some define local as within the same country, region, state, or county. For the purposes of this project I examine a local food system at the county level. However, many of the benefits are applicable across a statewide or regional food system. It is also important to note that the advantages of a locally based food system which I describe in this section

⁶⁶ Pollock, Bruce. "1970 Corn Disease Shook the Stockmarket - Victory Heirloom Seeds." *Victory Seeds*. Victory Seed Company, 4 May 2010. <http://www.victoryseeds.com/information/corn_panic.html>.

are applicable to any food system that is a lot more locally based than the current system. In order to see the benefits, a community does not need to have a completely local food system, but rather one that is a lot more locally based than the current one. It is also important to recognize that a locally based food system has its own set of vulnerabilities however those are not described in this report.

Reduced Environmental Impact

In terms of environmental problems, local is clearly healthier and safer. The externalities relating to transportation are reduced simply because a lot less transportation is needed if the production, processing, and distributing of food all takes place within one county. For example, “The transcontinental head of lettuce grown in Salinas Valley, CA and shipped nearly 5,000 km to Washington D.C. requires about 36 times as much fossil fuel energy in transport as it provides in food energy when it arrives.”⁶⁷ Locally based food systems not only reduce energy consumption related to transportation but there is also a reduction in energy needed for petroleum based pesticides and fertilizers. If a community is relying on one region for the majority or even half of their food supply, it is likely that they will need numerous farms to grow a variety of crops in order to meet the community’s dietary needs. Minimizing the number of monoculture farms will result in an increase in ecological diversity and reduction of the amount of petroleum based pesticides and fertilizers needed to ensure the success of a farm’s crops. Brian Halweil commented in his book *Eat Here* that, “The climate-changing implications of a long-distance food system are particularly

⁶⁷ Halweil, Brian. *Eat Here: Reclaiming Homegrown Pleasures in a Global Supermarket*. New York: W.W. Norton, 2004. 37

ironic, since farming may be the human endeavor that most depends on a stable climate.”⁶⁸ Not only does a local food system drastically reduce the amount of fossil fuel consumption but it also reduces the amount of over-production by farmers. “Cheap energy encourages farmers to over-produce by driving down prices. Too large of a supply of any single crop is inefficient relative to needs and unsustainable when we are using fossil fuels faster than our current ability to replace them with other energy sources.”⁶⁹ Locally produced food reduces the need for transportation, artificial fertilizers (via reduced monocultures), and fuel for mega-farm equipment.

If sustainably produced, local food production is energy efficient because consumption is limited to running small scale farm equipment and local distribution of food. The connection local farmers feel with place is expressed through stewardship. This means that the local farmers are more likely to respect their farmland and use environmentally friendly practices, “to prevent the gross inefficiencies in natural resource use that are common to industrialized agriculture.”⁷⁰ This type of sustainable farming imitates the recycling of resources inherent in nature which results in more efficient resource consumption. By preserving and protecting farmland, communities are also preserving wildlife and fish habitat. Healthy farmlands are not only vital to growing our food, but they also provide eco-services such as water and air purification, flood control, groundwater recharge, and soil productivity.⁷¹

Increased Profit for Small and Middle Size Farms

⁶⁸ Halweil, Brian. *Eat Here: Reclaiming Homegrown Pleasures in a Global Supermarket*. New York: W.W. Norton, 2004. 37

⁶⁹ Sonntag, Viki. “Why Local Linkages Matter.” Sustainable Seattle. April 2008. 87

⁷⁰ Ibid. 86

⁷¹ Sonntag, Viki. “Why Local Linkages Matter.” Sustainable Seattle. April 2008. 93

Buying locally “creates a strong economic base for regional agriculture by increasing the demand for local products and by returning a greater share of the food dollar to small farmers.”⁷² This increased financial support is nonexistent in the current food system and will allow farmers to nurture the open space, habitat and eco-services that are intrinsically local and necessary for productive farming - eco-services like these cannot be imported.

Economic and Community Benefits

Aside from the reduction in environmental pollution and waste that comes from living off of a locally based food system, there are numerous important benefits to a community’s local economy. When all or most of the food production, processing, distribution, and waste management remains in one community, it increases the number of jobs going to community members. Locally directed spending means more sales for local producers as well as the ability for producers to set their own prices, the creation of a network of “mutually beneficial business relationships,” and increasing consumer loyalty.⁷³

Moreover, an increasing number of local, independent food businesses depend on their relationships with local farmers to provide a unique competitive edge for their business, one that can’t be copied by chain stores and restaurants. And in times of crisis, local food economy businesses can rely on each other for help. In sum, economic security in a local food economy derives from diverse and supportive relationships as well as profit.⁷⁴

⁷² Ibid. 93

⁷³ Ibid. 94

⁷⁴ Sonntag, Viki. “Why Local Linkages Matter.” Sustainable Seattle. April 2008. 99

A study done in the state of Washington by Viki Sonntag for Sustainable Seattle showed that a shift of 20% of food dollars into locally directed spending would result in a nearly half billion dollar annual income increase in King County alone and double that in the Central Puget Sound region. The study also found that “Locally directed spending by consumers more than doubles the number of dollars circulating among businesses in the community.”⁷⁵ According to the study there are numerous reasons why a locally based food economy reduces environmental degradations and increases community well being. The following paragraph most succinctly sums up the study’s findings.

The relevance then of the local food economy to sustainability is that sufficiency and regeneration are made possible through the web of relationships that connect the community’s resources to its needs...Unlike commodity farmers, local farmers are not required to grow crops to a narrow standard to facilitate shipping and handling in volume. Local farmers also nurture consumers’ relationship to the land through the relationships they form with their customers, leading to greater public awareness and commitment to the preservation and regeneration of our natural resources. In return, local buying signals the community’s confidence in its farmers’ stewardship of the land.⁷⁶

In community economies the goal for development is to balance resource use with meeting needs for greater sustainability.

A locally based economy can also reduce the negative externalities that are associated with our current globalized food system. “Local production also puts the responsibility for food safety back into the hands of producers by making them answer directly to their customers. Ultimately, this creates proactive consumers whose increased knowledge is their best protection.”⁷⁷ In the current food system, the

⁷⁵ Ibid. 103

⁷⁶ Ibid. 85, 86.

⁷⁷ Sonntag, Viki. “Why Local Linkages Matter.” Sustainable Seattle. April 2008. 89

consumer is generally very far removed from the rest of the food production process and thus easily remains indifferent to the pollution caused by many of current the large-scale agricultural practices because they are simply ignorant. However, if the consumers live near the chicken farm or waste processing center, they will notice if their water or air is being polluted and it will be easier for them to voice their complaints. The smaller the community or network for people, the more likely they are to care about pleasing their neighbors since they are held accountable for their actions everyday and run the risk of actually seeing the people they might be hurting. In a locally based food economy the farmers are more likely to care about their consumers' needs and desires.

Similarly, if a company is based in one community it is likely to give back to that same community. It will invest in its own community because the company will be able to make use of the benefits. In a situation where all elements of the food system take place in the same county, it is to the advantage of a company to invest in the community's education and well-being because it means increasing the education and skills of the population that may make up that company's future employees. Just as local farmers practice stewardship for their land, locally directed spending builds community by providing for stewardship of the community's resources. Sustainability theory dictates that economic, social, and environmental interests are interrelated. A community needs to achieve sustainability in each of these areas in order for their whole community to be sustainable.

Not knowing where our food comes from or how it gets to us prevents good stewardship of the sources for this food which in turn can affect consumer health. "The food safety principle governing local production for local consumption is to do no harm

to begin with, thereby eliminating harmful effects by eliminating causes. For example, treating farm animals humanely removes the need for massive doses of antibiotics in their feed.” Local food systems also provide fresher produce than the global food system because the distance from producer to consumer is so much shorter. “The freshest food has the highest nutritional value. 3 days after harvest, green beans have lost 60% of Vitamin C and leeks have lost 50% of their carotene.”⁷⁸ A study also showed that consumer health varies by consumer distances to grocery stores. “Rates of obesity go up with an increase in distance to the nearest grocery.”⁷⁹

Food Security

In terms of food security, if a community can grow its own food then it can ensure that all of its residents have access to adequate food to eat and can effectively take responsibility for feeding the hungry. Thus if a natural disaster or attack occurs hunger rates won't increase as quickly. Only those hit by the disaster or attack will face the brunt of the hunger problems, whereas currently every community could potentially be drastically affected by one or two disasters or attacks. A community can better provide for its residents' needs if it has a largely independent food source. “Farmers who learn how to raise crops with less oil will be better off when these fuels become scarce. So will communities that have cultivated local food sources.”⁸⁰ “Low consumer prices based on scale efficiencies are often cited to explain why industrialization of the food economy is for the better. Yet, economies of scale often prove inefficient at the

⁷⁸ Lappé, Anna and Bryant Terry. 2006. *Grub*. Jeremy P. Tarcher/Penguin, New York. 76

⁷⁹ Proscio, Tony. 2006. *Food, Markets, and Healthy Communities*. Report for Local Initiatives Support Corporation. www.lisc.org/content/publications/detail/1388

⁸⁰ Halweil, Brian. *Eat Here: Reclaiming Homegrown Pleasures in a Global Supermarket*. New York: W.W. Norton, 2004. 38

system level because they decrease the system's ability to respond to change."⁸¹ This problem is illustrated with the unavailability of fresh, healthy food in schools, even though the costs of poor nutrition and concerned parents' demand for change.

*Scale efficiencies also invite regulation of a one-size-fits-all kind, undercutting local producers' ability to create viable solutions of their own; thus reducing their economic security. Moreover, scale efficiencies are based on eliminating variety, where variety is the source of increasing system efficiency as an effect of flexibility in resource use.*⁸²

Relationship-based transactions provide for more adaptability in the use of local resources and thus greater self-reliance. Economic security exists when businesses show profits sufficient to their contribution to sustainability.⁸³ Self reliance and economic security, two results of a local food economy are vital for ensuring a community's ability to remain food secure. In short, if the food system were a lot more locally based, communities would be less vulnerable and better suited to meet community needs.

Community Food Systems

Food security, proximity, self-reliance, and sustainability are four aspects of a community food system that help differentiate it from the global food system explained in the previous section. The term food security has traditionally focused on household and individual food needs. Community food security, however, refers to food access on a community level, with an emphasis on the most vulnerable populations, particularly low-income households. Proximity refers to the distances between the various elements of the food system, in a community food system the distances are much shorter than in

⁸¹ Sonntag, Viki. "Why Local Linkages Matter." Sustainable Seattle. April 2008. 96

⁸² Ibid.

⁸³ Ibid. 94

the global food system. The close connection between the different components ends up developing a strong local food system and an increased probability of lasting relationships, between the different stakeholders in the food system – farmers, processors, retailers, consumers, restaurant owners, etc. This type of food system environment significantly increases a community’s self-reliance, or ability to meet its own food needs. Community food systems do not necessarily promote a completely self-sufficient food system, but there are numerous benefits to having some degree of self-sufficiency, and it is an important component of community food security. The final aspect which differentiates our current global food system from a community food system is sustainability. This means ensuring that all components of the food system, from growing the food to distributing it do not compromise the ability of future generations to meet their food needs. “Sustainability includes environmental protection, profitability, ethical treatment of food system workers, and community development... when citizen participation in food system decision-making is enhanced.”⁸⁴

The Community Food Security Approach

The Community Food Security Coalition outlines numerous characteristics that differentiate the community food security approach from the traditional anti-hunger/food/farm project. The first difference highlights the multi-disciplinary approach of the community food security (CFS) methodology. Traditional anti-hunger/farm projects tend to focus on one specific issue such as loss of farm land or hunger. CFS

⁸⁴ Gillespie, A. and Gillespie, G. 2000. *Community Food Systems: Toward a Common Language for Building Productive Partnerships*. Cornell Cooperative Extension.
<http://www.hort.cornell.edu/departments/faculty/eames/foodsys/pdfs/Primer.pdf>

projects, however, examine underlying economic, environmental, and social bases of food system issues, “through community-based planning, coalition-building, multi-faceted programs, and policy/advocacy.” (5) Another difference is based on the scale or location of a project. Traditional programs focus on one major site –garden, market, farm, etc. whereas the CFS approach focuses on communities- towns, cities, and neighborhoods. A third difference explains how CFS projects use community participation to determine food system issues and opportunities and use these to create long-term change. In contrast, traditional anti-hunger projects focus on short-term solutions to very specific problems. Another noteworthy difference between the two approaches is that CFS projects have multiple objectives; they aspire to change producing, processing, and distributing methods, as well as increase access to quality food, economic development, and job creation. Traditional anti-hunger/farm/food projects have many fewer objectives, such as distributing food to low-income households. In essence, traditional models and CFS approaches use different models to create solutions, act according to a different time frame, use different units of analysis, have different goals, numbers, and varieties of participants, and either do or do not engage in policy change.

The following table illustrates some of the differences in methodology between the hunger and food security movements.

	Hunger	Food Security
Model	Treatment, Social Welfare	Prevention, Community Development
Unity of Analysis	Individual / Household	Community

Time Frame	Short term	Long term
Goals	reduce societal costs, individual health, social inequity	Build Community Resources, "Healthy Cities," Individual Empowerment
Conduit System	Emergency Food, Federal Food Programs	Marketplace, Self-Production, Local / Regional Food
Actors	USDA, HHS, Social Service Agencies, Charitable Institutions	Community Organizations, Multi-Sector Partnerships
Agriculture Relationship	Commodities	Support Local Agriculture
Policy	Sustain Food Resources	Community Planning

Source: Community Food Security Coalition⁸⁵

Achieving Community Food Security

The following is a list of the Community Food Security Coalition's goals of a food secure community.⁸⁶

- To support access to food as a basic human right for all
- To eliminate hunger and food insecurity
- To build more local and regional food self-reliance, and thriving local economies
- To create a more democratic food system that gives communities a greater role in deciding how their food is produced and distributed
- To make the food system more equitable and socially just
- To develop environmentally sustainable food production and distribution systems
- To teach young people skills in food production and preparation, and to connect them to other community issues through food
- To preserve and celebrate diverse cultures through food

⁸⁵ Joseph, Hugh and Fisher, Andy. "Community Food Security: A Guide to Concept, Design, and Implementation." Community Food Security Coalition, February 1997. 8

⁸⁶ Ibid. 6

A community that meets the above goals will have the following attributes.

- Stronger connections between consumers and producers
- Distributed food production, reducing local community dependence on food from outside the community
- Diversification of the local food supply, providing local consumers with more diverse food choices
- Recognition of the specific cultural and social food preferences and needs of the community
- Creation of jobs and economic diversity and vibrancy to the local community by using food and agriculture as an economic engine⁸⁷

The current globalized food system lacks the above characteristics on a community level. Therefore it does not allow individual communities, of a geographic scale smaller than the world, to be food secure.

Community Food Security Assessments

A community food security assessment consists of indicators that allow planners and the general public to easily comprehend the current status of their community's food system. The benefits of a community food security assessment are realized both from the final assessment itself as well as from the process of conducting the assessment.

Components of a Food Security Assessment

- A Community Food Assessment examines a range of food issues, and the links between these issues and community goals.
- A Community Food Assessment is a planned and systematic process of gathering information about and analyzing community food issues.
- A Community Food Assessment addresses both needs and assets.

⁸⁷ Seeds of hope: Feeding the world through community-based food systems Salzburg Seminar 389
<http://ufdcweb1.uflib.ufl.edu/ufdc/?m=hd6J&i=40742> Pg. 4

- A Community Food Assessment focuses on a geographically defined place.

According to the Community Food Security Coalition, the following components and basic indicators should be included in ones framework for a community food security assessment.

Access

Where people get their food and why

Adequacy of supermarkets within walking distance (1/2 mile ish)

Barriers to shopping, such as carrying groceries home

Modes of transportation used to get groceries

Percentages of local residents lacking cars, including populations of homebound seniors..

How well the bus lines serve the food shopping needs of the community...

special shuttles that take the elderly shopping?

Selection and price of the food at local supermarkets and other food outlets

How well invested the supermarket is into the community

Hunger and Nutrition

Average community income levels and number of persons in poverty

Number of persons using emergency food system

Number of persons using food stamps, WIC vouchers, and free school meals

Average rent as percentage of income

Rates of diet-related diseases – anemia, hyper-tension, heart disease, obesity,

Local Agriculture

Farmland preservation efforts

Availability of locally grown food in local stores

Number and types of direct marketing outlets for local foods

Health and integrity of local ag – loss of farmland, farm start-ups, use of sustainable production methods... etc

Community Resources

Prevalence of community gardens, home gardens, CSAs, farmers markets,

Community organization and leadership – organizations that help develop and promote the above

Open space that could be used for food production

Policy

Availability of public and private funding for food security efforts

How land use, transportation, community development, environmental and other policies act as barriers or present opportunities to enhance a community's food security

Presence of food policies in the city – evidence of coordination between agencies on food-related issues⁸⁸

The USDA community food security assessment consists of six basic components; a profile of community socioeconomic and demographic characteristics, a profile of community food resources, an assessment of household food security, an assessment of food resource accessibility, an assessment of food availability and affordability, and an assessment of community food production resources. Most community food assessments are participatory and collaborative processes which examine a wide range of food-related issues and resources.

The result of a community food security assessment is a profile of the community's food system which clearly outlines the strengths, weaknesses, opportunities, and threats of a community's food system. More specifically, most assessments include a profile of community socioeconomic and demographic characteristics, the community's food resources and food production, an assessment of household food security, and an assessment of food resource accessibility, availability, and affordability. This information can be useful to local leaders who are responsible for ensuring their citizens' health and security. These assessments are intended to provide a basis for policy decisions which improve local food security as well as create

⁸⁸ Community Food Security Coalition. "Community Food Security Programs: What Do They Look Like?" Community Food Security Coalition. 15 Oct. 2009. <http://www.foodsecurity.org/CFS_projects.pdf>.

the foundations for a long-term monitoring system with a set of indicators to measure improvement.

Process of Food Security Assessments

According to the Community Food Security Coalition, the process of conducting a community food security assessment should contain the following elements:

- A Community Food Assessment is designed to inform and build support for practical actions to enhance community food security.
- A Community Food Assessment involves a broad spectrum of actors from the community.
- A Community Food Assessment emphasizes collaboration among participants.
- A Community Food Assessment requires significant time and resources to plan and implement.⁸⁹

These assessments allow a variety of stakeholders to come together and research their local food system, tactically share their findings, and instigate changes based on their research. Community food security assessments are usually conducted by non-profit organizations, public agencies, coalitions, university departments, individuals, and occasionally private firms. According to the Community Food Security Coalition, community food assessments should include the following strategies:

- *A participatory process that involves diverse stakeholders in planning and implementing the assessment, including community residents.*
- *An emphasis on shared leadership and collaborative decision-making.*
- *Education and empowerment strategies, like training young people in survey methods.*

⁸⁹ Community Food Security Coalition. "Community Food Security Programs: What Do They Look Like?" Community Food Security Coalition. 15 Oct. 2009. <http://www.foodsecurity.org/CFS_projects.pdf>.

- *A focus on meeting the needs of low-income and other marginalized populations.*
- *A broad, food systems perspective that examines a variety of issues and the connections between them.*
- *An emphasis on generating specific recommendations and actions aimed at improving the local food system.⁹⁰*

After reviewing the literature on the current food system and the benefits of a locally based community food system it is clear to me that a change in the current system is necessary to ensure that everyone has the ability and access to obtain safe, culturally acceptable, and nutritionally adequate food. The problems associated with the food system are clearly not due to a lack of food but rather with issues such as distribution, farming methods, changes in control of supply chains, and changes and loss of farmland. The community food security approach appears to be an effective paradigm to begin to reduce food insecurity on a community and national scale.

CHAPTER III. METHODOLOGY

When conducting a community food security assessment it is important to ensure that one is using the best possible framework. This helps to guarantee that the information gathered is comprehensive and provides the most effective level of detail for people to use when trying to put the information into action and make changes. A good framework also helps keep all the information organized and easily accessible to all interested parties. There are numerous models online for people to use. For the purposes of my project I have chosen to create my own framework so that I can ensure

⁹⁰ Community Food Security Coalition. "Community Food Security Programs: What Do They Look Like?" Community Food Security Coalition. 15 Oct. 2009. <http://www.foodsecurity.org/CFS_projects.pdf>.

that areas of high importance to Lane County are fully researched, such as indicators of environmental sustainability, which some food system assessments lack.

Description of Personal Framework Process

In order to assemble my own model I began with the USDA framework and then considered plans from all over the U.S and Canada, including San Francisco, Vancouver, and Toronto. I then began a process of adding and subtracting indicators until I came up with a preliminary list. I then solicited comments from an expert panel of people from different fields to get their opinions and ensure that the framework was both comprehensive and easily understandable. I quickly realized that there is a difference between what one would want to know about a community's food system and what information one can access in reality, in terms of time, money, and data resources. Thus I decided to make two lists, one with the basic and most fundamental components of a food security assessment and another, much more detailed list with further information that would be very helpful to know and provide for a more detailed overview of a food system but contains elements that are not absolutely necessary for making decisions and understanding a community's needs and assets.

Since a community food security assessment is completed in order to help reduce food insecurity in a community, I thought it would be important to ensure that my community food security assessment framework met the goals of the community food security movement; goals to help communities become more food secure. The goals of the movement include a focus on low-income people, the community, building

community self-reliance, and promotion and protection of local agriculture.⁹¹ The movement also takes a holistic approach to the problem of food insecurity, meaning the movement is concerned with all aspects of the food system, not just access or distribution of food. These goals informed me that in my framework, I needed to ensure that there was information about low-income populations, the community as a whole, a way to measure the self-reliance of the community, as well as indicators measuring the protection and promotion of local agriculture. Just as the movement takes a holistic approach, my framework had to also; I wanted to make sure that there would be an indicator to represent each of the different aspects and stakeholders in the food system.

After researching various food security assessments I noticed a theme in the types of indicators different organizations chose to include in their assessments. Indicators which were common throughout included demographic characteristics, socioeconomic characteristics, food production, geographic access to food, hunger and food security data, local agriculture data, nutrition data, inventory of community food resources, food assistance programs, and food and agricultural related policies.

Food security assessments can focus on qualitative or quantitative data, or a combination of both. In general, I would argue in favor of collecting a combination of data types, so as to most comprehensively depict the community. However, for this specific project, I will not physically be going out into the community and collecting information. Thus, it is possible to only look at quantitative data since I will not be using any interviews or surveys in this project and will only be using existing data.

⁹¹ Community Food Security Coalition. "Food Security Begins at Home: Creating Community Food Coalitions in the South." Pg .16 <http://www.ssawg.org/documents/Chapter2-TheCommunityFoodSecurityMovement.pdf>

The USDA Community Food Security Assessment Toolkit was very helpful in determining the type of information I wanted to include in my CFSA framework. I found that a good CFSA should answer the following questions:

- Is household food insecurity a problem within the community, and who is at highest risk?
- How many people use Federal food assistance programs?
- Does the community have the necessary infrastructure to effectively deliver federal food assistance programs at the local level?
- Do all people in the community have reasonable access to retail food outlets?
- Are there sufficient resources available to meet the needs of people who need emergency or supplemental food?
- What types of agricultural resources exist in the community?
- Are locally grown foods available in the community's retail food stores or food service outlets?
- Are there local policies and ordinances that affect the community's food system?
- Does the community have food production, value-added processing, or food distribution resources?
- Do low-income households have the opportunity to participate in community gardens or other food production activities?
- Are there any school-based gardening programs?
- Are locally produced foods sold through local food retailers and restaurants?
- Does the local school district purchase foods from local producers?
- Are locally produced foods used by other service outlets, such as colleges, prisons, and hospitals?
- Are food resources located near low-income neighborhoods?
- Is public and/or private transportation available between the resources and low-income neighborhoods?
- What barriers influence people's use of community food resources?
- Is a variety of food available in retail stores
- Are the available foods affordable to low-income households? ⁹²

My final CFSA framework consisted of 84 indicators. The sections I included were:

- A community profile with both demographic and socioeconomic characteristics

⁹² Community Food Security Coalition. "Food Security Begins at Home: Creating Community Food Coalitions in the South." Pg .77 <http://www.ssawg.org/documents/Chapter5-ConductingCommunityFoodAssessments.pdf>

- A profile of food sources
- A profile of food distribution
- A Profile of community food assistance programs, including federal and locally based
- A profile of transportation or physical accessibility to food
- A profile of food waste and recovery programs
- A profile of community health

The community profile is usually the first set of data obtained in a community food security assessment. It is a section which every food security assessment I viewed contains. This component is important because it provides a context for the food system; without knowing the number of people in the community or the number of households it is hard to determine what numerical values for other indicators truly mean. For example, four farmers' markets in a community of 10,000 people means something very different than four farmers' markets in a community of one million people. The other elements of this section, such as racial or ethnic groups present in the community, the number of homeless, elderly, or residents of various ages are vital to determining which populations are the most vulnerable or might be most harmed or helped by certain food or agricultural related policies.

The profile of food sources provides the framework or skeleton of the food system. The number of food sources and types determines how limited a community may be in reaching self-sufficiency or to what degree the focus of community groups should be on growing local sources of food. For this same reason it is very important to know what types of food sources or processing facilities are present so that residents

can easily identify gaps or oversupplies of certain crops. Farmland assessments are integral to determining the previously mentioned information because without an adequate number of farms or space set aside to grow food one will be severely limited in one's abilities to increase one's local food supply.

If the community's food sources are the skeleton of the food system then the community's food distribution centers are the blood and heart of the community. A food secure community must be able to effectively distribute food to all members of the community in a timely manner. In America for example, where having enough sources of food is not the problem, hunger can most clearly be a result of a lack of adequate food distribution systems. Just as the community profile allows us to see who the vulnerable populations are thus allowing for extra concern to be given to those populations, the food distribution profile allows us to determine if distribution or food supply is a major cause of food insecurity.

The profile of community food assistance programs provides an overview of how well the community is coping with issues out of the system's direct control. A community's leaders cannot ensure that all people make enough money to feed themselves and their families. Thus, it is important for a community to ensure that there are support programs so that those who cannot afford to feed themselves can still have access to food. After all, food is a basic human right. In an ideal community, there wouldn't be any food assistance programs because everyone would have equal access to food. However, because accessibility to food is dependent on one's economic status, and the system in place does not provide everyone with an income, it is important for a community to ensure that there is ample support for those in need.

An important but separate aspect of food distribution is transportation, or the measurement of community members' physical accessibility to food. This section is very important for food security because without good public transit, families and individuals without cars cannot go to the grocery store. Physical access is only one of the barriers to food security, but it is a key component to the whole picture. If the community is very walkable, auto-transit might not be as important. However, if there are elderly people in the community then walking to the grocery store is not an option for everyone.

The average American family throws away 1.28 pounds of food everyday (470lbs per year), while other families are forced to skip meals and go hungry.⁹³ This explains the importance of establishing community food recycling and recovery programs. Food that is thrown away can be recycled, either by being composted to improve soil and grow more food or, if it's still fit for consumption, it can be taken to a food bank or other gleaning program and given to those who need it. Reducing and recycling food waste will not only create compost and generate more food to distribute to those in need (via gleaning programs) but it will also reduce the amount of waste taken to landfills thus helping to reduce environmental pollution.

It is important to measure the health of a community because there are many health conditions related to one's diet, aside from lack of food which causes hunger. Just because each community member is consuming 3,000 calories a day does not mean that they are healthy or getting the food they need. It is also important to be concerned

⁹³ ACF Newsource. "Garbage Galore." *ACF Newsource.org | Today's News*. ACF Newsource, 31 Dec. 2006. Web. 25 May 2010. <http://www.acfnewsource.org/science/garbage_galore.html>.

not only with how many community residents have enough food to eat, but also what type of food residents are eating. A community is not healthy nor is it food secure if its residents do not have access to healthy and nutritious food, part of the definition of a food secure community is that every community member has access to *healthy* and *nutritious* food, not just soda and potato chips.

Data Sources

In order to fill in the matrix for my community food security assessment framework, I found eleven reports about Lane County's food system. Only one of them was a complete food security assessment. The other reports were assessments of farms in Lane County, crop production, the food policy council, and ways to increase sustainable business practices.

- Armstrong, Dan. *Lane County Food Security Assessment*. Lane County Food Policy Council. 2009.
- Callister, Jacob, Gerber, David, Kim, Jong, and Sandra Macias del Villar. *Farms and Farming in Lane County: Trends, Opportunities and Challenges*. Rep. March 2007.
- Campbell, Erin, and Clayton Burrows. *Local Agricultural Capacity and Opportunity in the Food System: A Case Study of Lane County, Oregon*. Washington State University. January 2006.
- Chanay, Jessica D. *Planning Our Food Future: The Role of Food Policy Councils*. Terminal Project. Department of Planning, Public Policy and Management, University of Oregon. 2005.
- Collins, Amy. *A Report on Lane County's Community Food System*. February 2008.
- Darby, Kate S. *Bringing everyone into the foodshed: Improving low-income community members' access to local food in Lane County, Oregon*. M.S. Terminal Project, Environmental Studies Program, University of Oregon. 2005.
- Hong, Sam, Kwongsoo Lee, and Scott Shine. *Assessment of Local Food Production and Markets in Lane County*. Rep. March 2007.

- Maul, Lauren K. *Lane County food system assessment report: A compilation of findings and suggestions for future research*. Willamette Farm and Food Coalition. 2003
- Shinabarger, Tim. *Growing the natural foods industry in Lane County: A report for the Lane County Sustainable Business and Jobs Project*. Program for Watershed and Community Health Institute for a Sustainable Environment, University of Oregon. 2003.
- Smith, Kara C. *The Lane County Food Policy Council And Re-Framing Food Security*. MS Thesis, Department of Political Science, University of Oregon. 2008.
- White, Natalie S., Darby, Kate, McClintock, Nathan, Graham, Sarah, and Pettinelli, Karen. *Community Food Security Assessment*. Report for the Willamette Farm and Food Coalition Research Committee. 2005.

**See appendix for food security assessment framework*

CHAPTER IV. RESEACH FINDINGS AND ANALYSIS

This chapter begins with an individual analysis for each report explaining what information it contained. Then I conduct a gap analysis for each individual report assessing how comprehensive the report was and how relevant it is to my personal food security assessment framework. Next, I use a matrix I created by combining my framework with all of the relevant information found from all of the assessments combined. This is divided by sections of the framework for the sake of easier formatting. I will conclude this section with a summary of the major gaps in information regarding food security in Lane County.

Analysis of Individual Reports

Dan Armstrong, March 2009

The report by Dan Armstrong was completed in March 2009 and was written for the Lane County Food Policy Council. The context of this report is a dire need for food security planning in Lane County. Armstrong claimed that the current food system is environmentally and economically unsustainable, putting the people of Lane County at risk due to their dependence on the global food system. Thus his report serves as a call for a plan for a regional food system to be implemented. Armstrong claimed that prior to 1980 the Willamette Valley was supplying more than half of its residents' dietary needs. In the last twenty five years or so, however, the primary crop grown in the Willamette Valley is grass seed, even though it has the capacity to grow a large variety of crops. This change in the market (which is due to the changing global markets and demands) has resulted in the, "Willamette Valley populace now eating less than five percent locally grown food. When it comes to food security, this is a glaring imbalance." (Armstrong, 5) Armstrong reported that not only are farm practices and farm labor unsustainable, but, "the valley not only doesn't grow its own food, but it doesn't have the capacity to process, store, or distribute more than a small portion of what is consumed—whether it is grown locally or not." (Armstrong, 6)

The root of the problem is that, "all the factors that lead to food security are owned and maintained by forces outside our control and are afloat on a global system deep amid economic recession." (Armstrong, 7) Food security requires some amount of self-reliance, of which Lane County has little to none. Thus Lane County needs to establish

a regional food system. On the bright side, Armstrong stated that the county is in a good position to do this because there is, “plenty of fertile farmland, a reasonably mild maritime climate, and an agricultural history that includes a complete and working food system.” (Armstrong, 8) Armstrong dictated that in order to make the transition into a food secure community, Lane County and those within the Willamette Valley need to:

- Transition Farmland Management to Promote Soil Fertility
- Increase food crop acreage
- Increase Food crop diversity
- Protect Remaining High Value Willamette Valley Farmland
- Grow and Diversify Farm Labor Pool in the Willamette Valley
- Rebuild the Food Processing, Storage, and Distribution Infrastructure
- Promote urban food production
- Implement policy changes (including an increase in food production educational programs)

Amie Collins, 2008

The report by Amie Collins was completed for the Lane County Food Policy Council in 2008. The purpose of this report was to get a glimpse of what the Lane County food system looks like, determine the challenges to Lane County food producers, determine the nutritional challenges to county residents, and to determine some future steps for the food policy council to take.

Collins’ report began with an overview of the county’s farms, food crops produced, types of processing capabilities, and an estimate of how much food is exported outside the county. Collins also referenced a list of alternative food retail channels including farmer’s markets and Consumer Supported Agriculture. The report examined county habits of food consumption and supply. This section of the report concluded with a break down of county food-waste contributions by type of facility. The following is a list from the report of challenges to county agricultural producers:

- Farm startup costs
- Farmland conversion
- Skills required for farming
- Farm maintenance
- Lack of public support
- Lack of documentation
- Lack of citizen understanding about advantages of local food
- No clear system to indicate which products are local
- Local products are not convenient
- Lack of direct marketing opportunities
- Lack of processing facilities

Nutritional obstacles listed in the report were:

- Special needs populations (low-income, elderly, youth)
- Schools lacking nutritious foods
- Obesity
- Over and under accessibility of food

Lauren Maul, 2003

Lauren Maul wrote this report as a research intern for the Lane County Food Coalition in 2003. The majority of the report is devoted to examining issues surrounding the transportation of food. Maul began the report with a very brief look at farmland development both in Lane County and the state of Oregon as a whole. She determined that acres of farmland are decreasing per year and the top four causes are urban growth, rezoning of agricultural land for development, proliferation of nonfarm uses in agricultural zones, and competition from nonfarm uses - urban and suburban infrastructure.

The next section of Maul's report examines the different channels which food can go through (land, air, and water) and the energy consumption related to each form of transport. This section is followed by a look at food origins and 'food miles' for commonly purchased fruits and vegetables. Maul also includes a discussion on the

different recipients of American consumer's food dollars. The majority of her discussions are based on averages for the United States as a whole, there are very few sections devoted to discussing Lane County specifically. However, the author did provide a list of fresh foods grown in Lane County. The report concluded with a brief explanation of the term food system as well as a list of food system stakeholders.

Jessica Chanay, 2005

This project was completed for Chanay's terminal project for her Master of Community and Regional Planning from the University of Oregon. In this report, Chanay describes the emergence of food policy councils as a response to our increasingly disjointed food system. The author explains how food policy councils can improve local food systems through food system planning, innovative projects, and policy development.

The first section of Chanay's project is devoted to an examination of the current food system and human dietary health. Chanay used this discussion to begin to understand and explain hunger and food insecurity in the United States. The majority of her project was comprised of an explanation of the purpose and formation of food policy councils, specifically focusing on the Lane County Food Policy Council. In Chanay's concluding chapter she emphasized the importance of a 'whole systems' approach to hunger via local food system development as a more effective approach to reducing food insecurity and hunger than the traditional 'fix one indicator/aspect of the food system at a time' approach.

Scott Shine, et. Al, 2007

This report by Scott Shine, Sam Hong, Kwongsoo Lee, and Lori Quillen was compiled for a class project for Professor Michael Hibbard's Socio-Economic Development Planning class in the Planning, Public Policy, and Management Department at the University of Oregon which was to be given to the Lane County Food Policy Council. It contains a short overview of the agricultural history of Lane County, current data for the production, and consumption of food. The latter half of the report is devoted to an analysis of the strengths, weaknesses, and opportunities of the local food economy as well as a set of possible goals and indicators for the food policy council to make use of.

The majority of the data for this report is the same data found in the other reports I examined for this project. The report lists common crops grown and the number of farms in the county, the value of the county's biggest exports...etc. The authors of this report identified five key issues for growing the local food economy in Lane County; costs, demand, awareness, facilities, and skills and support. Details and clarifications for these issues can be found on pages fourteen through sixteen of this report. On pages sixteen and seventeen of their report, the authors provide eight goals to help grow the county's local food economy.

Erin Campbell and Clayton Burrows, 2006

This report was written for the Center for Sustaining Agriculture and Natural Resources Small Farms Project at Washington State University. The report begins with a few population and farm statistics for Lane County, including tables with data on food production in the county. This report closely examines the balance of food supply and

demand within the county via a look at commodity imports and exports. The authors spend the majority of this report explaining alternative marketing strategies for small farms, such as farmers' markets, community supported agriculture, on-farm sales, and direct sales from farm to retail.

While many of the other agriculturally focused reports I have analyzed in this section focus on the barriers to small farms and farmers, this report ends very optimistically. The authors reported that, "Lane County is exceptionally positioned to continue being a leading county in Oregon, and indeed the nation, in terms of creating a local food system that supports local agriculture in equal amounts as local agriculture supports it." (Campbell and Burrows, 40) This is perhaps because, "It enjoys fertile soil, long growing seasons, temperate climate patterns, and its lowlands offer prime farming areas." (Campbell and Burrows, 40)

Kate Darby, 2005

This report was prepared for Darby's terminal project for her Master's degree in Environmental Studies from the University of Oregon. Darby began her project by explaining what the term local food system means and what elements comprise it. This was followed by a discussion of the importance of local food systems as opposed to global food systems, specifically in terms of the economy, environment, and society.

Next, Darby gave background information for Lane County, in terms of local food system components, and locally based food assistance programs for the low-income residents. Then, the author provided a survey of local food system promotion

and hunger relief projects throughout the United States. Included in this survey were food banks, CSAs, community gardens, farm to school programs, farming associations, and community action groups. Darby concluded her report by stating that Lane County has already established, “a fairly strong local food system that incorporates low-income access concerns. The community can build upon these efforts by widening publicity of existing programs and increasing program participation.” (Darby, 62) Darby also advised that community members should implement a couple new programs that are specifically focused on connecting low-income residents to local food.

Jacob Callister, et. Al, 2007

The report by Jacob Callister, David Gerber, Jong Kim, and Sandra Macias del Villar was completed for Professor Michael Hibbard’s Socio-Economic Development Planning class in the Planning, Public Policy, and Management Department at the University of Oregon. This report was compiled as part of a project for the Lane County Food Policy Council. After researching relevant literature and interviewing farmers, the authors of this report determined that the Lane County Food Policy Council should strive to meet the following farmers’ needs:

- Implement policies supporting farming
- Assistance in establishing sufficient marketing opportunities for farmers
- Increasing the availability of affordability of farmland
- Ensuring a critical mass of farmers and farm supplies
- Assistance with securing the existence of appropriate scale processing facilities
- Assistance with securing a supportive public and consumer base

This report used similar data to the other reports completed for this same class project. In terms of agricultural trends, the authors observed that, “even though the

amount of farmers has increased over the span of a decade, the size of farms decreased and the amount of sale losses along with farm expenses have increased.” (Callister et. al, 6) This report clearly showed that the majority of farmland in Lane County is used for growing non-food crops (75% in 2004). The authors of this report identified eight barriers to the success of local farms. These barriers include high production costs, oversupply, lack of accurate information, disappearing support services, overbearing taxes, lack of public support, increasing land prices, and lack of skills in economics and marketing. On pages nineteen through twenty-one, the authors list some basic recommendations to help reduce the previously mentioned barriers so that the Lane County food system can effectively support its farmers and farmland.

Kara Smith, 2008

This report was written for Smith’s Master’s thesis from the Political Science Department at the University of Oregon. Similar to Chanay’s project, this report also emphasizes the importance of systems thinking and the food policy council’s ability to bring together numerous food system stakeholders in order to reduce food insecurity and re-localize the food system. Smith’s study, “investigates the political, cultural and historical contexts of Lane County, Oregon's food system and assesses how food security is re-framed at the local level as community food security.”

Throughout this report, Smith examined the history of the community food security movement as a response to increasing food insecurity and hunger brought about by the globalized food system. The food policy council, explained Smith, was a natural and necessary outcome of the community food security movement and plays an integral role in

reducing community food security and revitalizing local food systems. Unlike the other reports, this report looked at the food security movement as a social movement and therefore follows social movement frameworks, including the “core framing tasks;” diagnostic (naming the problem), prognostic (attributing its cause to a source and deciding on what to do about it) and motivational (motivating potential adherents).

Tim Shinabarger, 2003

In 2003, graduate students researchers working with the University of Oregon Program for Watershed and Community Health analyzed the size, scope, and interrelationships of the Natural Foods Industry in Lane County. This report included an overview of local natural food companies (including their employees, payrolls, and sales), as well as a very brief overview of farming in Lane County. The author of this report included a discussion of sustainable business and farming practices used in the county’s natural food industry.

In Lane County, the Natural Foods Industry comprises more than 30 businesses and 30 organic farms. The 15 natural food companies that responded to a survey mailed to Lane County businesses that were believed to fall into the sustainability sector reported at least 334 local employees and annual local payrolls of at least \$8.39 million. The lowest level of annual sales reported was \$76,000; the highest was \$16 million. This information suggests that the natural foods industry makes an important contribution to for local economy... The Eugene Farmers’ Market generated \$1.15 million in total sales for 2001, of which was \$750,000 was produce.

A cluster for the natural foods industry does not exist in the county, therefore, “major opportunities may exist to help stabilize and grow the natural foods industry as a major business cluster in Lane County. The researchers found gaps in the supply chain that

suggest potential business opportunities. The following is a summary of the authors' conclusions.

Constraints on the Sector and on Sustainable Business Practices

- The number of farmers who want to sell produce at the Lane County Farmers' Market site near the Lane County Building has exceeded available space.
- Farmers say there's an oversupply of locally grown organic produce and they need more markets.
- Company officials say local farms can't provide the volume of organic produce on demand that grocery chains and food processors require.
- Start-up businesses in the sector lack business expertise.
- Sustainable business practices such as using renewable energy sources for heat and power often cost more than conventional practices.
- Organic food processors pack their products in packaging materials that are only marginally re-usable.
- Some farm supplies are unavailable in Lane County.
- The availability of organic produce grown in California limits sales of Lane County produce to California markets.

Opportunities for the Sector and For Sustainable Business Practices

- Lane County is a leading organic food producing and processing region, centrally located within its market base and with good access to transportation via rail or Interstate 5.
- The Lane County Farmers' Market is connected to the Saturday Market, an open-air market that also serves as an "incubator facility" for small business start-ups, including those in the natural foods industry.
- The Lane Community College Business Development Center provides small-business and farm-management training to business and farm operators.
- Local residents are knowledgeable about organic food and sustainability.
- Local winter squash and blueberries are of such high quality that California markets buy them.
- One area that may provide opportunities for economic growth is recyclable packaging for local food producers.
- One natural foods company insisted the Beaverton paper facility that makes its boxes must produce boxes from 100 %-post-consumer recycled material. Having identified a market and figured out how to fill it, the paper company now markets the recycled-material boxes to other clients.
- When we asked local natural food company officials what their company's primary waste product is, many said it was packaging material.
- Local sauce makers and dairy product makers use plastic tubs to package their product. The degree to which consumers can recycle these is limited. According

to one company officer, if a local manufacturer could make a more recyclable tub, local natural foods producers would provide a substantial market.

- Another business owner, however, said starting a production process to manufacture plastic containers would present substantial difficulties. It would cost several million dollars to build an injection-molding facility that could make tubs, print labels on them, and deliver the tubs in sterile condition (ready to pack) to the natural foods industry. An officer with BRING Recycling in Lane County said it's a lot of expense and effort to recycle what is already a low-grade quality of plastic. Bio-based plastics derivation may provide a possible option to pursue.
- Several company owners and officers said city or county government needs to provide tax incentives to small companies that are already here to start hiring people instead of giving tax incentives to big companies that leave when the incentives expire.

Overall the research suggests that more business education, training, and networking within the local natural foods sector would be beneficial.

Willamette Farm and Food Coalition, 2005

This report was conducted by a research team for the Willamette Farm and Food Coalition. It began with an explanation of what a community food security assessment is and why they are important to complete. This food security assessment followed the format of the USDA framework; therefore it included the following components:

- Profile of community socioeconomic and demographic characteristics
- Profile of community food resources and community food production
- Assessment of household food security
- Assessment of food resource accessibility, availability, and affordability

In addition to the topics listed in the USDA framework, this report also included:

- Assessment of local Ecological Factors
- Profile of Waste and Recycling

The statistics included in the first profile were a racial breakdown of the population, unemployment rates, median household incomes, and poverty status. The second

section included a table of the different food processing facilities and licensed food retailers in Lane County. The report also included a list of direct marketing locations and options for residents such as farmer's markets, community gardens, and CSAs. This section also included information on federal food assistance programs present in the county such as Food Stamps, WIC, and the National School Lunch Program, as well as some statistics from FOOD for Lane County. The next section specifically focused on food security in Lane County, including basic statistics and survey results. In the Food accessibility section of the assessment, the report used a project completed by Diane Smith from the University of Oregon who measured geographic and economic food accessibility based on the Thrifty Food Plan in Eugene, Springfield, Oakridge, and Florence. For the ecological assessment, the authors examined the local watershed, climate, soil, and provided a list of flora, and fauna. In this section there was a very small segment on farmland in the county. The food waste section of the report examined food waste at the household, business, and institutional levels. The conclusion of the report included a summary of each section and suggestions for further research.

Gap Analysis of Individual Reports

Kate Darby, Analysis

“Bringing Everyone into the Foodshed: Improving Low-Income Community Member’s Access to Local Food in Lane County, OR” written by Kate Darby contained 14 out of 84 indicators in the framework. The demographic section was nearly complete and the socioeconomic section was about a quarter of the way done. The only information listed in the food resources section was a partial list of the number and location of community

gardens, CSAs, and farmer's markets in Lane County, and the percentage of farms in Lane County that grow food crops. She listed a few statistics about participation in the WIC, Food Stamp, and National School Lunch programs, as well as a list of the number of food rescue programs in the county. Darby did not have any information in her report that could be placed in the transportation, food disposal and recovery, or community health section.

Lauren Maul, Analysis

Maul's report had a lot of useful information, but most of it pertained to agriculture and food distribution throughout the United States and not specifically to Lane County. Thus none of her information fit into the framework. She did however, provide a list of crops grown in Lane County which is not one of the indicators but is useful to know.

Armstrong, Analysis

While Armstrong's report did discuss issues relevant to the food security of Lane County, his report did not emphasize similar enough information to the framework I created; almost none of the information in his report fit into the indicators within my framework.

Shinabarger, Analysis

Shinabarger's report focused primarily on sustainable business practices and strategies for developing a local food economy. This report contained 3 out of the 17 indicators in the profile of food sources section of the framework.

Kara Smith, Analysis

The main focus of Smith's project was the history of the food security movement in Oregon. Her report contained information for only two out of total eighty-four indicators in the framework. Both of these indicators were in the Emergency Food Assistance section of the framework. One piece of useful information from her project which did not fit into the framework may be a list of stakeholders in the food system which she provided on page 80. On page 75 Smith provided a list of Lane County food system issues, divided into political and economic barriers.

Willamette Farm and Food Coalition, Analysis

The WFFC's food system assessment was the most useful in completing my framework. Their report provided me with information for 25 indicators, almost one third of the entire framework. The report provided information for most of the demographic and about half of the socioeconomic profile of the community of Lane County. Their report also had information about school gardens, average farm sizes, and the types and numbers of food processors in the county. The report provided basic information on then number of food retailers in Lane County as well as the number of authorized food stamp retailers. Different from the other reports I read, this one clearly focused on food security. The report listed vulnerable communities, as well as a survey describing how long the average monthly food stamps lasted. This was also the only report with information about food waste and disposal.

Scott Shine, Analysis

Scott Shine's project had information about farmland and barriers to increasing local production. His report contained information for six out of the total eighty-four indicators, most of his data was not applicable to the indicators in the framework.

Callister, Analysis

Callister's report was not very helpful in terms of filling out the framework. His report only yielded information for two out of the eighty-four indicators. The project did have some useful charts and graphs regarding farmland lost and crop conversion in Lane County over the last 50 years, but the focus was not on the same information I put in my community food security framework.

Campbell, Analysis

Campbell's report yielded similar results to Callister's project. It only contained information for two indicators from the framework but did have a lot of useful information in terms of agricultural output in Lane County. The focus of the report was the production capacity of Lane County, thus many of the charts represented various supply and demand scenarios.

Collins, Analysis

Collin's and Callister's projects were very similar in terms of their focus on farmland. This report briefly discussed information related to food sources, such as available

farmland and crops grown in Lane County, however it did not yield any information that I did not already have. The paper provided information about different forms of local food distribution (farmer's markets, CSAs...etc) but did not provide any detailed facts about the status of those distribution centers in Lane County. This report also provided some information on food waste in the Eugene-Springfield area, in terms of average waste generation from various types of facilities. The rest of the report explained challenges to growing the local food economy.

Chanay Analysis

While Chanay's report was very informative in terms of problems with the current food system and the formation of the Lane County Food Policy Council, the few statistics she did provide were not pertinent to Lane County, but rather the United States as a whole. Thus her report did not contain information for any of the indicators in my framework.

Full Gap Analysis of Lane County Food Security

After analyzing each food security assessment individually, in terms of how much it contributed to the overall framework, I looked at the situation as a whole. The following paragraphs and charts display which indicators are known (marked with an X) and are unknown (left blank). A row with the term 'partial' denotes that some information on this indicator was found in the reports, but not information for the entire county.

The first section of the framework is the community profile. Out of the sixteen indicators in this section, seven are known, leaving ten gaps. All of the indicators in the

demographic section were known except for citizenship, age, and people per household. In the socioeconomic section, the following categories were left blank; Total number of persons by zip code, number of persons living below the poverty line by zip code, percentage of single parent household, percentage of households spending more than 30% of their income on shelter, and the number of homeless. There exists a basic community profile for Lane County; however the more detailed indicators are left blank. Fortunately, I think that at least four or five of the indicators left blank can be completed after obtaining this information from the census.

COMMUNITY CHARACTERISTICS	All Reports Combined
Demographic Characteristics	
Total Population (Number)	X
Age	
Race/Ethnicity	X
Citizenship	
Total Households	X
People/Household	
Socio-economic Characteristics	
Employment Status	X
Income	X
Poverty Status	X
Total number of persons by ZIP Code	
Number of persons living below the poverty line by ZIP Code	Partial
Number of total occupied housing units by ZIP Code	
Median annual family income	X
Percentage of single parent households	
Percentage of Households spending more than 30% of their income on shelter	
Number of homeless	

The next section is the profile of the community's food resources. Out of the total 17 indicators in this section, 12 were known. The indicators from this section that did not get filled out were; a list or number of farms that are certified (other than organic), the average age of farmers, the contribution of agriculture to the region's economy, and Existence of local policies or regulations around food, agriculture, and land usage. This information can likely be quite easily obtained from surveys and discussions with the local food policy council. This is the most complete section within the created framework.

FOOD SOURCES	All Reports Combined
Number and location of community gardens (in relationship to low-income or high-density Neighborhoods)	X
Number and location of school-based gardens	X
Number and location of community-supported agriculture programs, waiting lists	X
Number and location of farms	X
Number and location of dairies and fisheries	X
Number and location of food manufacturers and distributors	X
Total area of farms (acres)	X
Average farm size	X
Top five crops (hectares)	X
Percentage of Organic farms	X
List of other types of certification systems & number of corresponding farms (Food Alliance, Salmon-Safe...etc.)	
Extent of producers' debt	X
Average age of farmers	
Contribution of agriculture to the region's Economy	Partial
Percentage of Farms producing Food crops	X
Existence of local policies or regulations around food, agriculture, and land usage	
Measures of food imports/exports to and from the city	Partial

The third section is a profile of the status of food distribution in Lane County. Four out of the eleven indicators in this section were known. Partial lists of a few of the unfilled indicators were found throughout the assessments, but nothing complete for the entire county. Information is needed on the number of wholesalers, locally grown produce that is most widely available, the number of community kitchens, location of all supermarkets and convenience stores, number of people who use charitable food resources on a monthly basis, percent of household income that is spent on food, and existence of food buying cooperatives.

FOOD DISTRIBUTION	All Reports Combined
Availability of authorized food stamp retailers	X
Number, type, and location of retail food stores	X
Number of Wholesalers	
Number of Farmer's markets	X
Locally-grown fruits and vegetables that are most widely available	
Number of community Kitchens	
Location of supermarkets and convenience stores	
Number of people who use charitable food resources on a monthly basis	Partial
Percent of household income that is spent on food	
Existence of food buying cooperatives or community-owned food retail outlets	
Percent of eligible people enrolled in food assistance programs	X

The next section is a profile of community food assistance programs. Out of the 25 indicators in this section, 8 were known. The only information about federal food assistance programs found in the assessments were a few statistics about the WIC Food Stamp, and National School Lunch programs, as well as the number of food rescue

programs and participation in the Summer Food Service program. There is information about how many pounds of food FOOD for Lane County has distributed, but the reports did not dictate how many recipients received it throughout the year.

COMMUNITY FOOD ASSISTANCE PROGRAMS	All Reports Combined
Federal Food Assistance Programs—Number and Location	
Number and location of Food Stamp Program application sites	
Number and location of WIC clinics	X
Number and location of schools with National School Lunch Program	
Number and location of schools with School Breakfast Program	
Number and location of Child and Adult Care Food Program (CACFP) providers	
Number and location of Summer Food Service Program sites	X
Number and location of TEFAP and CSFP distribution sites	
Number and location of WIC Farmers' Market Nutrition Program sites	X
Number and location of elderly nutrition programs	
Federal Food Assistance Programs—Participation	
Participation in Food Stamp Program	X
Participation in WIC Program	X
Participation in National School Lunch Program	X
Participation in School Breakfast Program	
Participation in CACFP	
Participation in Summer Food Service Program	
Participation in TEFAP distribution	
Participation in WIC Farmers' Market Nutrition Program	
Participation in Commodity Supplemental Food Program (CSFP)	
Participation in Meals On Wheels Program	

Emergency Food Assistance Providers	
Number, location, participation in, and times of operation of food banks, soup kitchens	X
Number, location, participation in and times of operation of food pantries	
Number, location, participation in and times of operation of emergency kitchens	
Shelters w/ meals for residents	
Mobile Kitchens	
Number of Food Rescue Programs	X

The next section in the framework is transportation. There are five indicators in the transportation section of the framework, and none are filled in. A partial list of number of vehicles per zip code was found in Willamette Farm and Food Coalition's assessment, but it only listed data for five zip codes, not the entire county.

TRANSPORTATION	All reports Combined
Number of vehicles per occupied housing unit by ZIP	Partial
Number, type, routes, frequency, and per ride cost of public transportation resources (buses, trains, subways)	
Number, type, routes, frequency, and per ride cost of para-transit resources (store shuttles, taxis, etc.)	
Transportation available for food shopping	
Walkability	

The second to last section in the framework is food disposal and recovery. There are four indicators in this section, three of which were contained in the reports viewed for this analysis.

FOOD DISPOSAL AND RECOVERY	All Reports Combined
Specific Waste disposal, recycling, composting rates	X
Percentage of food surplus that is donated	
Number of local gleaning programs	X
Amount of food collected from local/regional gleaning programs	X

The last section in the framework was community health, in terms of physical health conditions as well as the existence of policies or projects that help maintain local control of food and farmland. None of the assessments discussed community health to the degree of detail of the indicators in the assessment. There was some information in Collins' report, but most of it did not apply to the county level.

COMMUNITY HEALTH	All Reports Combined
Health/nutrition outreach/referral services	
Food / nutrition related projects	
Prevalence of dietary-related disease	
Rates of obesity/overweight	Partial
Rates of Low birth weight / infant mortality rate	X
Existence and nature of local policies around food, agriculture, and land usage.	

The largest gaps in knowledge of Lane County's food system are in the status of community members' physical access to food, community health, success of federal food assistance programs, and clear knowledge of the community's most vulnerable populations-as found by the community's demographic and socioeconomic indicators.

CHAPTER V. CONCLUSION

This chapter is a summary of my research on food security assessments. I explain what I found to be the necessary components of a community food security assessment as well as a summary of information that is already known about Lane County's food system as pertinent to the food security assessment I created. I then give suggestions for further research as well as an explanation of what I believe should be the Lane County Food Advisory Committee's and other interested parties' top priorities including both action items and policy ideas which should be implemented to improve the county's food security.

Food Security Assessments as Tools

The food security assessment model is a very useful tool for determining the status of a community's food system and its level of food security. One of the strengths of community food assessments (CFA) is that the process itself builds community and creates and strengthens a network of connections that are vital for ensuring a successful transition into a food secure community. CFAs are by nature often viewed as optimistic and idealistic documents because they are solution-oriented and emphasize the assets of a community's food system while clearly outlining the problems. Food security assessments are a highly important tool in helping a community to create action items and set goals to simultaneously reduce its food insecurity and improve its environmental sustainability. Not only does the clear presentation of information assist in creating actions and goals, but the process itself involves a variety of stakeholders and experts from a range of fields thus bringing them

into the process and creating alliances so that once the information is found, there is already a well-suited coalition in place to make a plan and take action. Some of these involved experts would likely include members from organizations focused on community planning, public health, environmental assessments, and social work. The type of work that comes from a food security assessment improves the sustainability of the community because it promotes community and environmental stewardship through long-term planning.

After researching numerous assessments I have concluded that a comprehensive food security assessment should include the following components.

- A community profile with both demographic and socioeconomic characteristics
- A profile of food sources
- A profile of food distribution
- A Profile of community food assistance programs, including federal and locally based
- A profile of transportation or physical accessibility to food
- A profile of food waste and recovery programs
- A profile of community health

It is up to the creators of the assessment to decide how much detail they want to include, but the above components are necessary to obtaining the overall situation of a community's food system and its residents' food security. The first two components provide readers with a clear and basic understanding of the demographic and socioeconomic composition of the community as well as an outline of the community's

sources of food; specifically including facts about the status of local farmland. These first two sections provide an essential background for contextualizing the other five components. The middle three components describe the strengths and/or weaknesses of a community's ability to provide all of its members with economic and geographic access to food. The last two components provide readers or interested parties with a sense of the efficiency and effectiveness of the community's food system. If a community is healthy, then its likely that the food available to community members is adequate in quantity and nutrition content. If a community has little food waste to begin with, or recycles its food waste than the community's food system is efficient and has fewer environmental degradations than other communities who have large amounts of food waste and send all of it to landfills.

Summary of Findings and Suggestions for Further Research

The following is a summary of my findings for Lane County, including gaps in knowledge for each component of my food security assessment framework.

Community Characteristics

Although basic information is known, further demographic and socio-economic information are needed regarding specific neighborhoods or zip codes in Lane County so that it is easier for those interested to determine exactly which locations are at highest risk of food insecurity. It would also be valuable to determine the number of homeless in Lane County so that this number can be monitored in the future and further actions can be taken to reduce it with the option of measuring the success of various

actions or programs implemented. The information for this section should also be updated with information from the most recent census.

Food Sources

The number of farms in Lane County has increased since 1992. However most of these farms are producing less food than has been previously produced in the area. Farmland is being converted into industrial, commercial, and residential areas as well as more economically productive non-food crops. There is a large amount of fertile farmland throughout the county; however the vast majority of it is devoted to such non-food crops as grass seed, Christmas trees, and ornamentals (nursery products), which provide a larger source of income to the surrounding communities. Members of the Southern Willamette Bean and Grain Project have researched and are creating plans to determine how to convert some of the county's commodity crop production into food crop production. The amount of sale losses and farm expenses has increased in the past two decades, making it more challenging for small, local farmers to stay afloat. The county also has a number of successful organic food stores and farmers markets, however many of these are concentrated in certain areas and are not accessible to most residents.

Food Distribution

Although the food distribution section could not be completely filled in with the information available from the reports, the majority of the remaining information could be rather easily obtained via Google maps. This step should be completed in the near

future so that these indicators can continue to be measured in the future so that progress can be tracked.

Community food assistance programs, including federal and locally based

A lot of research still needs to be done in order to complete this section and attain numbers for these indicators. There are some community projects that are working to find out some of this missing information. This section is very important to understanding a community's food security because the most vulnerable populations of a community are likely the most dependent on these resources for their food supply. This is important because one way to determine whether or not a community is food secure is to look at how well (or poorly) the community provides for its most vulnerable members. If the number of participants in a locally or federally based food assistance program is unknown, in the future there will be no way to measure whether this number has increased or decreased. It is important to know how many of the eligible participants are indeed participating, without this information it is impossible to determine the success of these programs and the barriers to their continued success. For example, people need to be able to differentiate between problems of lack of public access to information about these assistance programs and lack of resources or financial support for these types of programs. In 2006, about 76% of those eligible participated in the Food Stamp program, further research should be completed to determine why nearly a quarter of those eligible are not participating in the Food Stamp program, this will help to reduce community food insecurity by increasing vulnerable populations' access to food.

Transportation or physical accessibility to food

Further research is needed in determining whether or not communities in Lane County have physical access to food. Community projects through the Lane County Food Policy Council have recently been implemented to research physical accessibility to food throughout Eugene.

Food waste and recovery

There are 4 gleaning programs in Lane County, and they are dispersed between only three communities. In 2002-2003, they recovered over 42 tons of food, however judging by the fact that 35,360 tons of Lane County's total waste sent to landfills is food waste, there is probably much expansion to be done with the county's gleaning and composting programs.

Community Health

Although Lane County's infant mortality rate is just barely higher than the national average (9.5% and 9.3% respectively), it is quite a bit higher than the infant mortality rate of Oregon as a whole (7.9%). This is an important indicator in terms of measuring a community's health because it reflects the health of a newborn child as well as that of the mother. Further research is needed to provide numbers for the remaining community health indicators. Numerous community health projects are currently in progress so there is a good chance that this information is already being researched, especially for the first, second, and last indicators in this section. Other Specific measures and goals to help improve community health should be established and implemented in the near future. The Community and Schools Together project

facilitated by the Oregon Research Institute and other community organizations is researching a number of the issues in missing from this assessment with the goal of reducing the community's growing obesity problem.

Recommendations

There are two types of recommendations I advise the Lane County Food Advisory Committee and other interested parties to follow. The first is to do a full comprehensive food security assessment, filling in and following the framework I created. Many of the reports used in this thesis were conducted a few years ago and there is likely more up-to-date data that should be analyzed and added to complete the food security assessment. The above section provides a starting point and explanation of what further research is needed in order to complete data collection for each section. Completing a comprehensive community food security assessment will give the advisory committee the most up to date and comprehensive view of the current status of Lane County's food security and enable them to easily determine exactly what types of issues are the biggest barriers to countywide food security. In particular, the county's Food Advisory Committee, or other interested parties should conduct further research regarding the level of participation and success of local and federal food assistance programs throughout the entire county.

The second set of recommendations are planning, programming, and policy ideas that can help increase the county's food security, based on the data I found in the assessments I analyzed. These recommendations are grouped according to the community food security assessment sections which I think should be prioritized.

Fulfilling the following recommendations would greatly improve the food security of Lane County.

Food Sources and Food Distribution

Much is already known regarding Lane County's food sources, with information available from previously completed reports and projects. The next step would be to establish and enforce policies to reduce the current trend which shows a reduction in county farmland.

A program or coalition should be established that is specifically designated with the task of reducing current barriers to small farmers. Actions should be taken to help reduce these barriers by implementing financial support programs for farms and encouraging more relationships between grocery stores or restaurants and local farms to provide more local farms with local markets for their goods. An incentive based taxing system should be implemented to encourage more of these relationships to occur. This type of programming and policy making would help local farmers increase their production via increased local markets. This will help to ensure that the county's farms will succeed in the future and be more and more able to provide food crops for the local community. As stated earlier in this report, the major barriers that need to be overcome are high production costs, oversupply of certain crops, lack of sufficient support services for farmers, taxes, and land prices.

Increased promotion of and participation in farmer's markets would reduce farmers' problems associated with middlemen. The number of days farmer's market are open a week and throughout the year should be increased. This will allow more farmers

to participate in farmer's markets, and increase the demand for local food, helping to reduce the over supply problems, as mentioned in the report by Callister et al. Further support of farm to cafeteria projects in all institutions would also help to increase the number of local markets for local products. Another task that should be completed is the identification of the county's top level farmland accompanied by research and implementation of strategies to ensure that those areas will be preserved and reserved for food production. Further tasks should include developing and promoting incentives for food businesses that use locally grown or produced products.

The report by Shine et al. offers a number of specific indicators and goals which would be useful in increasing the county's food security via reducing farm and food production related barriers. There are no specific policies mentioned in this report but after measuring the indicators mentioned in the report a group should be formed or designated with the task of implementing policies to reach the food security goals. The most pressing goals mentioned in this report are to increase growth in the local food processing and distribution sectors, increase public education and support for the value an importance of consuming locally produced food, increase accessibility to local foods in both conventional and alternative markets, increase the share of the market captured by local businesses.

In terms of increasing the county's food security it would be beneficial to increase food crop acreage without reducing the county's agricultural income. Further research should dictate if it is possible to bring in the same amount of profit (or more) through converting non-food crop farms to food crop farms and simultaneously increasing the market for these new food crops.

Community Food Assistance Programs (locally and federally based)

The committee, along with other relevant parties, such as Food for Lane County, should establish a plan to increase the number of food stamp participants to 100% of those who are eligible and want to be a part of the program. Thus the committee must research all barriers to participation and establish comprehensive way to reduce and eventually eliminate them. Lack of information or assistance with filling out the necessary paperwork is one barrier that should be on the committee's list. Measuring this program's success would require the distribution of surveys to ensure that all those who want to participate are doing so. Two specific populations that are very vulnerable to food insecurity is the county's low-income elderly and Latino communities. In 2005 forty-three percent of low-income seniors in just Eugene ran out of food at some point during the month.

Community Health

Multiple reports analyzed for this project noted that lack of convenience and knowledge are barriers to increased public consumption of local products. Creating a locally-grown label and marketing campaign would make it much easier for consumers to purchase local products and/or at least be aware of their option to. A labeling campaign would also help to increase the local food identity and culture which is another goal mentioned in the Shine et al. report. To avoid confusion about how the term local is being defined, the label should be restricted to "grown in Lane County" or "grown in the Willamette Valley."

Priorities

The top priorities for reducing Lane County's food insecurity should be to reduce challenges and weaknesses in the food production and distribution sectors, and food assistance programs. Efforts to reduce these problems are not likely to be very successful until a comprehensive community food security is completed for the county. In order to measure the success of any program or policy it is vital to have current data so that it can be compared to future data after said program or policy is introduced. My research shows that the community food security assessment forms a perfect and necessary backdrop for all community food system planning because it provides a comprehensive overview or picture of the community's food system as well as a list of indicators ready to be measured and compared with future assessments after actions and changes have been made.

Reducing a community's food insecurity reduces community members' risks of hunger, starvation, and malnutrition. If people do not have to worry about where they are going to get their next meal or whether or not they should skip a meal so that their children can eat, they will be more productive at work and will have more time to focus on other needs and desires. A community based food system increases consumer knowledge of the effects of their food-related actions and demands community respect and development from businesses and farmers due to the level of accountability. This type of food system does not only improve the lives of individuals in the community, but it also improves the community's productivity, economy, and overall health. If done sustainably and efficiently it also reduces environmental pollution on a community and individual level. If the actions and goals come into fruition on a national and eventually

global scale, society will rid itself of the majority of the environmental pollution and social inequity that is a direct result of the current food system. Therefore, the actions and goals prescribed by community food security movement are necessary for increasing the nation's ability to protect and ensure the health of its citizens and more efficiently use our natural resources.

APENDIX

Below is the community food security assessment framework I developed and used in my analyses of the current food system reports. I used the A list for my project; the B list is a more detailed assessment that others may want to complete.

A List

POPULATION PROFILE

Demographic Characteristics

Total Population (Number)

Age

Race/Ethnicity

Citizenship

Total Households

People/Household

Socioeconomic Characteristics

Employment Status

Income

Poverty Status

Total number of persons by ZIP Code

Number of persons living below the poverty line by ZIP Code

Number of total occupied housing units by ZIP Code

Median annual family income

- Percentage of single parent households
- Percentage of Households spending more than 30% of their income on shelter
- Number of homeless

PROFILE OF FOOD SOURCES

Number and location of community gardens (in relationship to low-income or high-density Neighborhoods)

Number and location of school-based gardens

Number and location of community-supported agriculture programs, waiting lists

Number and location of farms

Number and location of dairies and fisheries

Number and location of food manufacturers and distributors

Total area of farms (hectares)

Average farm size
 Top five crops (hectares)
 Percentage of Organic farms
 List of other types of sustainable certification systems and number of corresponding farms (Food Alliance, Salmon-Safe...etc.)
 Extent of producers' debt
 Average age of farmers
 Contribution of agriculture to the region's Economy
 Percentage of Farms producing crops
 Existence of local policies or regulations around food, agriculture, and land usage
 Measures of food imports/exports to and from the city

PROFILE OF FOOD DISTRIBUTION

Availability of authorized food stamp retailers
 Number, type, and location of retail food stores
 Number of Wholesalers
 Number of Farmer's markets
 Locally-grown fruits and vegetables that are most widely available
 Number of community Kitchens
 Location of supermarkets and convenience stores
 Number of people who use charitable food resources on a monthly basis

Percent of household income that is spent on food
 Existence of food buying cooperatives or community-owned food retail outlets
 Percent of eligible people enrolled in food assistance programs

PROFILE OF COMMUNITY FOOD ASSISTANCE PROGRAMS

Federal Food Assistance Programs—Number and Location

Number and location of Food Stamp Program application sites
 Number and location of WIC clinics
 Number and location of schools with National School Lunch Program
 Number and location of schools with School Breakfast Program
 Number and location of Child and Adult Care Food Program (CACFP) providers
 Number and location of Summer Food Service Program sites
 Number and location of TEFAP and CSFP distribution sites
 Number and location of WIC Farmers' Market Nutrition Program sites
 Number and location of elderly nutrition programs

Federal Food Assistance Programs—Participation

Participation in Food Stamp Program
 Participation in WIC Program
 Participation in National School Lunch Program
 Participation in School Breakfast Program
 Participation in CACFP

Participation in Summer Food Service Program
 Participation in TEFAP distribution
 Participation in WIC Farmers' Market Nutrition Program
 Participation in Commodity Supplemental Food Program (CSFP)
 Participation in Meals On Wheels Program

Emergency Food Assistance Providers

Number, location, participation in, and times of operation of food banks, soup kitchens
 Number, location, participation in and times of operation of food pantries
 Number, location, participation in and times of operation of emergency kitchens
 Shelters w/ meals for residents
 Mobile Kitchens
 Food Rescue Programs (see diversion)

TRANSPORTATION

Number of vehicles per occupied housing unit by ZIP
 Number, type, routes, frequency, and per ride cost of public transportation resources (buses, trains, subways)
 Number, type, routes, frequency, and per ride cost of para-transit resources (store shuttles, taxis, etc.)
 Transportation available for food shopping
 Walkability

FOOD DISPOSAL AND RECOVERY

Specific Waste disposal, recycling, composting rates
 . Percentage of food surplus that is donated
 . Number of local gleaning programs
 Amount of food collected from local/regional gleaning programs

COMMUNITY HEALTH

Health/nutrition outreach/referral services
 Food / nutrition related projects
 Prevalence of dietary-related disease
 Rates of obesity/overweight
 Rates of Low birth weight
 Existence and nature of local policies around food, agriculture, and land usage.

B List*POPULATION PROFILE**Demographic Characteristics**

Total Population (Number)

Age

Race/Ethnicity

Citizenship

Total Households

People/Household

Socioeconomic Characteristics

Employment Status

Income

Poverty Status

Total number of persons by ZIP Code

Number of persons living below the poverty line by ZIP Code

Number of total occupied housing units by ZIP Code

Median annual family income

- Percentage of single parent households
- *Percentage of elderly*
- Percentage of Households spending more than 30% of their income on shelter
- *Percent of population aged 20 years and above who do not have 12th grade completion*
- Number of homeless

PROFILE OF COMMUNITY FOOD RESOURCES

Number and location of community gardens (in relation to low-income or high-density neighborhoods)

Number and location of school-based gardens

Number and location of community-supported agriculture programs, waiting lists

Number and location of farms

Number and location of dairies and fisheries

Number and location of food manufacturers and distributors

Number of farmer operators

Total area of farms (hectares)

Average farm size

Top five crops (hectares)

Percentage of Organic farms to conventional

List of other types of sustainable certification systems and number of corresponding farms (Food Alliance, Salmon-Safe...etc.)

*Farming employment and income, including off-farm income**Total gross farm receipts (excluding forest products sold) (\$)**Farm operating expenses**Total farm capital (market value \$)*

Extent of producers' debt

Land tenure

Availability of agricultural land to new farmers

Average age of farmers

Contribution of agriculture to the region's Economy

Net change in land in the Agricultural Land

Percentage of Farms producing crops

Existence of local policies or regulations around food, agriculture, and land usage

Number and location of vacant lots, brownfields and available green space that could be used for food production

Measures of food imports/exports to and from the city

Percentage of produce consumed that is grown in OR

Existence of any tax or other economic incentives for businesses and homeowners who grow food using sustainable practices

Residents' access to resources needed to participate in food policy development

The number of community, school and/or residential garden training programs and number of students enrolled

Existence of public/private partnerships that strive to maintain public land areas dedicated to food production

PROFILE OF FOOD DISTRIBUTION

Availability of authorized food stamp retailers

Number, type, and location of retail food stores

Number and location of consumer food cooperatives

Number of Wholesalers

Number of Farmer's markets

Number of people who attend farmers' markets

Amount spent at farmers markets

Number of community Kitchens

Number of people who use charitable food resources on a monthly basis

Number of restaurants serving local food

Price and Availability of local/organic compared to Conventional

Location of supermarkets and convenience stores

Number of fast food outlets per capita

Number of mobile food vendors and types of food sold

Existence of any nutrition and/or food procurement policies for public institutions, for retail grocers, or for restaurants

Does LC have any rules as to who supplies their food and how?

Existence of effective tax or other economic incentive programs for business involvement in sustainable food systems

Percent of household income that is spent on food

Degree to which LC food related establishments buy regionally produced food

Promotion of empty-calorie (non-nutritious) foods in schools (vending machines, cafeterias, surrounding neighborhood)

Existence of food buying cooperatives or community-owned food retail outlets

Percent of eligible people enrolled in food assistance programs

Redemption rate for food stamps and WIC coupons

Most common food purchases using food assistance vouchers

Number or percentage of food poisoning cases (salmonella, E. coli, etc.) per year

Residents' dependence on out-of season crops

Which fruits and vegetables are most widely consumed? What percentage are Organic? Local?

How many times per week do residents in your community eat at a fast food outlet?

How many calories do members of your community eat per day and how does this differ by age, ethnicity, neighborhood, etc?

PROFILE OF COMMUNITY AND FEDERAL FOOD ASSISTANCE PROGRAMS

Federal Food Assistance Programs—Number and Location

Number and location of Food Stamp Program application sites

Number and location of WIC clinics

Number and location of schools with National School Lunch Program

Number and location of schools with School Breakfast Program

Number and location of Child and Adult Care Food Program (CACFP) providers

Number and location of Summer Food Service Program sites

Number and location of TEFAP and CSFP distribution sites

Number and location of WIC Farmers' Market Nutrition Program sites

Number and location of Food Distribution Program on Indian Reservations (FDPIR) sites

Number and location of elderly nutrition programs

Federal Food Assistance Programs—Participation

Participation in Food Stamp Program

Participation in WIC Program

Participation in National School Lunch Program

Participation in School Breakfast Program

Participation in CACFP

Participation in Summer Food Service Program

Participation in TEFAP distribution

Participation in WIC Farmers' Market Nutrition Program

Participation in Commodity Supplemental Food Program (CSFP)

Participation in Meals On Wheels Program

Emergency Food Assistance Providers

Number, location, participation in, and times of operation of food banks, soup kitchens

Number, location, participation in and times of operation of food pantries

Number, location, participation in and times of operation of emergency kitchens

Shelters w/ meals for residents

Mobile Kitchens

Where charitable food comes from and the amount that is locally grown or processed.

Food Rescue Programs (see diversion)

TRANSPORTATION

Number of vehicles per occupied housing unit by ZIP

Number, type, routes, frequency, and per ride cost of public transportation resources (buses, trains, subways)

Number, type, routes, frequency, and per ride cost of paratransit resources (store shuttles, taxis, etc.)

Transportation available for food shopping

Walkability

Percentage of population that is within walking distance (450 meters) of a large grocery store or of public transportation that will take them to a large grocery store

FOOD DISPOSAL AND RECOVERY

Specific Waste disposal, recycling, composting rates

Number of local gleaning programs

Amount of food collected from local/regional gleaning programs

Percentage of food surplus that is donated

Existence of incentives (tax or otherwise) and infrastructure to encourage all food related establishments to donate excess

Amount of food and food packaging material that ends up in trash and in landfills

Percentage of residents/business that recycle and compost

Reasons why residents/businesses do not reuse, recycle, or compost

Existence of local, active educational programs around composting and waste reduction (including food production)

ENVIRONMENT, FARMER HEALTH

Any known environmental or farmer health problems, such as water quality, land contamination, hazardous waste

Identify environmental or health issues specifically in farming communities

COMMUNITY HEALTH

Health/nutrition outreach/referral services

Food / nutrition related projects

Number of agri-food organizations and programs that are active in the community.

Existence and nature of local policies around food, agriculture, and land usage.

Food-related economic development initiatives or community-owned processing ventures

The number of community, school, and/or residential garden training programs

- Prevalence of dietary-related disease
- *Mortality from dietary-related disease*
- Rates of obesity/overweight
- Rates of Low birth weight

Number of programs that provide food and/or nutritional information/support for people with specific health issues (e.g., diabetes and perceived acceptability and quality of food).

*Items in italics are found in the B list and not the A list.

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