Appendix 2
Literature Review

APPENDIX 2
SARE - PORTLAND METROPOLITAN FOODSHED STUDY
LITERATURE REVIEW PART I
APPROACH, BACKGROUND, AND KEY ISSUES
MAY 27, 2011

Purpose

The purpose of this initial literature review is to:

1. **Approaches and Policy Frameworks.** Identify approaches to economic analyses of local and regional foodsheds and identify key policy frameworks as well as case study examples.
2. **International, National and Portland Metro Area Case Studies.** Find national and Portland Metro area information collected to date on metropolitan foodsheds and identify data gaps.
3. **Barriers and Opportunities.** Identify key issues, barriers and opportunities faced by farmers and producers (in urban/urbanizing areas) strengthening the metropolitan foodshed economy.

Executive Summary

A summary of the Approaches and Policy Frameworks, Case Studies and Barriers and Opportunities sections of the literature review follows.

Approaches and Policy Frameworks

This section summarizes eight studies that serve as a framework for how to approach an economic assessment of metropolitan agriculture. These studies cover the global context for assessing the metropolitan foodshed economy, examine the case for local, sustainable agriculture and show several examples of foodshed assessment methodologies.

Major findings include:

- Rising fuel costs, climate change, replacing food crops with biofuels, increased meat consumption and politics are all contributing to the rising cost of food all over the world.
- Rapid urbanization creates vast numbers of new consumers, often poor, who require affordable food.
- Approximately 840 million people suffer from chronic hunger and 2 billion suffer from macronutrient deficiencies.
- There are many major threats and disruptions to food security all over the world.
- The distance between consumer and producer continues to increase, while energy costs and GHG emissions also increase.
- Metropolitan regions have an opportunity to develop community-based agricultural economic development.
- Industrialization has led to efficiencies in agricultural production, as well as degraded farmland, concurrent reduction in rural vitality and decreased access to healthy, local food.

- The most direct way that expansion in local food systems could benefit local economies is through import substitution.
- Economic multipliers show that buying local food has a significant, positive impact on the local economy.
- There is a renewed relevance of smaller, integrated economic systems and supply chains in a global age, in particular appreciation of quality construction, production and service.
- Increasing food security may require: knowing where our food comes from and where it might come from; changing our consumption patterns to prioritize foods that require less land and energy to produce; measuring the potential for local foods to reduce energy use and GHG emissions; tracking different "costs" of producing and transporting foods; and estimating the capacity for population centers to supply more of their food locally.
- Urban agriculture is one way for cities to address the costly challenges of vacant land.
- There is no generally accepted definition of "local" food, although local food markets include direct-to-consumer sales, farmers' markets, community supported agriculture operations (CSAs), farm-to-school programs, institutional purchases and local/regional markets.
- Direct-to-consumer, farmers' market, CSA, and farm-to-school program sales all have risen dramatically over the last ten years.
- Organic production and consumption continue rapid growth.
- There is growing government support for local food, although federal policy supports commodity production.
- Some consumers will pay a premium for local food.

Case Studies

National/International

This section summarizes eight example metropolitan foodshed market analyses from various cities and counties in the United States and Canada. Jurisdictions covered include: the State of Oregon; Lane County, OR; Sacramento, San Francisco, and Oakland, California; Vancouver, BC, Canada; the Delaware Valley region around Philadelphia, Pennsylvania; the State of Ohio; North Carolina; and Treasure Valley, Idaho.

Major findings of these case studies include:

- There are several national sources of data available to assess food systems/markets, e.g. Bureau of Labor Statistics, Census of Agriculture, Oregon Employment Department, and Oregon Agricultural Information Network.
- Other sources include private data (grocery stores), interviews, and surveys.
- Parts of the food system most often studied include growers, processors, land, retail/restaurants, distribution/transportation, agri-tourism, policy/land use, waste recovery and consumers.
- Most metropolitan foodshed areas import many millions of dollars in food every year.
- In most cases, demand for food exceeds the local supply.
- There is a growing interest in locally and sustainably grown foods across the U.S.
- Oregon residents value locally grown food and local farmers.
- Demand for growing food is increasing, while demand for nursery products is declining along with the collapse of the housing market.
- Most farmers do not make enough money farming to make a living, and many hold second jobs.

- The high price of land and inheritance laws can be prohibitive for entry by new farmers.
- Agri-tourism has a great deal of potential for increasing the economic viability of farming.
- The prevalence of cheap, unhealthy food is a major threat to consumer health and the economic viability of farmers.
- There are a variety of ways to encourage residents to change their behavior and buy local and/or sustainably grown and processed food.
- Clusters of community-based food businesses create jobs, but do even more; they create collaborative groups of new business owners.
- The key "lever" driving change in some emerging food systems is commerce based on relationships of mutual trust, through clusters of firms that grow in concert with each other to create both resilience and stability.
- Oregon is one of the strongest agricultural states in the nation in terms of length of growing season, quality of agricultural soils, and the diversity and quantity of food crops that are produced. However, at the same time, our state currently ranks second among all states for the number of people who are forced to skip or reduce the size of their meals because they cannot afford enough food (*termed very low food security).*
- A 2005 USDA study showed that small Oregon farming operations or adaptive farms tend to have average gross sales per acre that are about twice as high as the overall average.
- For the same small farms, the average age of the Oregon operator is lower than for farmers in general, and the number of off-farm work days declines over time.
- While Oregon's land use laws have protected agricultural acreage, they may also have constrained the development of adaptive farms and agricultural tourism.
- Between 2002 and 2007, the number of Oregon farms in organic production raised from 515 to 933 and from 1.3% of total farms to 2.4%.
- In 2007, 470 farms with 16,175 acres were converted to organic production in Oregon
- Between 2002 and 2007, the market value of Oregon's organic farm sales rose from about $9.9 million to $88.4 million, or from 0.3% of total farm sales to 1.9%.
- As of 2007, over 75% of the total acreage (over 12 million acres) in Oregon was dedicated to food production.
- The USDA has initiated a "know your farmer, know your food" campaign educating people about buying local and supporting farmers' efforts to build personal relationships with their customers.
- In 2005, Oregon nursery crops, bulbs, greenhouse crops, and turf were 19.1 percent of the total, but by 2009 they had declined to 15.4 percent.
- Oregon grains were 4.9 percent in 2005 and increased to 7.3 percent in 2009.
- Oregon's dairy products sector continues to increase its share of the total, from 8.4 percent in 2005 to 9.5 percent in 2009.
- Rural Oregon has been hardest hit, with several counties—including Crook, Douglas, Jefferson, Harney and Grant—all above 15% in 2010.
- According to the Oregon Farm Bureau, three quarters of what is produced in Oregon is exported to other states and overseas with ¼ sold in Oregon.
- Oregon has less industrialized agriculture than other states because of the diversity of farm products, size of farms, with high production of specialty crops, such as fruits, vegetables, tree nuts, dried fruits and nursery crops.
- Oregon has a strong base of multi-generational, family farms and emerging farmers, such as immigrants and a younger generation with a renewed interest in farming.

- There is an opportunity to develop Oregon's regional food infrastructure for storage, processing, marketing and distribution that supports the community food system movement, especially for small and mid-sized growers.

Portland Metro Area

There are 13 food system analysis case studies from the Portland metropolitan region summarized in this section. Topics/sources include:

- Clark County, WA
- Multnomah Food Action Plan/Multnomah County Office of Sustainability
- Bi-state Portland Metro region/Institute of Portland Metropolitan Studies
- The City of Damascus/Lynn Weigand
- Willamette Valley/Giombolini, Katy J. et al
- Clackamas County agriculture/County Soil and Water Conservation District
- Clackamas County institutional purchasing/Workforce Investment Council of Clackamas County
- Agriculture and natural resources economy/Clackamas County
- Commercial viability of Metro region agricultural lands/Oregon Department of Agriculture
- Food systems (Portland Plan Food Systems Background and Final Reports)/City of Portland
- Farmers markets/City of Portland
- Urban agriculture/Portland/Multnomah Food Policy Council

Major findings of these studies include:

- There is a wealth of existing data and example frameworks for assessing the Portland metropolitan foodshed economy.
- Major topics most commonly studied include:
  - Farmers market characteristics and sales.
  - Institutional purchasing.
  - Land.
  - Crop types and sales.
  - Food processing.
  - Characteristics of growers and other human capital.
  - Food waste
  - Water, land use, food security, policy and energy issues.
  - Consumer choices and health.
  - Demand for local food.
  - Marketing.
  - Urban agriculture.
- Portland metropolitan agriculture is a major economic engine.
- Portland metropolitan residents, organizations and governments value agriculture and locally-grown food.
- Agri-tourism is popular and has more potential, e.g. Sauvie Island Corn Maize.
- There are significant land use, policy, economic and other barriers to the long-term success of local growers.
- In a few specific areas, demand exceeds capacity for opportunities to buy and grow local food in the Portland metropolitan region. For example:

    - Waiting lists for community supported agriculture operations are 100% of the current capacity (2010).
    - There are over 1,300 people on the waiting list for plots in City of Portland community gardens.
- Many local governments and institutions are exploring opportunities to buy local food products.
- Gaps in the available data include:
    - Total regional imports and exports.
    - Economic multipliers for various parts of the Portland metropolitan foodshed economy.
    - Detailed needs and issues faced by local growers.
    - Gaps between jurisdictions and counties, e.g. some have assessed food processing, while others have not.
    - Types and certifications for sustainable farming methods used in local agriculture.
    - The economic impact/opportunity of food waste.

Barriers and Opportunities

This section summarizes seven studies that explore barriers and opportunities to the success of metropolitan agriculture, and in particular the success of growers. Several of the studies are also cited in previous sections.

Key challenges to consider:

- Barriers to local food-market entry and expansion.
- Linkages between growers and local markets.
- Limited processing and storage capacity.
- Methods to mitigate risk.
- Institutional and grocery store requirements.
- Threats to agricultural success include limited supply and affordability of land.
- Age profile of farmers and interest of heirs.
- Protection of farmland and the right to farm.
- Zoning and land use regulations.
- Water availability and quality.
- Inheritance laws.
- Education and training for farmers and employees, including marketing.
- Availability of experienced and well-trained labor force.
- Obstacles to the general practice of urban agriculture include: site-related, government-related, procedure-related, perception-related.

Summary of Sources

Approaches and Policy Frameworks

Severson, Kim, April 23, 2011. ***Behind the Rising Cost of Food*****, New York Times,** ***http://www.nytimes.com/2011/04/24/weekinreview/24food.html***

This article explores the continuing rise in the cost of food over the last year. As culprits, the article cites rising fuel costs, climate change, replacing food crops with biofuels, changes in how the world eats (increasing demand) and politics.

Key findings include:

- When Laurent Gbagbo tried to hold onto his presidency, his rival cut off export of the cocoa crop and prices in the United States hit a 32-year high.
- Hershey's has raised the cost of its products by 10%.
- Drought, possibly the result of climate change, is limiting the supply of coffee beans.
- Wholesale food prices rose 3.9% in February of 2011, the largest one month increase on record since 1974.
- Demand for food is driving prices up, e.g. the cost of food worldwide rose 37% from February, 2010 to this year (United Nations).
- The cost of meat is 17% higher this year than in 2010.

***Summit Report: First Global Summit on Metropolitan Agriculture,* Rotterdam, Netherlands, September 28-30, 2010**

This report summarizes the findings of the Global Summit on Metropolitan Agriculture, put on by the Metropolitan Agriculture Innoversity. About 18 months before the summit, the Metropolitan Agriculture Innoversity was conceived by TransForum and Reos to be a new action-learning network dedicated to initiating the processes necessary to create meaningful change in the agricultural and food sectors. Its stated objective was to provide a forum for knowledge-sharing and co-creating the Metropolitan Agriculture vision and practice around the world. It would deliver three sets of results at both the global and the local levels--initiatives, capacity-building and relationships. The summit brought together multi-stakeholder teams, including participants from agro-industry, governments, knowledge institutes and societal groups from six different global countries to talk about metropolitan agriculture.

The global context leading to the summit includes:

- In 2007, the UN famously announced that within the year half of the world's population would live in urban areas (UNFPA 2007).
- The majority of today's population increase takes place in cities; particularly in the global South, which the UN estimates will account for 93% of all urban population growth over the next four decades (ibid).
- Rapid urbanization creates vast numbers of new consumers, often poor, who require affordable food.
- Changes in consumption patterns in rapidly developing countries such as China, where more people are eating high protein meat and dairy products, can damage ecosystems and strain supplies of staple foods.
- Middle class consumers in cities in the West continue to demand high quality food, while at the same time economic downturn has resulted in growing numbers of malnourished people, high unemployment and urban out-migration.
- Cities have fewer green spaces as competition for space and resources increases.
- Pollution creates environmental health risks for many city dwellers face shortages in basic services such as electricity, health and transportation as demand outpaces supply.
- At the same time, cities depend on a globalized food system that has removed agriculture from metropolitan space, also increasing their vulnerability to economic and environmental crises.
- Technological advances in storage and transportation allow food consumed in urban areas to be produced on the other side of the planet. This, combined with high yield crops and intensive production processes, has increased the distance between consumer and producer.

- Most of these industrial production processes rely on high-input, chemically-based cultivation techniques that deplete soils. This leaves long-term yields in question as ecosystems and resources undergo severe strain. Global economic shocks can rapidly increase food prices, which disproportionately impact poor urban consumers, and globalized supply chains rely on cheap oil to get products from place to place.
- Climate change has the potential to affect cities worldwide, from sea rise and salinisation of the water table in coastal cities to significant localized climate shifts in all other areas, while also posing problems for the global food supply (Simon and Gueye 2009).
- A recent report on the Nile delta, where the city of Alexandria is located, reports that 60% of Egypt's food supply is under threat, and wheat and maize yields could be down 40% and 50% respectively in the next 30 years.
- On a global level, agriculture must aim for dramatic increases in efficiency, less intensive resource use and a reduction in external inputs. Cities possess the knowledge, infrastructure and influence necessary to act as a catalyst for these changes.

Key topics discussed at the summit include:

- The Potential of Metro Ag for Food Security—hosted by Dr. Rudy Rabbinge, Wageningen University, Netherlands and Florian Kroll, food security and environmental researcher and consultant, South Africa (Coffee Fabriek, Stage Area).
- Business Models for Linking Smaller Producers to Metropolitan Markets — hosted by Dan Carmody, Detroit Eastern Market, USA (Arabica Room) and Jan Kees Vis, Unilever, Netherlands (Havana Room).
- The Role of Reflective Learning in Practical Metro Ag Innovation Projects —hosted by Dr. Chris Peterson, Michigan State University, USA.
- Business Models for Sustainable Intenstification—hosted by Dr. Peter Smeets, Wageningen University, Netherlands (Virginia Room).
- Financing Metro Ag Innovations—hosted by Kalyan Chakravathy, New Delhi, India (Coffee Fabriek, Lounge Area).
- Integrating Agriculture in Urban Spatial and City Planning — hosted by Kathryn Underwood, City of Detroit, USA and Marco van Steekelenburg, Province of South Holland (Piggleme Room).

Betz, Nathaniel and Jill K. Clark, *A Metropolitan Agricultural Supplement for U.S. Food Systems*, Center for Farmland Policy Innovation, Ohio State University, *http://cffpi.osu.edu/docs/MAS072810.pdf*

This analysis reviews relevant literature and describes the concept and opportunity for development of Metropolitan Agricultural Supplements (MAS) across the country. It describes several interrelated developments that contribute to new societal priorities in the U.S., beginning with a capitalized industrial paradigm and culminating in the formation of the metropolitan region. Finally, it articulates how the metropolitan region presents a framework within which new opportunity can be developed, particularly in the form of community-based agricultural economic development.

Some key findings include:

- The beneficial aspects of industrialization, in agriculture and other sectors, include lower prices for consumers, greater opportunity for advancement in technological inputs and

more product than necessary for minimum standards of living (at least for those with access to markets).

- Problems associated with an over-reliance on industrialism, especially for agriculture, include the degradation of quality farmland, a concurrent reduction in rural vitality and decreased access to healthy, local food.
- A global, industrialized economy is not entirely sufficient to meet community socio-economic needs or match the service, community commitment and well-rounded skill development opportunities of a truly balanced economy.
- There is a renewed relevance of smaller, integrated economic systems and supply chains in a global age, in particular appreciation of quality construction, production and service – balanced by the continued presence of a still-reliable global industrial economy.
- Methods and components of a successful supplement to conventional agriculture are helpful in understanding the potential in small to medium-scale agriculture. Two of the most prominent of these approaches are Lyson's civic agriculture and Marsden's rural development model with emphasis on its short food supply chains.
- The development of metropolitan-scale agricultural economic enterprise to fill these growing opportunities can be achieved through community-based agricultural economic development (CBAED). CBAED is an integrated local effort to capitalize on intrinsic resources to retain and expand the agricultural economic strengths of a region. The concept was introduced by researchers at Penn State University and is being developed by the Center for Farmland Policy Innovation at Ohio State University through a grant program supporting implementation in local communities.

Peters, Christian J., 2008. *Foodshed Analysis and its Relevance to Sustainability.* Cambridge University Press.
This article offers a working definition of a foodshed (the geographic area from which a population derives its food supply) and foodshed analysis "the study of the action or potential sources of food for a population, particularly those factors influencing the movement of food from its origin ….to its destination…."

It explores the concept of "local food", concluding that the threat of global food insecurity is very real, due to climate change, dwindling fossil fuel supplies and conversion of agricultural land from food to energy production.

Peters concludes that "a major challenge facing agriculture and the food system in this century will be trying to improve food security and human nutrition while using less fossil energy and reducing greenhouse gas emissions."

Examples of the growing impacts of food insecurity include:

- Global food prices have seen an average annual increase of 15% between 2006 and 2008, relative to 1.3% between 2000 and 2005.
- Approximately 840 million people suffer from chronic hunger.
- More than 2 billion suffer from macronutrient deficiencies.
- Increases in food prices reduce the purchasing power of household incomes.

Potential solutions include:

- Know where food is coming from and where it might come from.
- Change consumption patterns, e.g.:

    - reduce excess consumption of calories;
    - substitute plant protein for livestock sources, which reduces land requirements of feed crops; and
    - explore options for reducing the demand for foods that occupy the most land area, require the greatest energy inputs or cause the largest greenhouse gas emissions (GHG) emissions.
- To analyze how shifts to diets based on more local foods could reduce energy use or climate forcing emissions, a foodshed analysis should: trace the flow of food from its origin as an agricultural commodity on a farm to its ultimate point of consumption.
- Measure different "costs" of producing and transportation products through the system, e.g. energy consumed, GHG emitted or prices paid at each stage in the food system and for different locations.

The resulting framework would:

- Help evaluate how the geography of the food system influences its impact on the environment and the vulnerability of populations to disruptions in their food supplies.
- Help plan how the geography of food systems should change to enhance sustainability.
- Estimate the capacity for population centers to supply more of their food from local sources.

For a detailed example of how to evaluate the capacity of an urban area to localize food production, see:
Peters, C.J., Bills, N.L., Lembo, A.J., Wilkins, J.L., and Fick, G.W. In press. *Mapping potential Foodsheds in New York State: a spatial model for evaluating the capacity to localize food production.* Renewable Agriculture and Food Systems.

Kaufman, Jerry and Bailkey, Martin, 2000. *Farming Inside Cities: Entrepreneurial Urban Agriculture in the United States.* Lincoln Institute of Land Policy Working Paper.
The report investigates the nature and characteristics of for-market city farming. The study states that urban vacant land is a costly problem for many cities which could be addressed, in part, through urban agriculture. The United Nations Development Program claimed that in 1996 urban-produced food accounted for 15% of the world's food production.

It also finds that entrepreneurial urban agriculture projects, whether non-profit or for-profit, differ across several important dimensions, including funding sources and capacity, labor, scale, production techniques and market.

The institutional climate for entrepreneurial urban agriculture is another important consideration. Some questions to consider include:

- In general, is the local government's attitude towards entrepreneurial urban agriculture supportive, neutral or negative?
- What is the local market demand for vacant inner city land?
- Are the local government policies and regulations relevant to urban agriculture facilitative or restrictive?
- Are local foundations willing to provide funding for such projects?
- What is the attitude of state and national government representatives towards urban agriculture?

- Do local community development groups view urban agriculture as a way of creating jobs and bringing economic investment to their areas or are they skeptical of its viability?
- What are the existing local greening programs from which urban agriculture could build?
- Can urban agriculture provide welfare-to-work jobs?
  Can city-produced foods help satisfy the public's increasing demand for organically grown products?

This study found that:

- City farming enthusiasts are far outnumbered by those who are skeptical about it or disinterested in it.
- Many for-market urban agriculture projects are underfunded, understaffed and confronted with difficult management and marketing issues.
- Urban agriculture is not seen as the "highest and best use" of vacant inner city land by most local government policy officials who would like to attract "better" tax paying uses on this land.
- The conventional view is that food-growing is something that takes place and belongs on rural land. The idea of turning urban areas into areas where a viable food crop could be produced is still foreign to most people.

Yet this study also found some evidence of a more hopeful reality for entrepreneurial urban agriculture:

- A diverse array of market city farming ventures exist. As of the year 2000, 70 entrepreneurial urban agriculture projects were underway throughout the country.
- Pockets of support for for-market urban agriculture ventures were found among a cadre of local and higher level government officials, non-profit community groups and local foundation staff in several cities.
- People who live close to where food-growing enterprises are located in inner city neighborhoods are generally positive about the value of such developments for their neighborhoods.
- Market city farming operations are beginning to tap into a small well of steady government and foundation sources to provide working capital for their early stages.
- A handful of entrepreneurial urban agriculture projects are beginning to show some profits. More of them are providing a variety of other social, aesthetic, health and community-building and empowerment benefits.

Martinez, Steve et al., May 2010. *Local Food Systems: Concepts, Impacts, and Issues.* USDA Economic Research Services, Economic Research Report Number 97.
This article provides a comprehensive literature-based overview of local food systems and makes the following general findings:

- There is no generally accepted definition of "local" food.
- Many definitions are based on market arrangements.
- Local food markets include direct-to-consumer sales, farmers' markets, CSAs and farm to school programs.
- Local food is most likely from small farmers who produce heterogeneous products and have short supply chains and are located in urban corridors.
- There is growing government support for local food.

- Some consumers will pay a premium for local food.
- Barriers to local food-market entry and expansion include capacity constraints, lack of distribution systems, limited marketing and uncertainties about regulations (e.g., food safety requirements). More information included in Barriers and Opportunities.

The study notes that local food markets account for small, but growing share of total U.S. agricultural sales (USDA Census of Agriculture Statistics Service):

- Direct-to-consumer marketing amounted to $1.2 billion in current dollar sales in 2007, according to the 2007 Census of Agriculture, compared with $551 million in 1997.
- Direct-to-consumer sales accounted for 0.4% of total agricultural sales in 2007, up from 0.3% in 1997. If non-edible products are excluded from total agricultural sales, direct-to-consumer sales accounted for 0.8%of agricultural sales in 2007.
- The number of farmers' markets rose to 5,274 in 2009, up from 2,756 in 1998 and 1,755 in 1994, according to USDA's Agricultural Marketing Service.
- In 2005, there were 1,144 community-supported agriculture organizations (CSAs) in operation, up from 400 in 2001 and 2 in 1986, according to a study by the non-profit, nongovernmental organization National Center for Appropriate Technology. In early 2010, estimates exceeded 1,400, but the number could be much larger.
- The number of farm to school programs, which use local farms as food suppliers for school meals programs, increased to 2,095 in 2009, up from 400 in 2004 and 2 in the 1996-97 school year, according to the National Farm to School Network. Data from the 2005 School Nutrition and Dietary Assessment Survey, sponsored by USDA's Food and Nutrition Service, showed that 14 %of school districts participated in Farm to School programs, and 16% reported having guidelines for purchasing locally grown produce.

Key findings on the economic development, health, food security and lowered transportation costs opportunities of local food:

- The expansion of local food markets implies that consumers in a particular area are purchasing more of their food from nearby sources and that more of the money they spend remains in their local community. Hence, local food systems have the potential to positively impact the local economy. Claims of economic development impacts, in the form of income and employment growth, are common in local foods research. (Ross et al., 1999).
- Expansion of local foods may be a development strategy for rural areas. Farmers' retention of a greater share of the food dollar by eliminating money going to the "middlemen" as a possible benefit. Roininen et al. (2006) assert that local food systems may encourage growth in local labor markets.
- The most direct way that expansion in local food systems could impact local economies is through import substitution. If consumers purchase food produced within a local area instead of imports from outside the area, sales are more likely to accrue to people and businesses within the area. This may then generate additional economic impacts as workers and businesses spend the additional income on production inputs and other products within the area (Swenson, 2009).
- Shifting the location of intermediate stages of food production and direct to consumer marketing can also be considered forms of import substitution.
- Empirical studies suggest that local foods can have a positive impact on local economic activity through import substitution and localization of processing activities. Using an input-output model (see box, "Input-Output Models and the Multiplier Effect"),

Swenson (2008 and 2009) predicted that locally produced fruits, vegetables, and meat products would increase output, employment, and labor incomes in Iowa. This was due, in part, to development of direct-marketing facilities and increases in local meat slaughtering and processing.

- Farmers' markets have been found to have positive impacts on local economies. Otto and Varner (2005) estimated that each dollar spent at farmers' markets in Iowa generated 58 cents in indirect and induced sales, and that each dollar of personal income earned at farmers' markets generated an additional 47 cents in indirect and induced income (multipliers of 1.58 and 1.47, respectively). The multiplier effect for jobs was 1.45; that is, each full-time equivalent job created at farmers' markets supported almost half of a full-time equivalent job in other sectors of the Iowa economy. Similarly, multipliers associated with farmers' markets in Oklahoma have been estimated to be between 1.41 and 1.78 (Henneberry et al., 2009).
- The magnitude of the economic impact from import substitution depends on the sources of inputs for local production and processing (i.e., whether money spent on inputs is retained locally or not) and the degree to which a local supply chain displaces local economic activity that supported nonlocal products. This could include reductions in traditional commodity marketing (e.g., grains) or industries that support distribution and marketing of nonlocal food products (e.g., supermarkets).
- Accounting for displaced economic activity within the local community reduces the positive economic impacts of localization, although estimated overall benefits are still positive. Swenson (2008) assumed that an increase in acreage devoted to local fruit and vegetable production would replace corn and soybean acreage, which partially offsets some of the predicted economic benefits. Hughes et al., (2008) account for lost spending at mainstream retail stores due to spending at farmers' markets in West Virginia. The net economic impacts of farmers' markets in the state were found to be positive, but lost sales at retail stores offset some of this impact. Farmers' markets in West Virginia were estimated to generate $656,000 in annual labor income, $2.4 million in industry output, and 69.2 full-time equivalent jobs. While still positive, these impacts were offset by $463,000 in lost labor income, $1.3 million in lost industry output, and 26.4 lost full-time equivalent jobs generated by mainstream retail stores (see table 3 in Hughes et al., 2008).
- Local food markets may stimulate additional business activity within the local economy by improving business skills and opportunities. Feenstra et al., (2003) examined the role of farmers' markets in creating and sustaining new rural businesses. Farmers' markets helped medium ($10,000-$99,999 gross sales) and large-scale ($100,000 or more gross sales) enterprises to expand or complemented existing, well established businesses. For small vendors (less than $10,000 gross sales), farmers' markets appeared to operate as a relatively low-risk incubator for new businesses and a primary venue for part-time enterprises in a nurturing environment. These types of benefits are difficult to quantify because investments in business skills and development may take years to generate observable benefits. However, business skill development may be an attractive benefit in areas where few other options are available to acquire additional skills and market experience.
- The presence of local food markets may also spur consumer spending at other businesses in a community. This spillover spending could support the retail sector in a community if, for example, a farmers' market draws consumers to an area where they would not have otherwise spent money. Lev et al., (2003) found that many farmers'

market shoppers traveled to downtown areas specifically to patronize the market and also spent additional money at neighboring businesses.

- The potential for local food systems to improve food security is conceptually similar to claims related to health benefits. That is, expanding local food options may increase the availability of healthy food items, particularly in areas with limited access to fresh food. The prevalence of healthy food items may encourage increased intake of fruits and vegetables, and improved availability may reduce problems related to food access and uncertainty. An implicit assumption in this argument is that local food systems improve access and reduce uncertainty (Cowell and Parkinson, 2003).

Swenson, David. ***Economic Impact of a Diversified Small Farming Operation in Woodbury County*****, Department of Economics, Iowa State University**
This very short report looks at the localized economic impact of a small, diversified farm ($153,000 in receipts) in Iowa that produces eggs, broiler chickens and beef; engages in some custom work; and realizes some feed sales.

The report found the following multipliers that may be applied to small, diversified farming operations:

Small Farm Regional Economic Impacts

	Farm Level Only	Total Regional Economy	Multiplier
Output	153,500	212,090	1.38
Labor income	40,812	59,104	1.45
Other income	17,895	29,171	1.63
Jobs	1.5	2.15	1.43

Blum-Evits, Shemariah, May 2009. ***Designing a Foodshed Assessment Model: Guidance for Local and Regional Planners in Understanding Local Farm Capacity in Comparison to Local Food Needs.*** **Thesis submission, Graduate School of Regional Planning, University of Massachusetts Amherst.**
This thesis, which was a major source in creating the SARE project's definition of the Portland Metropolitan Foodshed, explores how to conduct a regional foodshed assessment and provides guidance on the use of foodshed assessments. Foodshed assessments determine the food needs of a region's population and compare it to the land base needed to support that population. The thesis presents a variety of food system analysis tools, including community food assessment, community food security, food sovereignty assessment, community mapping technique and foodshed assessment. It also includes a discussion of how to determine the foodshed study area, data collected and analytical methods.

Case Studies

Oregon State University Extension Service Rural Studies Program, February 2011, ***Oregon Agriculture and the Economy: An Update.***
Using data from the 2010 Census, 2007 and 2009 USDA Census of Agriculture and 2005-2009 OSU Oregon Agriculture Information Network data on sales, employment and value-added, this study is the most recent publication examining the economic impact of agriculture in the State of Oregon. The study also relies on Oregon Employment Department data and estimates

from IMPLAN and the USDA Economic Research Service (ERS). The report is an update to the 2008 *Oregon Agriculture and the Economy.*

The study analyzes the following economic impact areas:

- Farm and Ranch Production
- Farmgate Sales
- Processing
- Agricultural Support Services, Wholesale Trade, Transportation and Warehousing, Retail Trade, and Food Services and Drinking Places
- Economic Footprint
- Oregon's Economic Dependence on Agriculture
- Implications for Agriculture and Oregon

The analysis includes:

- A profile of Oregon agriculture (including organic production on its own)
- An estimate of agriculture's "economic footprint"
- Measures of the extent to which Oregon's economy depends on agriculture or agriculture's economic impacts
- Discussion the implications of these findings

Key findings include:

- In 2009, agriculture was responsible for or connected to more than 15% of all economic activity in Oregon.
- For the same year, agriculture added more than $22 billion to Oregon's net state product, despite a decrease in the number of farms and land in farming.
- A 2005 USDA study showed that small farming operations or adaptive farms tend to have average gross sales per acre that are about twice as high as the overall average.
- For the same small farms, the average age of operator is lower than for farmers in general, and the number of off-farm work days declines over time.
- While Oregon's land use laws have protected agricultural acreage, they may also have constrained the development of adaptive farms.
- Between 2002 and 2007, the number of farms in organic production raised from 515 to 933 and from 1.3% of total farms to 2.4%.
- In 2007, 470 farms with 16,175 acres were converted to organic production.
- Between 2002 and 2007, the market value of organic farm sales rose from about $9.9 million to $88.4 million or from 0.3% of total farm sales to 1.9%.
- As of 2007, over 75% of total acreage (over 12 million acres) in Oregon was dedicated to food production.
- The USDA has initiated a "know your farmer, know your food" campaign educating people about buying local and supporting farmers' efforts to build personal relationships with their customers.
- In 2007, nearly two-thirds of Oregon farms reported net losses.
- In 2005, nursery crops, bulbs, greenhouse crops, and turf were 19.1 percent of the total, but by 2009 they had declined to 15.4 percent.
- Grains were 4.9 percent in 2005 and increased to 7.3 percent in 2009.
- The dairy products sector continues to increase its share of the total, from 8.4 percent in 2005 to 9.5 percent in 2009.
- Producers struggle to maintain profit while using sustainable production methods.

- Production costs, especially fuel, fertilizer and labor, continue to increase.

Opportunities:

- Policy changes can have a large impact on farmer viability, in terms of sales, jobs or value-added contributions.
- Oregon is a leader in alternative energy and there is great potential for farmers to generate additional income and increase tax breaks from leasing a small portion of their land to solar or wind turbine production.
- If a small portion of the alternative energy generated on rural and agricultural land is used within Oregon, the impact would far exceed the current level of Oregon tax dollars contributed from this development.
- There is great potential to increase demand for Oregon agricultural products by taking advantage of the very strong linkages between farmgate and restaurant plate (almost half of consumers' food expenditures are for food purchased away from home). Consumers are making the connection by seeking out eating and drinking places that highlight local food products.
- Decision makers can help develop these markets through low-cost incentive programs, customized land use regulations to encourage adaptive farming, support for research and tailor regulations to the needs of producers that are long-standing Oregon businesses.
- Strengthen development of controlled-release fertilizers, optimize plant nutrient use and minimize losses to the air and water to combat the rising cost of fertilizer dependent on imported natural gas and benefit the environment.

Hanson, Kim for Meyer Memorial Trust, December 2010, *Community Food Systems in Oregon: Opportunities to Build Capacity for Food Security, Health and Economic Vitality.* This study relies on a wide variety of data sources to detail the state of food security, health and economic vitality in Oregon's food systems. The literature review sources include: the Center for Disease Control, Community Health Partnership, OSU Extension Service and Public Policy programs, Oregon Food Bank, Ecotrust, Oregon Farm Bureau, Oregon Hunger Relief Task Force, the Oregon Department of Education, Washington State Department of Agriculture, the USDA and Worksource Oregon Employment Department.

In addition, the authors conducted 48 interviews with nonprofit organizations, government agencies, academics, business owners and foundations; participated in five National Good Food Network webinars; three community food events.

The report defines the concept of a community food system, why these systems are important and proposes a framework for strengthening community food system work in Oregon. Areas analyzed include:

- Local food infrastructure,
- Job potential in the food and agriculture sector.
- Health, social equity and food access.
- Farm-to-school/school gardens.
- Community involvement/leadership development.
- Statewide leadership/convening.
- Food system funders and funding gaps.
- Training and research.

Key findings of the literature review include:

- Oregon is one of the strongest agricultural states in the nation in terms of length of growing season, quality of agricultural soils, and the diversity and quantity of food crops that are produced. However, at the same time, our state currently ranks second among all states for the number of people who are forced to skip or reduce the size of their meals because they cannot afford enough food (*termed very low food security).*
- In August 2010, unemployment was at 10.6%, the 7th highest in the nation.
- Rural Oregon has been hardest hit, with several counties—including Crook, Douglas, Jefferson, Harney and Grant—all above 15% in 2010.
- The current recession is affecting families with no prior history of poverty and two-parent households who are typically more immune to poverty.
- Over the past three years (2008, 2009 and 2010), Supplemental Nutrition Assistance Program applications totaled over 710,000 individuals.
- In 2010, the Oregon Food Bank Statewide Netork distributed 917,000 emergency food boxes—up 17% over the past three years, with double digit increases in Washington, Coos and Curry counties.
- In 2009, 50.2% of Oregon school children were eligible for free or reduced price lunches.
- In 2009, 23% of Oregonians were considered obese, with close to 2/3 considered overweight or obese.
- Oregon has the lowest childhood obesity rate at 10%, while 16% of children aged 10-17 are obese nationwide.
- There are strong correlations between hunger, food insecurity, obesity and chronic disease.
- Low-income communities and people of color are more likely to suffer from diet-related disease than Caucasian people or affluent communities.
- According to the Oregon Farm Bureau, three quarters of what is produced in Oregon is exported to other states and overseas with ¼ sold in Oregon.
- Oregon has had less impact from industrialized agriculture because of the diversity of farm products, with high production of specialty crops, such as fruits, vegetables, tree nuts, dried fruits and nursery crops.
- Oregon has a strong base of multi-generational, family farms and emerging farmers, such as immigrants and a younger generation with a renewed interest in farming.
- There is an opportunity to develop the regional food infrastructure for storage, processing, marketing and distribution that supports the community food system movement, especially for small and mid-sized growers.

Key findings of the community food system analysis (revisit this framework for Literature Review #2):

- A community food system is a collaborative network that integrates sustainable food production, processing, distribution, consumption and waste management in order to enhance the environmental, economic and social health of a particular place.
- One of the most important aspects of sustainable community food system projects is that they increase resident participation to achieve the following goals:
  - Access to affordable, healthy food for all members of the community;
  - A stable base of family farms that use sustainable production practices and emphasize local Inputs.
  - Marketing and processing practices that create more direct links between farmers and consumers;

- Improved access by all community members to an adequate, affordable, nutritious diet;
- Food and agriculture-related businesses that create jobs and recirculate financial capital within the community;
- Improved living and working conditions for farm and food system labor;
- Creation of food and agriculture policies that promote local or sustainable food production, processing and consumption;
- Adoption of dietary behaviors that reflect concern about individual, environmental and community health.

Community Planning Workshop, University of Oregon, September 2010. ***Lane County Local Food Market Analysis.***
The primary objective of this study was to identify economic opportunities associated with the local food system.

The local food supply is defined by:
- County agricultural sales (OAIN data).
- Jobs in local food supply chain (no source).
- Food crops (OAIN).
- Food processing, storage and distribution (e.g. number of businesses and jobs in three areas (OED)).

Local demand for food is defined by:
- Residents spending on food (private study).
- Other academic research on trends/consumer demand.
- Interviews with managers from 15 major conventional grocery stores (Safeway, Fred Meyer and Albertsons).
- Projections of institutional demand.

Major findings of this study's literature review include:
- A 2006 study of the economic impacts of local fruit and vegetable production in Iowa, found that if Iowans purchased seven servings of fruits and vegetables locally for three months of the year, the direct and indirect economic benefits would amount to the creation of almost 6.000 jobs or one job per 500 residents.[1]
- A 2010 analysis of increasing local fruit and vegetable production in the upper Midwest calculated jobs multipliers of 1.67 to 1.95, meaning that for every on-farm job directly created through increased production of local fruits and vegetables, up to 95% of a job is created elsewhere in the economy.[2]
- An equal area of land in local fruit and vegetable production can support as much as five times as many jobs as corn and soybean production. [3]
- A study conducted by the American Farmland Trust in 2001 showed that 52%of Americans want their food to be produced within their own state. The same study noted that 54% of the respondents reported making a purchase at a farmers market within the past year; 40%reported purchases from a farm stand in the same period.

[1] Dave Swenson, The Economic Impacts of Increased Fruit and Vegetable Production and Consumption in Iowa: Phase II (Ames, IA: Leopold Center for Sustainable Agriculture, 2006).
[2] Dave Swenson. Selected Measures of the Economic Values of Increased Fruit and Vegetable Production and Consumption in the Upper Midwest (Ames, IA: Leopold Center for Sustainable Agriculture, 2010).
[3] Ibid.

- Another study found that 87% of consumers in Albany and Corvallis believed that the purchase of local foods to support local farms was very important or somewhat important and 89% believed purchase of local foods was important to support the local economy.
- In the same study of Albany and Corvallis, although income and demographic factors were not associated with support for local products, nearly 50% of consumers were willing to pay more for local products, compared with 35% willing to pay the same and 16% who expected to pay less.
- The University of Minnesota concluded that the supply of local food may be a larger barrier than the demand of local food and people were more concerned about freshness than they were about price.

Key Lane County findings include:

- Between 2002 and 2008, agricultural sales (including farm and forestry, nursery and livestock) increased 31%, from $106 million in 2002 to $140 million in 2008.
- In 2009, the saturated grass seed market and the collapse in the housing market brought sales down 18% in Lane County in 2009 to $115 million in sales.
- The Willamette Valley has nearly 1,500 grass seed farms: however it was only introduced to the valley as a crop in the 1920s.
- Since the 1920s, grass seed has replaced many of the traditionally grown food crops in the valley, particularly wheat (see figure below).
- The near-term outlook for recovery in the non-food crop market is not good because new housing starts drive demand for grass seed. Willamette Valley farmers now have up to a two-year supply of stored grass seed.
- In 2007, Lane County had 150 nursery and greenhouse businesses, growing 850 acres, with gross sales of $133 million, up 135% from 2006.
- Since the 2007 peak of $1 billion, nursery sales fell to $820 million in 2008 (nearly 17%) and many growers have gone bankrupt.
- Between 2007 and 2009, wheat sales increased by 87% in Lane County and some farmers are now turning to wheat due to increased demand caused by poor crop yield in other parts of the world.
- The local food industry accounted for over 6% of the jobs in Lane County in 2009.
- Local food production supports many different industries, including producers, distribution and transportation centers, food processors, storage facilities and grocery stores.
- In 2007, food crops were 44% of the county's agriculture sales, bringing over $34 million into the local economy. Livestock and dairy had the largest sales, followed by miscellaneous vegetables (15% of sales) and nuts (12%).
- Consistent with the decline in non-food crops, sale of food crops increased by 54% since 2007, yielding over $36 million in the county. While livestock decreased in this time, tomatoes, miscellaneous vegetables and grain all increased.
- When Agripac (a grower's cooperative processing food from the valley) went out of business in 2000, many Lane County farmers stopped producing food.
- In 2009, Lane County had 55 food manufacturing businesses, employing 1,498 people. However, these processors don't always source local ingredients. Interviewees are interested in using local products, but quality, price and capacity issues are a barrier.
- In 2009, there were 11 warehousing and storage establishments (not necessarily for food), employing 120 people. Anecdotally, this is down significantly from the food

storage that existed in the first part of the 20th century, when Lane County primarily served the local market.

- In 2009, there were 41 food distribution businesses operating at various scales (local, regional, national), employing 793 people.
- Chain supermarkets generate between $24 million and $39 million in produce sales each year.
- Local produce accounts for roughly 3% of produce sales in at Fred Meyer and Safeway stores in Eugene and Springfield.
- School districts in Lane County could potentially spend $22.7 million on local food annually.
- The University of Oregon serves approximately 9,000 meals/day and the annual food purchasing budget is almost $6.5 million, about 20% of this budget is spent on local foods.
- Other institutions with potential for local food purchasing include hospitals, prisons and more.
- Table I below estimates the current locally produced supply of each crop and compares it with the projected demand for consumption in Lane County. Not surprisingly, the results suggest that considerable sales leakage exists for all of the crops.

Table I. Lane County Focus Crop Supply and Demand (2007)

Crop	Supply (lb)	Demand (lb)	Variance (lb) (Supply-Demand)
Wheat	9,180,000	48,015,989	-38,835,989
Tomatoes	5,850,000	30,944,410	-25,094,410
Salad Greens	313,600	5,945,499	-5,631,899
Apples	5,304,000	17,349,731	-12,045,731
Winter Squash	450,000	1,836,673	-1,386,673

Source: "Commodity Data Sheets." *Oregon Agricultural Information Network.* Oregon State University, 2010. Web. 1 June, 2010. (supply of wheat, tomatoes and apples, sales per pound); "2007 Census of Agriculture: Oregon State and County Data." *2007 Census of Agriculture.* U.S. Department of Agriculture, Dec. 2009. Web. 1 June 2010. (supply of winter squash and pumpkins and salad greens, sales per pound); "Food Availability (Per Capita) Data System – 2007 data." Economic Research Service. U.S. Department of Agriculture, 16 Feb. 2010. Web. 1 June 2010. (demand for all crops)

Sacramento Area Council of Governments. ***Sacramento Region Local Market Assessment.*** **Http://www.sacog.org/rucs/wiki/index.php/Sacramento_Region_Local_Market_Assessment.** The Sacramento Area Council of Governments (SACOG) convened a Rural-Urban Connections Strategy (RUCS) project to better understand the opportunities for local food markets as well as agri-tourism. The RUCS team is working with a local market and agri-tourism working group to better understand the challenges and opportunities for a local food system and its interactions with land use policies, land supply, regulations, labor, water and other food system factors.

Total food production by county is compared to food consumption. This data is further broken down into product-specific production and consumption. These imbalances are analyzed to identify local market opportunities. The following table shows consumption as a percent of production in the SACOG area.

TABLE 1.2:
Annual SACOG Region Consumption & Production Estimates by Food Group (in tons)

	Production	SACOG Consumption	
Food Group	SACOG Region Production	Max SACOG Consumption Estimate (tons)	Consumption as % of Production
Fruits	487,672	407,041	83%
Vegetables	1,812,834	403,561	22%
Protein	49,204	620,975	1262%
Milk	224,367	330,873	147%
Grains	760,320	185,441	24%
Nuts, Oils, Herbs	66,941	110,639	165%
Sugars*	43	158,737	369156%
Total	**3,401,381**	**2,217,267**	**65%**

* Ag Commissioner production data only includes honey, not other sugars

Source: USDA/Economic Research Service; County Agriculture Commissioners
Note: For this food group analysis, the Loss-Adjusted Food Availability Primary Weight is consistently the largest estimate, and has been used as the "Maximum SF Consumption Estimate". When estimated commodity-by-commodity, the Primary Weight is not always the largest estimate.

Economic impacts of agri-tourism include:

- Agri-tourism is a key element of the SACOG region's food system, with 450 operations, including well established brands, regions and events. More data is required to estimate economic benefit, however in El Dorado, Agriculture Commissioner Bill Stephans estimates that, according to standard economic multipliers, agri-tourism contributes $285 million of the region's $440 million in agriculture.
- The USDA has estimated that approximately 2.5% of farms nationwide receive income from agri-tourism operations, totaling about $955 million.
- A 2006 New Jersey study determined that agri-tourism generated $57.5 million in revenue for the state's farmers in 2006, part of the broader $37 billion tourism industry.
- The research also found that for every dollar in agri-tourism sales generated on a New Jersey farm, 58 cents of additional sales are generated in a wide range of other allied businesses, resulting in an additional $33 million in revenue.
- One practitioner provided anecdotal evidence of this kind of multiplier effect in the SACOG region. Wayne Bishop mentioned that restaurants in the nearby town of Wheatland tell him that they experience a peak in customers during the month of October, when Bishop's Pumpkin Patch is drawing thousands of out-of-town tourists each weekend.
- The 2006 New Jersey study also found that 52% of farms earned at least half of their farm income from agri-tourism and 19% of farms reporting agri-tourism did not earn any revenue from agri-tourism activities, finding value in the opportunity to engage in interactions with the public that promote awareness, appreciation and understanding of agriculture.
- Of farms involved in agri-tourism, the largest farms – those with at least 1,000 acres – have the highest per farm median recreational income. Medium-sized farms – those with

250-299 acres – have the smallest recreational income. There are some place-based variables to note, including the farm's distance to a city with a population of at least 10,000. The greater the distance to such a city, the greater the likelihood of a farm's participation in agri-tourism.

- On-farm profitability statistics on agri-tourism can be difficult to gather for a few reasons. First, agri-tourism operations tend to be one of many activities taking place on-farm and are seldom tracked separately. Secondly, some farmers are reluctant to admit revenues generated from such activities (or revenues in general). The Small Farm Center at UC Davis is attempting to address the profitability and economics of agri-tourism in a statewide survey conducted in January, 2009.

The regional food distribution system is evaluated, considering the needs of small- to medium-producers with the goal of reducing "food miles" of travel.

Limited but growing consumer demand for local food was cited as an opportunity and a challenge. Other challenges and opportunities are identified, including:

- Education gaps and opportunities for consumers.
- Helping farmers find the right niche, e.g. organic, ethnic, small or specialty farmer.
- Creating new distribution and processing infrastructure.
- Increasing urban residents' connection to rural lands, farming and local food products.
- Incorporating agri-tourism as a source for increased income as well as a way to increase demand for local products, as documented in other states.
- Regulatory challenges such as complicated paperwork and licensing requirements, unclear regulatory processes and frustration with regulations that are one-size-fits-all and skewed to large size farms.
- Regulatory opportunities, such as developing land use ordinances to help facilitate the success of agri-tourism operations ("Ranch Marketing Ordinance" and "Winery Ordinance").
- Land use issues such as: subdivision of agricultural lands for development; restrictive zoning; traffic concerns with agri-tourism; water cost and reliability.
- Labor issues, e.g. farmers don't have the necessary skill sets, infrastructure or employee base to incorporate agri-tourism; dwindling numbers of "next-generation" farmers/children had no interest in taking over farm; diminished profitability for family farms; and finding adequate labor during harvest times, especially for smaller farms.

The study offers suggestions for how to overcome obstacles to expanding local food in the regional market, such as:

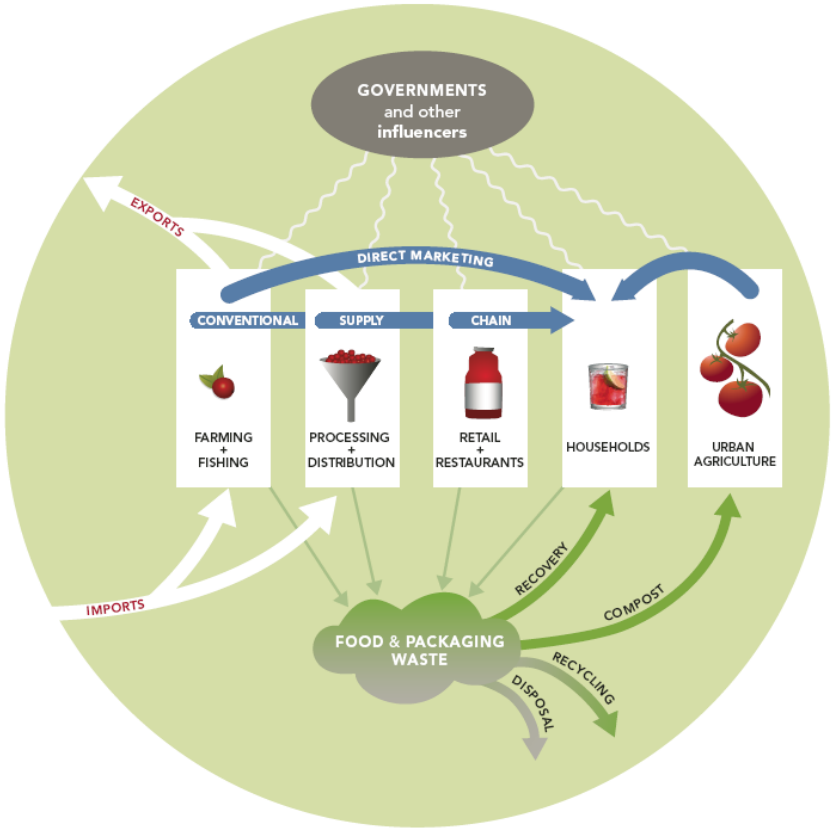
- Obstacles for farmers, e.g. working with distributors, grocery stores, restaurants, direct consumer sales, typical small business issues.
- Obstacles for distributors, e.g. product availability and greater coordination between small farmers.
- Obstacles for grocery stores, e.g. local farms need to fit grocery store needs, in-store realities.
- Challenges for farm-to-institution programs.
- Policy improvements at the state and federal level, county ordinances and complementary land uses.

Metro Vancouver, February 2011. ***Regional Food System Strategy.***
In 2008, the Metro Vancouver Board initiated a Regional Food System Strategy as part of its commitment to make a sustainable region. This Regional Food System Strategy is a policy document intended to be "a first step in creating a collaborative approach to sustainable, resilient and healthy food system that will contribute to the well-being of all residents and the economic prosperity of the region while conserving our ecological legacy."

The strategy includes the following vision statement:
Metro Vancouver seeks to achieve what humanity aspires to on a global basis – the highest quality of life embracing cultural vitality, economic prosperity, social justice and compassion, all nurtured in and by a beautiful and healthy natural environment. We will achieve this vision by embracing and applying the principles of sustainability, not least of which is an unshakeable commitment to the well-being of current and future generations and the health of our planet, in everything we do. As we share our efforts in achieving this vision, we are confident that the inspiration and mutual learning we gain will become vital ingredients in our hopes for a sustainable common future.

This vision is illustrated by the following graphic:

Figure 2 Diagram of a Regional Food System



The Vancouver Metro area has policies intended to protect land for agriculture. To stem the tide of the loss of farmland, the British Columbian government created the Agricultural Land Reserve (ALR) in 1973. The objective of the ALR is to protect farmland in perpetuity. This visionary policy was critically important in slowing the conversion of farmland. The creation of

the ALR has not eliminated the pressures to convert farmland to other uses but it has certainly diminished the rate of conversion.

The following challenges are cited for the regional agricultural system:

- It is a challenge to make an adequate living as a farmer in Metro Vancouver.
- The current level of agricultural production in the region may not be sufficient to support a range of agricultural related businesses including processing.
- Farmland has been attractive investment for speculators who are not interested in farming but hope to eventually remove the land from ALR and convert it to other uses.
- The high cost of farmland in Metro Vancouver also constrains farmers from expanding their operations as well as practicing crop rotation important for maintaining soil quality.
- Land prices are also a significant barrier to the entry of new and young farmers to the industry.
- Operating a farm that abuts a residential neighborhood or other urban land uses introduces conflicts and new expenses.
- Low financial returns and small size of farming operations in the region mean that the ability within the farming sector to invest in research and development is low.

The plan states: "If growing more local food is an important collective objective, then governments and academic institutions must help to fill the gaps." It identifies actors, roles, responsibilities and relevant plans and policies for implementing the strategy. It includes goals, strategies, sample actions and performance measures.

Meter, Ken, Crossroads Resource Center, March 30, 2011, *Ohio's Food Systems—Farms at the Heath of it All.*(Revisit this report for Literature Review #2)
Building on previous research (*Mapping the Minnesota Food Industry*), this report is an economic analysis of food systems across Ohio, focusing on what is emergent in the state's food system. Key opportunities include the growth of community-based food businesses, clusters, and emerging business owners. The framing research question is: "What initiatives are Ohioans creating in an effort to transform the Ohio food system so it becomes more responsive to the vision and needs of state residents?"

Data sources include:

- Interviews with food system practitioners (farmers, food buyers, procesors, food retailers, distributors, extension agents, and researchers) in as many parts of the state as possible.
- A review of historical literature focusing on *History of Agriculture in Ohio to 1880* and selected local histories in academic and historical libraries.
- Public sources, such as the Bureau of Economic Analysis, US Census, Census of Agriculture, Centers for Disease Control and Bureau of Labor Statistics.

Key findings include:

- Clusters of community-based food businesses are forming across Ohio.
- These clusters create jobs, but do even more; they create collaborative groups of new business owners.
- Food is a major industry in Ohio, yet the industry has suffered some erosion in recent years, despite Ohio's rising personal income and increased food consumption.

- The most sustained rapid growth in farm sales involves direct food sales from farmers to consumers.
- The key "lever" driving change in the Ohio food system is commerce based on relationships of mutual trust, through clusters of firms that grow in concert with each other to create both resilience and stability for Ohio.
- Emergent business networks are often led by people who hold significant experience in low-income communities or developing nations.
- The distinction between for-profit and nonprofit enterprise is becoming less rigid; both types of firms seek subsidies.
- Public bodies hold a clear responsibility to support the growth of local-foods business clusters by constructing supportive infrastructure.
- Ohio agriculture (and related public policy) has long been focused on distant markets, rather than state consumers, to the detriment of the state economy.
- $30 billion flows away from Ohio each year due to the structure of the farm and food economy; recapturing these dollars would create significant economic opportunities.
- The prevailing food system is deeply dependent upon fossil fuels, which may become prohibitively expensive, creating exceptional vulnerability for the Ohio food supply.

Delaware Valley Regional Planning Commission, January 2010. ***Greater Philadelphia Food System Study.***
This study envisions and prepares for a sustainable future amidst energy and climate uncertainties. It examines agricultural resources, food distribution and the food economy in Greater Philadelphia. This study includes a rigorous food system stakeholder analysis (pp 136 – 188).

Agricultural Resources: Using data from the Census of Agriculture, National Resource Conservation Services, and other sources, this chapter looks at the characteristics of the 100-Mile Foodshed's agricultural industry (supply). The following graphic shows the 100-mile Foodshed's capacity to feed the local population on existing farmable lands in terms of supply and demand:

FIGURE 1.21
Greater Philadelphia's Agricultural Land Needs

DEMAND		TOTAL AGRICULTURAL LAND NEEDS PER CAPITA (ACRES)*		TOTAL AGRICULTURAL LAND NEEDS FOR GREATER PHILADELPHIA (ACRES)	SUPPLY DVRPC REGION 2007 TOTAL CROPLAND AND PASTURELAND (ACRES)**	DEFICIT (ACRES)
DVRPC REGION 2005 POPULATION (PERSONS)						
5,519,051	X	1.23	=	6,788,433	379,481	-6,408,952
DEMAND		**TOTAL AGRICULTURAL LAND NEEDS PER CAPITA (ACRES)***		**TOTAL AGRICULTURAL LAND NEEDS FOR THE 100-MILE FOODSHED (ACRES)**	**SUPPLY 100-MILE FOODSHED 2007 TOTAL CROPLAND AND PASTURELAND (ACRES)****	**DEFICIT (ACRES)**
100-MILE FOODSHED 2003 POPULATION (PERSONS)						
30,954,544	X	1.23	=	38,074,089	4,127,348	-33,946,741

*Assumes a diet that meets recommended total caloric value of 2,000 calories per person, and includes about nine ounces of cooked meat and eggs and 91 grams of fat.
**Excludes "woodland not pastured" and "land in farmsteads, buildings, etc."

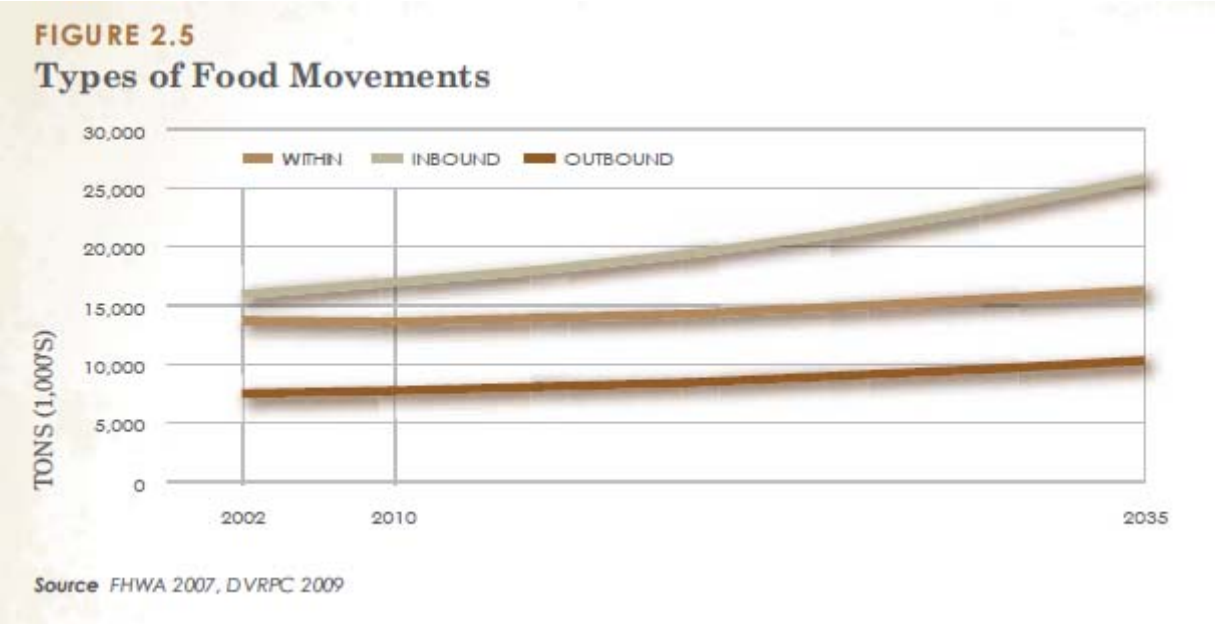
Source USDA 2009, DVRPC 2009

Most significant agricultural resources findings include:
- While many people lament the 100-Mile Foodshed's short growing season, local producers take advantage of the temperate climate, reliable rainfall, fertile soils, and groundwater resources and are employing season extension techniques. These natural

resources, combined with adaptable agricultural practices, are obvious competitive advantages and will become more important as other geographic areas grapple with water shortages, diminishing soil fertility, and the increased costs of fossil fuels.

- Greater Philadelphia's 100-Mile Foodshed is the second most densely populated area in the United States, second only to the overlapping 100- Mile Foodshed of New York City. However, the area retains about 27% of its land area in agriculture, thanks to land preservation and a history and culture of farming and food.
- The population density also makes land more expensive. All but one county has higher farmland values than the national average value of $1,892 per acre. The 100-Mile Foodshed's land is, on average, 342% more expensive.
- Because of the 400-year old Colonial history and culture of farming, 100-Mile Foodshed farms are three times smaller than the average American farm.
- While income from agricultural sales increased by 43.4% between 2002 and 2007 in the 100-Mile Foodshed, production expenses increased at the same rate, by 43.7%. Profitable farmers are working with slim margins.
- Even though the 100-Mile Foodshed is densely populated and only 27% of the land area is devoted to agriculture, a surprisingly high proportion of land is used to raise livestock.
- Nearly one-half (46.7%) of all 100-Mile Foodshed farms report raising livestock primarily (by NAICS). Another 12.9% of farms report primarily growing oil and grains, often used to feed livestock. This is surprising because livestock requires more land and land is in short supply in a densely populated area.
- Direct sales are low, accounting for only 1.4% of all agricultural sales in the 100-Mile Foodshed. This suggests that most local food is getting to market through conventional distribution channels, like produce wholesalers, meat processors and other food processors. Those counties farther away from the Philadelphia and New York metropolitan areas grow considerably more fruits and vegetables for local processors, such as Birds Eye or Campbell's Soups.

Food Distribution: Analyzes data (primarily from FHWA's FAF database) related to how food travels through the country and to Greater Philadelphia. Identifies the region's largest trading partners, competitive advantages and exports. Case studies are used to track food items from the point of production to the point of sale. The following graphic illustrates types of food movements in the 100-mile foodshed, specifically, the amount of food in tons that moves within, inbound and outbound from the area:



Most significant distribution findings:

- Most food produced within the region is consumed within the region, as evidenced by the low outbound movements. This further suggests that Greater Philadelphia's demand for local food outweighs the 100-Mile Foodshed's local supply.
- Forecasted demand, based on 2002 data, will continue to exceed local supply and the region will rely more heavily on domestic trade and international imports. These forecasts can, and most likely will, shift based on energy costs, policy changes and widespread consumer choices.

The Food Economy: Explores the metropolitan area's demand for food and the food economy's various sectors, including food and beverage manufacturing, food wholesaling, food retailers and food services, among others. Some significant findings include:

- In spite of how inexpensive food is in this country relative to other expenses, 11% of American households suffer from food insecurity, however the Philadelphia region has a lower than average SNAP (Supplemental Nutrition Assistance Program) participation, except for Philadelphia County, which had nearly double the participation rate.
- Prices of food and beverages have increased at a much slower rate in the Philadelphia region than in the United States or other northeastern MSAs. As a result, the average household in Greater Philadelphia spends just $5,600 a year on food, compared to New York ($7,000) and Washington DC ($7,500), although food makes up the same share (11-12%) of total household expenses in these and other northeastern MSAs, and the U.S.
- The food economy (including food retail, wholesale, processing, transportation and storage) constitute 11% of establishments and 11% of employees in Greater Philadelphia, however together they contribute a total of just 8% of the region's total economic output.
- Emerging economic opportunities include: growth in limited-service restaurants and specialty food store, regional strength in food service contractors and rising interest in locally and sustainably produced foods.

Overall findings include:

- Development and Land Use. Sprawling, low-density development threatens the viability of agriculture close to population centers and the retention of some of the most valuable soils in the United States.
- Cheap Food and Unhealthy Food. Low prices threaten the viability of farming, especially for food-producing farmers. The American diet causes health problems and there is a link between levels of income, access to healthy foods and the incidence of diet-related diseases.
- Capacity and Competition. The 100-Mile Foodshed is not sufficient to meet consumer demand. Producers often distribute their products to larger markets, thus increasing the food supply deficit. All U.S. cities are dependent on national and global imports.
- Consolidation in the Food Economy. The global food system is dominated by an increasingly consolidated pool of large, private actors with growing influence over consumers and regulators. This consolidation makes it difficult to track supply chains.
- Legislating and Planning for Change. Policies and planning processes can simultaneously create barriers and opportunities.

Unger, Serena and Wooten, Heather, May 24, 2006. ***A Food Systems Assessment for Oakland, CA: Toward a Sustainable Food Plan.*** **Oakland Mayor's Office of Sustainability and University of California Berkeley, Department of City and Regional Planning.**
This baseline analysis is intended to initiate discussion among Oakland City policymakers, staff and community members to consider the impact of the City's food system on areas of public concern. It explores how systems of production, distribution, processing, consumption and waste, as well as city planning and policymaking, could support the objective of having at least 30% of the City's food needs sourced from within the city and immediate region. A sample of recommendations includes:

Food Security

- Increase access to local foods for residents in federal and emergency food programs.
- Work with corner stores to transition stock from fortified alcohol and junk food to healthful and profitable products.
- Food waste recovery is an important part of the sustainable food system, because it "closes the loop."

Food Production

- Conduct a comprehensive review of current policy and zoning obstacles to urban food production.
- Adopt a plan, goals and timeline for how Oakland will produce a determined percent of its food consumption.
- Implement strategies to increase food waste diversion.

Economic Development

- The City of Oakland has a significant food wholesaling and processing cluster, with approximately 4,000 people employed in the "Food Distribution and Processing" cluster, or 4.9%of payroll employees in Oakland's "target industry clusters" and 2.2% of total employee payrolls.
- Provide assistance with location and expansion and streamlining fees and permitting processes for urban food production and processing.

- Incorporate food processing activities into wholesale market development, specifically providing job training and entrepreneurial skills that benefit low-skill or low-income workers.
- There is currently substantial untapped food retail demand in Oakland neighborhoods, especially those neighborhoods currently underserved by full-service grocery and that rely on small food retail stores with few fresh offerings.
- Approximately 85% of Oakland food retail stores are less than 3,000 square feet, suggesting that food retail policy should address small stores when attempting to improve food security and increase local food consumption.
- "Corner store conversions" offer one model for increasing fresh, nutritious produce in all neighborhoods, but particularly in low-income and underserved communities. Existing economic development tools, including Neighborhood Commercial Revitalization and Redevelopment incentives, should be employed in encouraging food retail improvements through the use of a new "Food and Façade Improvement Program."
- Additional incentives, such as Food Retail Enterprise Zones and special certification programs like the current Green Business program could be implemented to further advance sustainable food retail goals.
- Food waste is currently the largest single material in the Oakland waste stream (i.e., waste that goes to land fills rather than being composted or recycled in some other way), representing 12%of all waste in Oakland. Oakland has initiated commercial and residential food scrap recovery programs to begin to increase diversion and recycling of food waste. Commercial food scrap recovery is excluded from the Oakland exclusive garbage franchise with Waste Management of Alameda County and is collected for profit on an open market. In 2005, 12,000 tons of commercial food scraps were diverted from the waste stream. The residential food scrap and yard trimmings recycling program, known as the "Green Cart," diverted 34,000 tons.

Agricultural Preservation

- Adopt a local food ordinance that requires City government to purchase locally-produced and organic food (sample policy available).
- Encourage wholesale produce companies to procure goods from regional and organic farms.

Food Literacy

- Develop a healthy living and urban gardening public relations and educational campaign.
- Support and encourage more nutrition education in youth, adult and senior programs funded or administered by the City.

Center for Environmental Farming Systems, 2010. ***From Farm to Fork: A Guide to Building North Carolina's Sustainable Food Economy.***

North Carolina has launched an initiative to support the development of local and regional food systems. It seeks to be a leader in this field and cites the following assets:

- a diverse agricultural economy;
- a superior educational system;
- an adaptable workforce; and
- an expanding and diverse set of dedicated partners.

The goal is to build a sustainable food system that strives to be economically viable, environmentally sound and socially just. The report includes goals and strategies as well as actions for households and individuals to take.

Meter, Ken, June 3, 2010. ***Highlights of a Data Compilation.*** **For Treasure Valley Food Coalition and Oregon Food Bank.**
This study examined data from the Greater Treasure Valley region, a nine-county region in Idaho and eastern Oregon. One key trend in the Greater Treasure Valley region has been an increase in corporate farming. Over the years 1969 to 2008, the percentage of farm income earned by corporate farms, as a percentage of farm proprietor income, rose from 10% to 55%.

Farmers gain $221 million each year producing food commodities, spending $600 million buying inputs from external suppliers, for a net outflow of $400 million from the region's economy. Meanwhile, consumers spend more than $1.7 billion buying food from outside. When this is added to farm production losses, total loss to the region is $2 billion of potential wealth each year. This loss amounts to more than the value of all commodities raised in the region.

San Francisco Food Alliance, 2005. ***2005 San Francisco Collaborative Food System Assessment.*** **San Francisco Food Systems, The San Francisco Foundation.**
This is a comprehensive citywide food assessment, accounting for multiple sectors of the food system, including the broad range of activities involved in producing, distributing, consuming (including food retail, federal food assistance and charitable food programs) and recycling food. Its purpose is to provide a resource to help drive food related policy and decision-making. It states, "All people have a stake in how food is produced, distributed, consumed and recycled since all of our communities are intimately connected to issues of agriculture, food safety/sanitation, hunger and food accessibility, environmental sustainability and stewardship, nutrition and public health. Where our food comes from, how it is grown and consumed and subsequently recycled depends on the many contextual systems that address and meet the many challenges we face in the contemporary food system."

Key findings include:

- Production. In San Francisco, small scale production of fruits, vegetables and limited processed products occurs through urban farms, backyard, community and school gardens, as well as in nurseries and greenhouses.
    - Clear and consistent information is not publicly available around the management, upkeep, and sustainability of individual gardens, and overall support (e.g. staff, supplies, volunteers) for each community and school garden varies considerably.
    - Within San Francisco County's 31,360 acres of land, there are several large green spaces and 59 community gardens.
    - Over 800 community gardening plots are tended by nearly 700 community gardeners. Some areas of the city located far from open spaces, such as the Mission and Castro/Upper Market, tend to have a higher demand for community garden plots than can be met by the current supply.
    - Within the San Francisco Unified School District (SFUSD), about 25% of the 119 schools currently have a school garden. Community and educational gardens range in size from a few planter boxes up to a few acres. In 2003, San Francisco voters passed a school bond which included $2 million specifically earmarked for the

greening of 17 school yards in SFUSD. Educational school gardens have also recently been incorporated into the SFUSD Facilities and Master Plan.

- Distribution. In addition to the conventional wholesale food distribution model, there are several alternative distribution pathways that focus on getting food from a farmer directly to a household, private business or public institution. Examples include CSAs, institutional purchasing and farm to restaurant programs. These pathways have been established in order to help consumers get fresher food and develop relationships with the farmer and to help farmers get a higher percentage of the food's ultimate purchase price. Shorter distribution pathways are also supported because they are less resource-intensive and less polluting.
- Consumption – retail. Retail food stores are the primary way that most people acquire food, from supermarkets, grocery stores and convenience stores to bakeries and fruit and vegetable markets. There are 1,488 retail food stores in the city, including 55 supermarkets. The city's 11 farmers' markets provide another venue for food retail where food is sold directly from the farmer or producer. Approximately 250 farms sell products at the local markets.

Portland Metro Area Data and Case Studies

Exploring the Clark County Food System (2008)
http://www.stepstoahealthierclarkco.org/pdfs/Clark_County_Food_System_Report.pdf
This community food assessment draws on quantitative data about agriculture, personal and community health, resource management and food access, but also reports on a qualitative study in two Clark County neighborhoods on food access. This is a good model for community food assessments and also a strong local example to which other efforts can be compared.

The Clark County economic assessment includes data on the following topics:

- Section I: Profile of Clark County Farmers
  - Age of Principal Operator
  - Occupation Farm Education
  - Harvested Cropland in Full Ownership
- Section II: Land Base in Clark County
  - Acres in Farm Land & Agriculture Zones
  - Size of Farms
  - Type of Use on Land in Farms
  - Current Use Taxation Program
  - Natural Resource and Crop Land Conversion
- Section III: Agricultural Market in Clark County
  - Crop Diversity and Value of Sales
  - Fruit & Vegetable Diversity and Value of Sales
  - Livestock Diversity and Value of Sales
  - Direct Marketing
  - Case Study: CSA Model for Small Farm Direct
  - Further Considerations
- Section IV: Resource Management
  - Prime Agriculture Soils
  - Water Rights
  - Sheet and Rill Erosion

- Third Party Certification
- Food Waste
- Food Waste Diversion
- Further Considerations

Multnomah County Office of Sustainability, December 2010. ***Multnomah County Food Action Plan: Grow and Thrive 2025, Executive Summary.***
This Action Plan identifies key statistics about local food and public health in Multnomah County and provides a definition of sustainable food. The plan identifies five food system principles and defines goals, actions and indicators in four areas: local food, healthy eating, social equity and economic vitality.

Institute of Portland Metropolitan Studies, Sheila Martin et al., October 2008. ***Planting Prosperity and Harvesting Health: Trade-offs and Sustainability in the Oregon-Washington Regional Food System.***
This report identifies trends in the sustainable food system in the bi-state Portland Metro region based on stakeholder input and data review. The analysis includes nine stakeholder-defined goals for the regional food system that also serve as measures of how sustainable a food system is. The sustainability assessment considers a variety of factors, outlined below.

Land Use
- The conversion of farmland threatens land available for agricultural production.
- Soils are affected by urbanization and suburbanization.
- Rising land values for farming vs. other uses make it more likely that farmers will sell their land. Farmers' incomes are particularly volatile from year to year.

Water
- Food system uses affect water available for competing uses.
- Water quality issues can affect irrigated farming.
- Demand for water has grown over time.

Energy
- Rising energy prices affect the cost of agricultural products.
- Using agricultural land to produce biofuel inputs affects the cost of food products.

Human Capital
- The farming workforce is aging as well as diversifying.
- Farm employment is affected by the ability of farmers to make a living wage.
- Farm employment has fallen as a share of total employment.

Capital and Investment
- The increased use of machinery and government subsidies has led to larger-scale farms emerging over the last century.
- The number of very large and very small farms has increased, while medium-sized farms have declined.
- Concentration means a larger share of farm products are produced by fewer farms.
- Most farms in Oregon are owned by families or individuals.

- The food processing industry has experienced consolidation over the past few decades. The closing of local processing plants leaves small and medium farmers without a market for their crops.

Consumer Choices and Health

- Consumers spend about 11% of their annual income on food and over 10% of that is on fruits and vegetables.
- Farmers only capture 24-27% of the value of retail price of fruit and vegetables.
- Many farmers are increasing direct marketing to consumers (CSAs, U-Pick, farmers markets, stands) to increase this share.
- Food deserts aren't common in the Portland metro area.
- Food insecurity, public health and nutrition and food safety are other measures of a sustainable food system.

The conclusions section of this report includes metrics on the status of sustainability indicators, where available, and key recommendations from stakeholders. Detailed indicators are available in Appendix A and Appendix C includes specific action items for follow up.

Weigand, Elizabeth, Master's Project Proposal, May 27, 2009. ***Land Use Planning, Local Food & Sustainable Communities: Using a Form-Based Code to Support Agricultural Urbanism in Damascus, Oregon.***
This proposal introduces the idea of "agricultural urbanism," which considers agriculture and food production in the context of planning for sustainable urban areas, focused on shifting towards localized production systems. This project will focus on urban family farms inside the Damascus UGB, specifically preserving small-scale agricultural operations that can serve as production centers for urban areas.

Giombolini, Katy J. et al, Agricultural and Human Values, Posted online July 8, 2010.*Testing the Local Reality: Does the Willamette Valley growing region produce enough to meet the needs of the local population? A comparison of agricultural production and recommended dietary requirements.*
This study considers whether eating locally is feasible based on local agricultural production in the Willamette Valley. Findings indicate that current production does not meet the dietary needs of inhabitants for any of the USDA's six food groups. In the most recent analysis (2008) the region met the following share of dietary needs: 67% of grains, 10% of vegetables, 24% of fruits, 59%of dairy, 58% of meat and beans and 0% of oil. The Willamette Valley in this instance consisted of 10 counties.

This analysis is intended to be a model that can be replicated by community organizations without easily-available data and simple methods.

It concludes that although current production does not produce enough food to feed the local population, this does not mean that it cannot do so. Large percentages of locally produced crops are being exported and a good deal of agricultural land is being dedicated to non-edible crops. This report suggests that there is potential financial benefit to Willamette Valley growers. They identify next steps for creating a locally-based food system.

Clackamas County Soil and Water Conservation District, 2008. ***Clackamas County Agriculture and Natural Resources…The "Other" Traded Sector.*** **PowerPoint presentation.**

This presentation highlights key statistics on Oregon and Clackamas County's Agriculture and Natural Resources sectors and their contribution to the region's economic vitality. Findings include:

- Agriculture and food processing are the second-biggest contributors to Oregon's economy after high tech.
- Statewide, the amount of farmland has declined by 18.7% over the last 50 years.
- Clackamas is the second-largest agricultural county in the state, including:
  - 1879 square miles;
  - 215,210 acres of agricultural land;
  - 250,000 acres of forest land;
  - 5 major watersheds; and
  - 23 diverse commodities.
- It ranks first in several areas, including Christmas trees and organic farms.
- The Clackamas County Green Ribbon committee identified four core areas: forestry and ecosystems, agriculture, food processing and forest products.
- Metro's New Look ranked agricultural lands for long-term viability. It classified land as one of three types: foundation, important or conflicted. Conflicted lands are generally those on the urban fringe.

The presentation also presents the factors used by Metro in its Urban and Rural Reserves process as well as USDA Suitability Factors.

Workforce Investment Council of Clackamas County, July 2008. ***Clackamas County Demand-Side Study of Business and Institutional Buyers for Locally-Grown Food.***
Clackamas County wants to take advantage of the growing interest in locally-grown food to support farmers in the county. This study was conducted to assess the demand for locally grown produce among both institutional and private sector businesses and to explore their interest in purchasing produce directly from local farmers. Given the high number of small farms in the county, added attention was given to opportunities that would benefit small to medium-size farms and allow Clackamas County farmers to sell produce to these organizations, either individually or as a group.

This study consists of 31 interviews conducted with local food and sustainability leaders, industry experts, food service managers, directors and produce buyers from retail and wholesale businesses and institutions.

Key findings include:

- Demand for local produce is growing.
- Business and institutional foodservice customers have needs that a farmer must be willing to accommodate in order to do business.
- Pricing is a key driver in produce purchasing decisions.
- Consistent, high quality product is important.
- Food safety is an issue on food buyers' minds.
- Some customer segments are more promising than others, but there is a wide variety of business and institutional customers buying local produce.
- Farm cooperatives offer a way for local farmers to band together to address a common need.
- Food processing is a competitive business bringing new challenges.

- Support for local produce buying initiatives is growing.

Select conclusions and recommendations relevant to the SARE project are:

- Networking will benefit farmers.
- A quick-reference guide to Clackamas County farms is one way to build awareness of local farms and their products.
- Workshops to assist farmers interested in pursuing the business and institutional market may be useful.
- Clackamas County farmers might benefit from some form of farm cooperative.
- While specialty food processing offers opportunity, it requires a significant investment of time and financial resources.
- Farmers may be able to increase their profitability by raising a diverse set of crops.

Clackamas County Economic Development Commission, June 2007. ***The Green Economy: Agriculture, Natural Resources and Sustainable Development.***

The goal of this report is to develop a "roadmap" for Clackamas County's Agriculture/Natural Resources/Sustainability Economic Development strategy. The County is uniquely positioned to become a model for how urban and rural areas can collaborate to maximize their collective competitive advantage in a sustainable fashion.

Key assets and challenges sited include the following:

- The County has an extensive, healthy and productive biomass base for agricultural and forestry products – partially from forest thinning.
- The County is water-rich.
- Clackamas County has 118 miles of streams in National Wild and Scenic designation.
- Agriculture and forest products are currently traded export-driven sectors bringing external capital to the County.
- The County is an agricultural powerhouse:
    - Ranked first in Oregon for the sale of nursery crops and Christmas trees.
    - Ranked second in the state in all farm sales with $400 million in annual revenue.
    - First in the number of farms among state counties with 3,700 farms.
    - First in the number of farms (63) in certified organic production in the state, the majority of which are less than 50 acres in size.
- 215,210 acres are actively farmed.
- Most farms are small – 50% are less than 10 acres, and only 25% are larger than 21 acres in size.
- Agriculture contributes 24,085 jobs; $23,785 average annual wage; and $573+ million in annual payroll to the County.
- Agriculture contributes over $1 billion in total industry output per year to the Clackamas County economy.
- Clackamas County has 955 food processing employees making over $31.4 million in wages per year.
- The forestry and wood products industries account for 4,368 jobs, an average annual wage of $38,751 and over $169.3 million in wages per year. A 2.23 employment multiplier adds another 5,242 jobs and a 2.2 payroll multiplier adds over $377.5 million more to the forestry industry.

Of the report's four goals is to cultivate a vital Metropolitan Foodshed economy which will sustain the region and its population into the future. Relevant strategies and actions to support this goal include:

- Support expansion of Clackamas Community College educational programs to meet the needs of the agricultural industry, small farmers, organic food producers and nursery and Christmas tree industries.
- Expand the Portland/Multnomah Food Policy Council to the entire region or at least to Clackamas County.
- Update land use policies to provide long term protection of agriculture and timber lands based on the Metro's "New Look" Strategy.

Oregon Department of Agriculture, January 2007. ***Identification and Assessment of the Long-Term Commercial Viability of Metro Region Agricultural Lands.***
As part of its *New Look at Regional Choices,* Metro asked the Oregon Department of Agriculture (ODA) to inventory and assess the region's agricultural lands and to provide suggestions relating to policy directions that may be considered in protecting the region's agriculture industry.

General description: Metro (Multnomah, Clackamas and Washington Counties) agriculture is best described as richly diverse. Food, fuel, seed, fiber and flora crops can all be found in production within the region. Intensive and extensive agricultural practices are employed, as are dry land and irrigated crop production. Many of the attributes that are key to successful and sustainable agriculture can be found within the region. Excellent soils, moderate climate, water for irrigation, access to markets and an accessible transportation system are some of the examples of the key attributes.

The vast majority of soils found in the region are considered high-value farmland soils; a good percentage of those are also designated as prime farmland. Twenty percent of the state's prime farmland and 12% of the state's high-value farmland are located in the Metro region.

Agriculture is a key traded sector in Oregon, ranking 1st in the volume of exported products and 3rd in the value of exported products. Over 80% of this production left the state, with 40% leaving the country. Metro (jurisdiction) counties play a significant role in the state's agricultural production. In 2005 the value of production in the three counties was $714,547,000, nearly 17% of the state's total value of production. Clackamas County ranked 2nd and Washington County ranked 3rd in the state in overall farm and ranch sales. And it is easy to underestimate the value of Multnomah County. The smallest county in Oregon in terms of land area and the largest in terms of population, Multnomah County ranked 14th out of all 36 Oregon counties in farm sales.

Other quick facts:

- All three counties rank in the top five in terms of greenhouse and nursery production, the states number one ranked commodity. Metro counties account for over 50% of state production value.
- All three rank in the top five in the production of cranberries.
- Metro counties account for over 40% of the acreage in the state planted in small fruits and berries.

- Metro counties account for nearly 38% of the state sales of Christmas trees. Clackamas County ranks 1st, Washington County 6th.
- 60% of the Port of Portland's total export tonnage is agricultural products.
- Multnomah County leads Oregon in food processing with more than 22% of the payroll and 20% of the employees.

The larger metro study area includes Clackamas, Columbia, Marion, Multnomah, Washington and Yamhill counties. The area was divided into subareas and evaluated for various factors and land was classified as foundation, important or conflicted. Various data is presented for each of the 20 subareas. ODA concludes their report with a set of policy considerations related to the Urban and Rural Reserves process.

City of Portland Bureau of Planning and Sustainability, Fall 2009. ***Food Systems: Portland Plan Background Report.***
The City of Portland's Food Systems Existing Conditions Report represents the first attempt to characterize a wide range of food issues as part of the City's comprehensive planning efforts. It includes a summary of what is currently known about Portland's food system, conclusions from national studies about the impact and intersections between food, health and community design, and potential policy options the City could explore to support the food system. This work was conducted as part of the Portland Plan/Comprehensive Plan Update.

Relevant context, findings and policy considerations from this work are included below. Only pre-existing available data is used, so much of the data included is at the County level.

- There is growing demand for local, sustainably grown food. This is demonstrated in part by waiting lists for community garden plots (waiting list of over 1,300 people) and CSAs (100% of current capacity) as well as the popularity of farmer's markets (growth in two or three new markets/year).
- Portland's rising rates of obesity and diabetes represent two of our greatest health challenges.

City of Portland, Bureau of Planning and Sustainability, Fall 2009. ***Portland Plan Food Systems.***

<u>Direct Marketing</u>
Direct marketing, or the practice of selling directly by farmer to consumer, is a rapidly growing field in American agriculture. Direct market farms can be smaller-scale, even start-up operations as well as more established farming businesses. Some common faces of direct marketing include farmers markets, community-supported agriculture (CSA) operations, farm stands and U-pick operations and public markets. Some of these models are so new that little research has been done nationally or locally on their impacts. However, direct marketing still shows significant economic and social benefits to Portland, in addition to the health benefit of increasing access to healthful, local foods.

<u>Urban Agriculture</u>
This report provides context for urban agriculture in Oregon and Portland. Urban agriculture in Portland can be described broadly, incorporating the regional farm economy that contributes to food security and economic health; or more narrowly, referring to activities occurring primarily within the Urban Growth Boundary Oregon's land use system prioritizes development in urban areas and preservation of farm and forest land beyond urban areas. In

recent years, increased attention is being given to the importance of natural areas, open space and natural habitat within urban areas. Similar arguments for urban agriculture have begun to gain traction, especially in the current context of carbon emissions, high fuel costs and a down economy.

Urban agriculture advocates point to numerous benefits for enabling members of the public to grown their own food in cities and for supporting small, independent urban farms including reducing the distance to the market, educating urban residents about where food comes from and increasing resiliency to potential food shortages.

Institutional Purchasing

This report examines local existing conditions regarding the ability and desire of large institutions to buy local foods. Working with large institutions (e.g., governments, hospitals, universities, prisons and corporations) to buy organic, locally-grown or produced foods can have benefits for the nutritional value of the food and the amount of fossil fuels used to grow and transport it. Additionally, dollars directed towards supporting the regional food system stay in the local economy.

Barriers to seeing more institutions support the local food economy include:

- Food budgets have a very thin margin.
    - Large food service providers are able to determine prices in advance.
    - Some local governments are prohibited from favoring local products if they cost more. For example, government agencies in Oregon have the discretion to give up to a 10% premium for local food.
- Large food distributors offer a limited assortment of local products.
- Suppliers require vendors to carry a large liability insurance policy, creating a potential barrier for small producers.

Local conditions:

- A 2005 Multnomah County Corrections pilot project purchased fresh, in-season produce. The pilot led to the inclusion of sustainability criteria in their call for proposals for a five year food service contract. The County and the City of Portland both have policies directing the purchase of local goods when everything else is equal.
- 23% of Aramark (PSU's current provider) products are locally sourced (from Oregon or Washington).

Food Processing

This report examines the impact of the food processing industry on Oregon. Food processing in the U.S. is dominated by highly industrialized, larger-scale companies. Oregon has large companies like Con-Agra and Del Monte and smaller processors like Hood River Juice Co., Kettle Foods and Scenic Fruit Company.

In 2008, food manufacturing in Oregon added 1,800 jobs statewide, a 7.9%increase. This was the only manufacturing sector in Oregon to show growth during the same time period. Food processing is Oregon's third-largest industry, with $3.4 billion in annual revenues, 18,000 workers and a $542 million annual payroll.

More than 8,000 people in the Portland metro area are employed in the food manufacturing sector. Portland is home to the Northwest Food Processors Association (NWFPA), which has more than 450 member companies (processors and suppliers) including 86 food processors with nearly 200 production facilities throughout the Northwest (Oregon, Washington, Idaho). Its members are primarily fruit and vegetable processors but membership has expanded over the past several years to include seafood, dairy, bakeries, specialty and fresh-cut. NWFPA states that the Northwest food processing industry is a $17 billion industry which employs over 100,000 in Idaho, Oregon and Washington.

Barney & Worth, et al., November 2008. ***Growing Portland's Farmers Markets: Portland Farmers Markets/Direct-Market Economic Analysis.***
Portland's network of farmers markets are growing in number, customers, and sales. Portland's neighborhoods now hosts 18 farmers markets, with many more serving the metro region. Farmers market vendors sold $11.2 million worth of goods in 2007; this number continues to rise faster than population growth, indicating that farmers markets are gaining market share. The Hillsdale Farmers Market weekly market sales doubled to $70,000 between 2002 and 2007, and Hollywood Farmers Market doubled to $60,000 between 2000 and 2007. The total economic impact of Portland's network of farmers markets was estimated to be over $17 million in 2007; the markets produce more than 150 jobs with nearly $3.2 million in employee compensation.

Where do the farmers come from?
According to a recent study, half of all vendors at Portland neighborhood farmers markets travel 30 miles or less to arrive at market and over 90% of the food offered comes from within 100 miles; most of these vendors are located in the Willamette Valley. This differs from some other urban areas; in San Francisco, for example, dozens of farmers drive over 100 miles to reach the urban markets. The well-established farmers markets are generally at capacity for vendors, leaving new growers or farmers who want to explore direct marketing to go to newer, often lower-sale markets. Smaller vendors generally expect sales of around $300 per market day, versus $2,000 per day for more established and larger vendors.

Portland/Multnomah Food Policy Council, July, 2007. ***The Diggable City: Implementation Strategies and Recommendations.***
This report includes an inventory of city-owned lands that might be suitable for community gardens and other agricultural uses; provides a progress report on three pilot projects; outlines lessons learned and identifies recommendations for future urban agriculture program initiatives. The report indicates that relatively little city-owned land is available for agricultural uses. Land that is available often has a long-term purpose and not being considered for short-term uses. Community participation and support for projects on city-owned land are critical.

Recommendations include:

- Pursue urban agriculture partnerships with City bureaus.
- Expand the scope of potential properties by working with other public agencies.
- Integrate urban agriculture into City policies.

Barriers and Opportunities

Community Planning Workshop, University of Oregon, September 2010. ***Lane County Local Food Market Analysis.***

Revisit the implementation section of this document for how to overcome gaps and barriers. See the following table for gaps and barriers:

Gap	Strategy	Initiator (client)	Actor	Funding Opportunities	Cost	Timeframe
Gap I: Linkages Between Growers & Local Markets	Create a Local Food Coordinator Position	County	County and City	USDA Grants, County	$60,000-$75,000	1-2 years
	Create an Insitutional Clearinghouse	County	Local Food Coordinator	Americorps position, county or city funds, invoicing fees	As needed	1-3 years
	Optimize Food Distributor Logistics and Capacity	County	Local Food Coordinator	USDA Grants	As needed	Ongoing
	Help Distributors Market Local Food	County	Local Food Coordinator	N/A	As needed	2-3 years
	Develop Institutional Contracts that Require Local Sourcing	City	Schools and other institutions	Law school externship	No cost	1-2 years
Gap II: Limited Processing & Storage Capacity	Develop Tomato, Ben, and Squash Co-Pack Facilities	County	Processors	County, USDA grants	As needed	2-3 years
	Develop Controlled Atmosphere Storage Capacity	County	Processors	County, USDA grants	$500,000	2-3 years
	Increase Wheat Milling and Storage Operations	County	Producers, processors, distributors	County, USDA grants	As needed	1-2 years
	Research On-Farm Processing needs of Mid-Sized Farms	County	County, university	County, USDA grants	As needed	1-2 years
Gap III: Methods to Mitigate Risk	Encourage Processor- and Distributor- Supported Agriculture	County	Producers, processors, distributors	USDA loans banks, revolving loan fund	No cost	1-2 years
	Develop "Proof of Concept" through the EWEB Demonstration Farm	EWEB	EWEB	EWEB	$250,000	3-5 years
Gap IV: Institutional & Grocery Store Requirements	Support Food Safety Certification	EWEB	Producers, processors, distributors	EWEB, NRCS grants, county	As needed	1-2 years
	Create a "How to do Business with Lane County Grocery Stores" Manual	City	City, County, University, or other	Americorps position, USDA grants, university internships	As needed	1-2 years

University of Nebraska-Lincoln. January 16, 2009. ***Sustaining Agriculture in Urbanizing Counties: Insights from 15 Coordinated Case Studies, Executive Summary.***
This study sought to identify conditions under which farming may remain viable in agriculturally important areas subject to development pressure. The study considered 15 metro areas throughout the U.S. This study was funded by USDA's Cooperative State Research, Education and Extension Service. For each, the researchers sought to identify:

- Successful agricultural products.
- Adequacy of marketing outlets for crops and livestock.
- Supply and affordability of land for farming and ranching.

- Adequacy of other production inputs.
- Future outlook for agriculture.

Data included the Census of Agriculture, a mail-in questionnaire for owners and owner-operators, and stakeholder interviews.

Key findings in each focus area are:
Markets and Marketing

- Satisfaction with markets depends on proximity to buyers and processing facilities.
- Assistance with direct marketing and diversifying products is most valued.

Farmland Protection

- Agricultural protection zoning was effective in some counties including minimum lot sizes
- Urban services boundaries in combination with minimum lot zoning.
- Purchase of development rights programs.
- Agricultural use-value assessment for property taxes.
- Right to farm protections.
- Adequacy of the supply of hand labor and other human inputs.

The report's final chapter closed with seven policy recommendations derived from the research findings for promoting viable farming in metro areas:

1. Local governments should aim to prevent conflicts between farmers and non-farmer neighbors and to resolve those that arise in ways sympathetic to farmers' interests.
2. Local governments should apply zoning policies (e.g., large minimum-lot requirements, cluster zoning, urban growth boundaries) that help to preserve an adequate land base for agriculture.
3. State governments should enable, and local authorities operate, effective programs for purchasing development rights to farmland, thereby either adding to the land base that agricultural protection zoning supports or achieving what zoning fails to realize.
4. Public and private agencies should encourage farm families to plan for the transfer of ownership and management to their children or other relatives. We found that with family successors lined up, the future of individual farms could look much brighter (e.g., current owners more likely to invest in their land and operators less likely to quit farming in the county prematurely).
5. The same agencies should encourage the launching and sustaining of farm enterprises likely to be profitable on the urban edge. Given the pervasive land constraint, consideration should be given to relatively smaller acreage operations, such as those raising high-value products including specialty crops and livestock. Direct marketing can also add revenue and assistance programs for it was the second most popular type of help requested by our surveyed farmers—second after the purpose of "diversifying or adding new products."
6. In geographic areas lacking sufficient farmers to sustain agri-service businesses, policy makers may need to encourage adaptations by both farm operators and suppliers, such as Internet purchasing and "drop-off boxes" for equipment repair.

7. Policy makers should consider ways to provide for adequate numbers of farm workers. One tool urged by interviewed farm operators was to reform the federal government's guest worker program for migrant labor.

A Report to Community Food Matters and the Portland/Multnomah Food Policy Council, 2003. *Barriers and Opportunities to the Use of Regional and Sustainable Food Products by Local Institutions.*
Community Food Matters and the Portland/Multnomah Food Policy Council jointly undertook this study of barriers and opportunities to the use of regional and sustainable food products in local institutional food service programs. The research included interviews with key industry leaders as well as examination of related programs in neighboring Washington State. The research is useful for identifying preliminary themes pertinent to institutional purchases of regional and sustainable food products.

Common themes are:

- Customer demand is a powerful force for purchasing decisions.
- Institutions rely heavily on produce and grocery distributors for accessing product.
- Direct connections between producers and buyers is an opportunity to increase institutional purchases of regional and sustainable products (e.g., The Food Alliance).
- Other identified strategies for enhancing connections between producers and institutional purchasers included support for producers in meeting institutional purchasers' requirements and dissemination of information regarding producers and their available product.
- Contracts, bidding specifications, and prime vendor agreements often provide guidelines, requirements or restrictions on purchasing decisions that can be a barrier to the purchase of regionally or sustainably produced foods.
- Purchasers and distributors expressed a desire for more information to help them assess producers' sustainability practices.
- Price was listed as one of the most important factors in purchasing decisions by most institutions and distributors.

Martinez, Steve et al., May 2010. *Local Food Systems: Concepts, Impacts, and Issues.* USDA Economic Research Services, Economic Research Report Number 97.
As mentioned earlier, this article provides a comprehensive literature-based overview of local food systems and identifies the following barriers to local food-market entry and expansion:

- Capacity constraints for small farms.
- Lack of distribution systems to mainstream markets.
- Limited research, education and training for marketing.
- Uncertainties about regulations (e.g., food safety requirements).

Clackamas County Soil and Water Conservation District, 2008. *Clackamas County Agriculture and Natural Resources…The "Other" Traded Sector.* PowerPoint presentation.
This presentation mentioned above also presents the factors used by Metro in its Urban and Rural Reserves process as well as USDA Suitability Factors, including:

- Adjacent and "area" land use pattern.
- Agricultural land use pattern of area.
- Parcelization, tenure and ownership pattern.
- Agricultural infrastructure (labor, transportation, servicing, water availability).
- Zoning within the agricultural area.

- Location in relationship to adjacent non-resource lands.
- Location/availability of edges and buffers.
- Location in or near a metro area.
- Concentration/clusters of farms.

Farmers' Markets America and Barney & Worth, Inc, September 2008. ***Portland Farmers Markets/Direct-Market Economic Analysis: Survey of Peer Communities.***

Internal challenges:

- Locations that are impermanent and limited in size.
- Financial sustainability of farmers' market organizations, including grant reliance.
- Providing reasonable salaries to maintain long-term, professional staff.
- Fast-paced, market-creating jobs with the need for more community involvement.
- Need for on-site assistance for program development and expansions.
- Keeping fees low for farmers.
- The Board trying to micro-manage decisions.
- Opening new markets – finding sufficient space, parking and farmers given the aging farm population. "We need new models."

External challenges to deal with:

- Industry not appreciating organization's size and ability to create new markets.
- State regulations that slow food producers' ability to create new products.
- Supermarkets advertising their "farmers market" and moving their produce display outdoors.
- Perception of high price – need to expand core group to second tier of shoppers.
- Green Acres Act (Minnesota) makes it difficult for retiring farmers to defer taxes by renting their acreage. Large corn growers object and want to stop hobby farms so the average market farmer has 10 to15 acres, the largest 160 acres.

Opportunities:

- Identifying and reinforcing the WOW! experience for customers.
- Helping start young farmers through arrangements with retiring farmers, such as the lease/buy option with Growing Washington.
- Having some small, ragtag operators to give credibility. "We're leaders and we don't want to be a supermarket but can get along right next to them."

Kaufman, Jerry and Bailkey, Martin, 2000. ***Farming Inside Cities: Entrepreneurial Urban Agriculture in the United States.*** **Lincoln Institute of Land Policy Working Paper.**
This paper, also mentioned above, presents obstacles to urban agriculture and ways of overcoming them. Obstacles to the general practice of urban agriculture fall into four broad categories: site-related; government-related; procedure-related; perception-related.

- Site-related. Contamination, security and vandalism and lack of long-term site tenure.
- Government-related. Local (policy and practicality) and State and Federal (lack of financial support).
- Procedure-related. Inadequate financial resources, recruitment and retention of qualified staff, inadequate time, small-scale projects, coordination across scattered sites and high start-up costs.
- Perception-related. Concerns about food safety, economic productivity and agriculture as a rural activity.

The following are six typical obstacles (revisit for toolkit, pp 66-79):

- Entrepreneurial urban agriculture projects cannot be sited on vacant city lots because these parcels are too contaminated.
- Entrepreneurial urban agriculture projects located in crime-ridden neighborhoods are undermined by considerable vandalism.
- Entrepreneurial urban agriculture projects are not economically viable as profit generators nor as operations seeking only to cover expenses, thus they are not worth initiating or supporting.
- Entrepreneurial urban agriculture projects are run by people who, although energetic and committed, lack the necessary management and business skills to make such ventures successful.
- Entrepreneurial urban agriculture practitioners operate too independently and fail to work together to promote the potential and overall value of city farming.
- Entrepreneurial urban agriculture projects represent a temporary land use, lasting only until "real" revenue-producing development occurs.

Urban Agriculture barriers:

- Lack of clarity in the zoning code regarding legality of selling produce coming from backyards through new CSA models; rules against selling produce from community garden plots.
- Lack of definition for urban agriculture that recognizes the scale at which UA works; zoning limitations as to where agriculture is allowed.
- Limitations to planting edible plants and trees in public rights-of-way, including fruit and nut trees and vegetable gardening.
- Limited land made available for urban agriculture projects, either from public or private sources.

The paper includes suggestions for overcoming these obstacles to entrepreneurial urban agriculture.

Additional Resources

The following is a list of additional resources compiled from the bibliographies of the studies summarized above.

National Studies

APA Policy Guide on Community and Regional Food Planning (2007)
https://planning.org/policyguides/pdf/food.pdf
This APA-adopted policy guide lays out seven general policies related to food planning and details specific roles that planners can play in supporting each one. This is a great overview of the issues and the relationship between food systems and the field of planning.

Community Food Security Coalition
www.foodsecurity.org
Provides information on food systems, assessing food security and protecting local produce suppliers.

Community Health and Food Access: The Local Government Role (2006)
http://bookstore.icma.org/freedocs/E43398.pdf
This short report highlights many food-related topics with the perspective of a local municipality; case studies, policy examples and justifications provide a good introduction to the issues surrounding food systems and governments' roles.

Establishing Land Use Protections for Farmers Markets (2009)
http://www.healthyplanning.org/modelpolicies/farmersmarketpolicies.pdf
These two new resources from Public Health Law and Policy contain model general plan and zoning code language for promoting and expanding community gardens and farmers markets, with some case building at the beginning. These two resources are extremely useful for jurisdictions planning to incorporate food issues into their comprehensive or general plans or zoning codes.

A Planners Guide to Community and Regional Food Planning: Transforming Food Environments, Facilitating Healthy Eating (2009)
http://myapa.planning.org/APAStore/Search/Default.aspx?p=3886
This extensive document provides data, case studies and planning strategies to consider food systems in planning work, specifically on the subject of health. This is a great guide for planners looking to learn more about food systems and how they impact them in planning work. Specific strategies to improve food environments and facilitate healthy eating include:

- Information Generation
- Programmatic Efforts
- Plan Making and Design
- Regulatory and Zoning Reform

The Planner's Guide to the Urban Food System
www.planning.org/thenewplanner/2008/spr/pdf/PlannersGuidetotheFoodSystem.pdf
This short, colorful resource provides a simple overview of how food and planning intersect, what the food system is and how planners can take action.

Portland Metropolitan Region

Everyone Eats! A Community Food Assessment for Areas of North and Northeast Portland, Oregon (2008)
http://www.emoregon.org/pdfs/IFFP_N-NE_Portland_Food_Assessment_short_report.pdf
This assessment is based on results from 200+ surveys of North and Northeast Portland residents of certain zip codes. Surveys were targeted to reach lower-income individuals. Findings include information on accessing healthful foods, nutrition, interest in local foods and more. Other parts of the reports cover recommendations, summaries of other information-gathering and exploration of the role of faith communities in building food security.

Portland/Multnomah County Food Policy Inventory (2002)
Prepared by the Portland/Multnomah Food Policy Council
This inventory was written shortly after the Portland/Multnomah Food Policy Council was formed, and tries to provide a "lay-of-the-land" look at City, County and other agencies that impact the food system either explicitly or implicitly. Provides an interesting look back at the state of food policy before the FPC was on the scene.

The Price of Eating Right: Oregon Trail at Farmers Markets (2005)
Prepared for the Oregon Food Bank by New Territories Research. Available through the Bureau of Planning and Sustainability
Kaiser Permanente funded this study to improve local produce options for low-income residents. Over 100 food stamp users were interviewed about their use of farmers markets and use of EBT (electronic benefits transfer is the "credit card" version of food stamps) at farmers markets.

The Prospect for Expanding Portland's Farmers Markets: Are Growers Ready to Ramp Up the Supply? (2008)
Barney & Worth, Inc. and Globalwise, Inc.
This study examines the capacity of Portland's farmers markets to expand in the future, looking at both local consumer demand and regional farmer/vendor supply. The analysis of regional agricultural supply capacity was conducted to determine the ability of direct market producers to adequately supply existing and expanded/additional farmers markets in Portland.

Regional Equity Atlas: Metropolitan Portland's Geography of Opportunity
http://www.equityatlas.org/
The Coalition for a Livable Future's (CLF) report and interactive website has detailed maps and analysis on many equity and access indicators, including a discussion on food access. Some specific Portland information is available from CLF directly. The report focuses largely on region as a whole.

A Snapshot of Local Food Production in the City of Portland and Multnomah County (2002)
By Jennifer Bell. Field Area Paper for the MURP degree
This scholarly paper gives a snapshot view of Multnomah County agricultural production using state-collected statistics. A policy analysis and GIS mapping lays out a path to increasing local food production. While somewhat dated, the document provides a clear case for moving urban agriculture forward.