

# EAT HERE

“Local Foods Landmarks” Report for the Greater Peoria,  
Illinois, Region

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*Wendell Berry has written that eating is an agricultural act. I would also say that eating is a political act, but in the way the ancient Greeks used the word “political”—not just to mean having to do with voting in an election, but to mean “of, or pertaining to, all our interactions with other people”—from the family to the school, to the neighborhood, the nation and the world. Every single choice we make about food matters, at every level.*

*—Chef and Activist Alice Waters<sup>1</sup>*

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<sup>1</sup> (Waters n.d.)

## Introduction

Everyone eats: three meals and a few thousand calories a day, 365 days a year—or at least that is the goal. The food we eat has profound impacts on public health, environmental quality, economic development, and land use. Despite the importance food has in nearly every aspect of life, governments in the United States have paid little attention to a comprehensive food policy. Many aspects of agricultural and nutritional policy are Federal, governed by interstate commerce and related regulations. Decisions regarding land use and on-the-ground investments occur at the local level. Policy decisions are shaped by many factors, and as they regard food, may ultimately be contradictory—federal dietary recommendations conflict with agricultural subsidies for commodity products, urban land use restrictions restrict food production opportunities, school “nutrition” programs are criticized for providing inadequate or inedible options.

Increasingly, activists, analysts, public health practitioners, farmers, consumer advocates, and policy makers agree that our current practices of eating cannot be maintained long-term. The economic viability of farming, the health of individuals and our environment, and a productive investment of public resources are threatened. National and regional conversation about these topics criticizes a “business as usual” approach, but what alternatives are available?

## Local Food Systems

Among those proposing solutions, many support re-localizing the food system. As recently as the turn of the last century, a majority of food was produced and consumed in local and regional distribution networks. Many Americans are only one or two generations removed from “the farm” and an agricultural life style.

Although conversations are held nationally, many solutions are sought locally. Large urban centers garner most of the media attention in this sector—farmers’ markets blossom, San Francisco provides property tax incentives for Urban Agriculture, Seattle fines disposal of food waste through conventional garbage collection, New York City implements a Healthy Corner Stores program and an incentive system for Healthy Food Carts. Small and mid-sized cities, which anchor a far larger number of foodsheds<sup>2</sup>, may support less prominent initiatives if they offer them at all. If Peoria County is to invest in local foods efforts, what steps will be most appropriate?

To address these questions, this study was completed by University of Illinois Extension and Graduate Research Assistant Nancy Smebak between April 2014 and May 2015. Research was completed for Peoria County on behalf of University of Illinois Extension. Kathleen Brown, University of Illinois Extension Educator in Community and Economic Development for the Fulton/Mason/Peoria/Tazewell Unit and Dr. Mary Edwards, Associate Professor of Urban and Regional Planning at the University of Illinois at Urbana-Champaign, served as research advisors.

## Local Foods Movement in Illinois

Following a growing national conversation around food systems, agricultural production, and local economic development, in 2007 the Illinois Local Food Farms and Jobs Task Force was formed by a

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<sup>2</sup> Similar to an ecological watershed drainage basin, a conceptual foodshed represents a geographic aggregation basin formed on the basis of gravity. Like watersheds, foodsheds can be considered at multiple scales of aggregation, from the hyper-local to the continental. At a broad conceptual level, the “uplands” of a foodshed represent production areas, while the lower “drainage areas” represent urbanized areas of concentrated food consumption.

legislative act, producing the March 2009 “Local Food, Farms & Jobs: Growing the Illinois Economy” report to the Illinois General Assembly. Following these efforts, the Illinois Legislature passed HB 3990, the “Local Food, Farms, and Jobs Act”<sup>3</sup>, in August of 2009, and was signed into law by Governor Pat Quinn in the same month<sup>4</sup>.

The Local Food, Farms and Jobs Act laid out a purchasing goal of Illinois products to comprise 20 percent of food and food product purchases by State agencies and State-owned facilities by 2020, and established the Local Food, Farms, and Jobs Council to encourage state-funded entities to purchase Illinois products to provide at least 10 percent of their food programs<sup>5</sup>. The Act also provided enabling legislation for local purchase preference contracts and technical assistance to track local foods capabilities.

#### *Local Foods Movement in the Greater Peoria-Central Illinois Region*

In 2011, the Edible Economy project commissioned a study of the agricultural economy in 33 counties in Central Illinois. Ken Meter of the Crossroads Research Center evaluated agricultural production, input sourcing, commodity sales, and food purchases using data from the Census of Agriculture, Bureau of Economic Analysis, US Census, and other national datasets to develop a snapshot of local food and agricultural issues in the Central Illinois. The study found a net loss to the region of \$5.8 billion attributed to agricultural inputs and locally consumed food product sourced from outside the region<sup>6</sup>.

Interest in local foods system development as an economic driver in Peoria County coalesced around a proposals to redevelop the county-owned 40-acre former Hanna City Work Camp site west of Peoria. In December of 2013, local stakeholders including County Government representatives met to discuss possibilities of developing a local foods aggregation hub, small farms incubator, and agricultural education center<sup>7</sup>, and a subsequent public meeting held in March 2014 attracted over 100 local participants for a community discussion on similar topics<sup>8</sup>. Although further research into the Hanna City site has shown local foods infrastructure to be an unfeasible use for the property, the county retains its interest in local food system development.

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<sup>3</sup> In addition to sparking a statewide conversation about local foods economies, this legislative act recognized the value of a serial comma.

<sup>4</sup> (Illinois Department of Agriculture 2009)

<sup>5</sup> (HB3990 2009)

<sup>6</sup> (Meter 2011)

<sup>7</sup> (Brown, Strengthening Local Food Opportunities 2014)

<sup>8</sup> (Brown, Greater Peoria Regional Food Summit 2014)

## Local Foods Resource Identification

To understand and describe the local food system and local food economy in the Greater Peoria Region, community profiles identifying key local demographic and socioeconomic indicators were prepared, and local foods production, processing, distribution, and retail facilities were identified. Publicly available data from national entities including the United States Census Bureau and United States Department of Agriculture, state organizations including the Illinois Department of Agriculture and University of Illinois MarketMaker, and nonprofit technical assistance providers working at a variety of scales, including the Wallace Center's National Good Food Network, the Illinois Stewardship Alliance, and the Heart of Illinois United Way were combined to create asset maps. Secondary data analysis was augmented with key informant interviews.



Figure 1: Community Food System Components

## Food System Conceptual Framework

A food system evaluation broadly addresses all aspects of food production and consumption, from soil and sunlight used in food production to processing and distribution infrastructure, to retail outlets, and food waste management.

Many dimensions of the food system have economic implications for developing a localized economy. Immediate food system components including Food Production, Processing, Preparing, Consumption, Retail, and Distribution are influenced by broader themes of Economic Development, Employment, Community and Social Vitality, Small-and Medium-Scale Farms, Farmland Preservation, Environmental Stewardship, and Public and Individual Health.

Documenting key institutions and stakeholders operating within the Greater Peoria Region foodshed provides an initial benchmark for comparing the Peoria food system with other localizing food systems, and with future changes in the Peoria system.

## Local Study Area

The Local Food Study area selected for evaluation includes thirty-three Illinois counties within sixty miles of Peoria County, representing growing regions within a two-hour driving radius of the City of Peoria. Counties included in the foodshed analysis include Brown, Bureau, Cass, Christian, Clinton, De Witt, DeKalb, Fulton, Henderson, Henry, Knox, La Salle, Lee, Livingston, Logan, Macon, Marshall, Mason, McDonough, McLean, Menard, Mercer, Morgan, Peoria, Putnam, Rock Island, Sangamon, Schuyler, Stark, Tazewell, Warren, Whiteside, and Woodford Counties.

The counties included in the regional analysis represent potential contributors to the Peoria Regional Food system, and collaborators for policy and infrastructure investment. At the same time, counties also compete for local foods consumption, limited funding streams, and market share in local foods retail. Acknowledging these potential relationships can aid in developing food system investment policies.

Out-of-state counties are not included in the foodshed analysis, as many policies governing food production and regional distribution are state-specific, with regulations limiting sales across state boundaries.

## Community Food Profile

### Local Food Economy

Food product and service sales were responsible for over \$1 billion in spending in Peoria County during 2012, as estimated from State of Illinois Sales Tax records. A vast majority of these products were sourced from outside the County. According to the USDA Census of Agriculture, retail receipts from vegetables, berries, nuts—products commonly sold through direct-to-consumer channels—grown in Peoria County in 2012 totaled under two million dollars, a figure that represents less than one quarter of one percent of all food sales within the county<sup>9</sup>.

## Greater Peoria Region: Counties

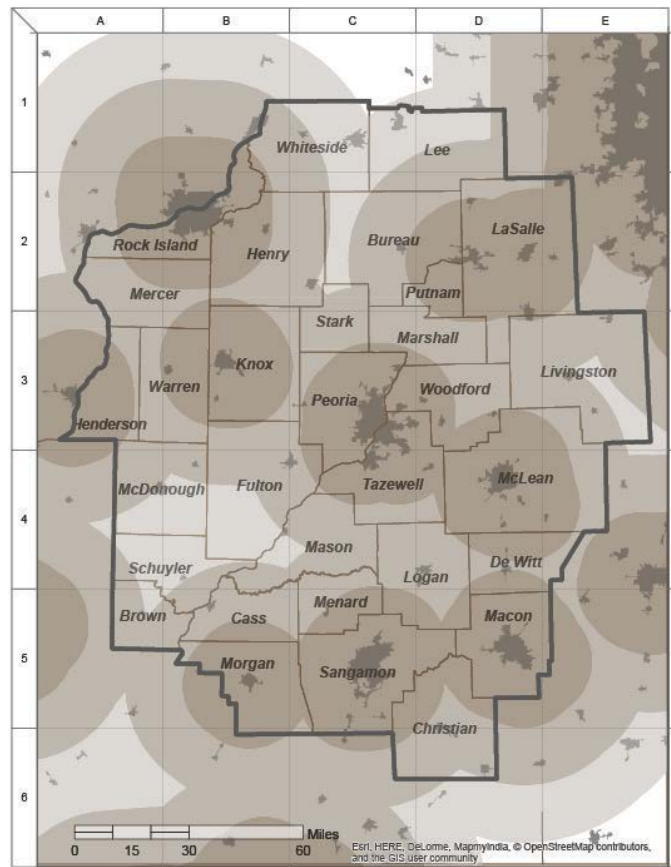


Figure 2: Greater Peoria Foodshed Counties and Urban Areas

<sup>9</sup> USDA Census of Agriculture 2012.

Estimates of “food dollars” and potential wealth forfeited by Central Illinois’ production regions because of citizens’ reliance on a global/national food system are vast. A 2011 study of 32 counties in Central Illinois found a net loss of 5.8 billion dollars to the region as a result of agricultural input sourcing and agricultural product sales outside Central Illinois<sup>10</sup>. Allocating this figure equally across the 32-county region suggests an estimated 180 million dollars lost from Peoria County’s food system in 2011.

			\$ Billions	Value Added	Est. End Retail
<b>Farm Sales</b>	Local	Farm Production Expenditures	- 2.0		
	Local	Farm Commodity Sales	0.5		
	Extralocal	Farm Production Expenditures	- 2.3		
	Extralocal	Farm Commodity Sales	4.3	23.4**	27.4**
	Local	Net Farm Sales	0.5		
	Extralocal	Net Farm Expenses	- 1.9		
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<b>Food Production</b>	Total	Food Commodity Purchases	- 4.3		
	At Home		- 2.6	2.2	0.4
	Away		- 1.7	1.4	0.3
	Local	Food Purchase Source	0.4		
	Extralocal	Food Purchase Source	- 3.9		0.7
	Extralocal	Total Losses	- 5.8		

Figure 3: “Central Illinois Local Farm & Food Economy” Findings (K. Meter, 2011) , with “Farmers Share” Calculated

Because most food processing, packaging, development, and marketing occurs outside of Central Illinois, the entirety of this projected “loss” is unlikely to be recaptured within the region without a significant reworking of the region’s, and the nation’s, food system. By incorporating the National Farmers Union annual “Farmer’s Share” estimation that only 15.8 cents of every conventional food dollar expenditure is returned to the farmer<sup>11</sup>, only 0.7 billion dollars of current extralocal food purchases would be returned to Central Illinois farmers. Holistic integration of processing, marketing, preservation, preparation, distribution, and retail components of a local food system must be provided to realize full economic effects locally.

Other attempts to estimate unrealized economic potential of a local foods system for the region focus more singularly on statewide production capacity and local economic demand. A “MarketSizer” tool released by technical assistance provider New Venture Advisors LLC in 2014 estimates an unmet market for local Meat, Poultry, Eggs, Dairy, Fruits, and Vegetables of nearly \$60 million in Peoria County and \$121 million in the multi-county Peoria Metropolitan Statistical Area (MSA)<sup>12</sup>.

In addition to unfulfilled demand for local foods products, the Greater Peoria region may have areas of unmet demand for food retail facilities. According to sales tax receipts, retail value of all food sales in Peoria County has increased approximately twenty percent between 2012 and 2014, due almost entirely to an increase in sales of food products; minimal increases were recorded in restaurant and hospitality food service sales tax receipts. A Business Analysis profile the Peoria MSA produced by Esri<sup>13</sup>, an international supplier of Geographic Information software, web GIS, and geodatabase management

<sup>10</sup> (Meter 2011)

<sup>11</sup> (National Farmers Union 2015)

<sup>12</sup> (New Venture Advisors 2014) Local Food Demand estimates are based on wholesale sales estimates within a geography, while available Local Food Supply is approximated based on state-level production quotient. The Unmet Market for Local Food estimate is the difference in estimated demand and supply. Food categories include both fresh and processed products.

<sup>13</sup> (Esri Business Analyst 2014) MarketPlace estimates are based on Dun & Bradstreet’s commercial business database and Esri spatial data.

applications, estimated a \$7 million gap in expected and actual sales at Specialty Food Stores in the MSA, while unmet demand for restaurants and special food services approached \$42 million for 2014. Meanwhile, traditional grocery retailers within the MSA record nearly \$260 million in sales above what would be expected based on population alone, suggesting that adjacent and outlying communities rely on the metro area for grocery access.

### *Local foods retail*

A variety of retail outlets provide local food sales in Peoria County and the surrounding foodshed. Conventional retail operations may offer a subset of locally-sourced products in a location convenient to consumers. Farmers markets and centrally-located Community Supported Agriculture pick-up sites also focus in bringing local food products to customers, while on-farm sales, U-pick farms, and agrotourism sites rely in bringing consumers to production sites.

### *Farmers Markets*

Peoria County is served by two major farmers markets, an ongoing seven-vendor Monday through Saturday market at the Peoria Metro Center, and a Saturday morning market occurring at the Peoria Riverfront Market. Additional farmers markets are held at Junction City on Saturday mornings, at the South Side Neighborhood House on Tuesday afternoons, and other farmers markets in Tazewell and Woodford Counties. Overall, over thirty-two vendors participate in Peoria County markets, eleven from Peoria County and over twenty from the broader foodshed. Vendor types vary by farmers market, but primarily retail produce, with some baked goods and ready-to-eat products also provided. The Greater Peoria Local Foods Resource Guide, Appendix 1 details farmers markets and other local foods resources within the foodshed.

Farmers Markets are a prominent local foods retail strategy, but are generally limited to a few hours a week of operation, and markets may directly compete with each other for prime retail hours. Consumers enjoy a festive market atmosphere, social interaction with neighbors and food producers, and access to valued products. However, farmers markets are also labor- and time-intensive for producers retailing their wares, requiring significant advance preparation and transportation in exchange for unpredictable sales.

### *Community Supported Agriculture and On-Farm Sales*

Community Supported Agriculture (CSA) programs unite growers and consumers in financing locally grown foods. Consumers pre-purchase “shares” of a farm’s production, and receive a fraction of whatever is grown at prearranged intervals; pickups of produce typically occur every week or every other week at growing sites, farmers markets, or other designated locations. Twenty-Seven CSAs are located in the foodshed (see Appendix 1 for maps). Most provide seasonal vegetables, while some make fruits, flowers, herbs, eggs, milk, or meat.

Although seven CSAs serve Peoria County, no CSA farms are located in the county. CSA farm sites throughout the foodshed often serve multiple urban markets, with many CSA farms located north of Peoria primarily serving Chicago markets. Most CSAs also offer on-farm pickup of shares.

Farm stands and U-Pick sites also offer local foods retail. On-farm sales can be valuable for growers. Producers may enjoy lower transportation costs and opportunity costs from off-farm retailing, while consumers may enjoy the opportunity to see where food is produced. Peoria County zoning supports reasonable on-farm sales as a permitted use in Agricultural land.



## Food Consumers

Peoria County’s population is approximately 188,400, according to the 2013 US Census Bureau population estimates. The broader regional population is just below two million, ranging from 199,000 in Sangamon County, the site of the state capital, to 5,800 in rural Putnam County.

### Food Service in Institutions

Food consumption is an individual choice, but is influenced by cultural values, product affordability, and food access. Recent national and regional attention has been directed to school food quality and food service provision in other institutional settings. The United States Department of Agriculture Census of Farm to School Programs, first conducted during the 2011-2012 academic school year, recorded significant national interest in local foods programming in public schools. Although no school districts in Peoria County reported participation in Farm to School programs in the Census, the Greater Peoria region’s student population represents a significant potential market for local foods.

More than a quarter of the region’s residents are students in Nursery, Primary, Secondary, or Postsecondary school. Although educational institutions vary, a significant proportion of residents have access to institutional food service programs. The 18 public school districts and 14 private and charter schools have access to the Peoria Regional Office of Education Food Co-Op for bulk food purchasing, providing access to a large pool of purchasing entities a potential pathway for technical assistance for schools interested in implementing local foods programming.

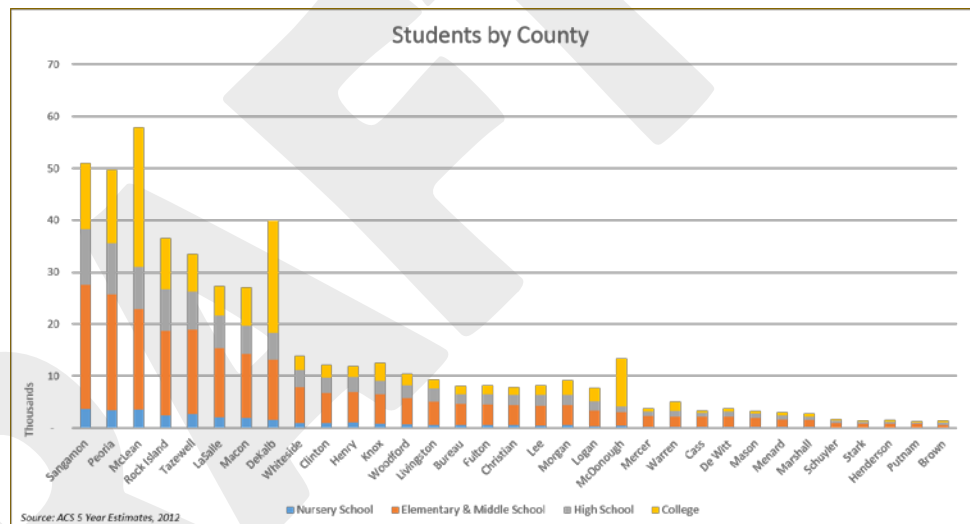


Figure 4: Regional Student Characteristics

Peoria is home to Bradley University, a private university with an enrollment of approximately 5,500 students. Bradley’s Food Service is provided by Aramark and has implemented sustainability programming to reduce food waste and disposable containers. Aramark’s primary distributors provide some local produce sourcing, primarily from Iowa growers. Heartland Community College and Illinois Central College provide vocational training in food service and horticulture, and have invested in developing local agriculture production and distribution capacity.

Approximately ten percent of the region’s civilian residents report Veteran status. Veterans are one group that has been targeted for technical assistance for local agricultural development and retail opportunities, making them a potential contributor to the regional food system. Additionally, like students, veterans are potential consumers of the food service provided by regional institutions, including Veterans Administration centers. Healthcare and long term care facilities provide relatively consistent levels of food service, based on facility capacities, to residents with varying nutritional needs

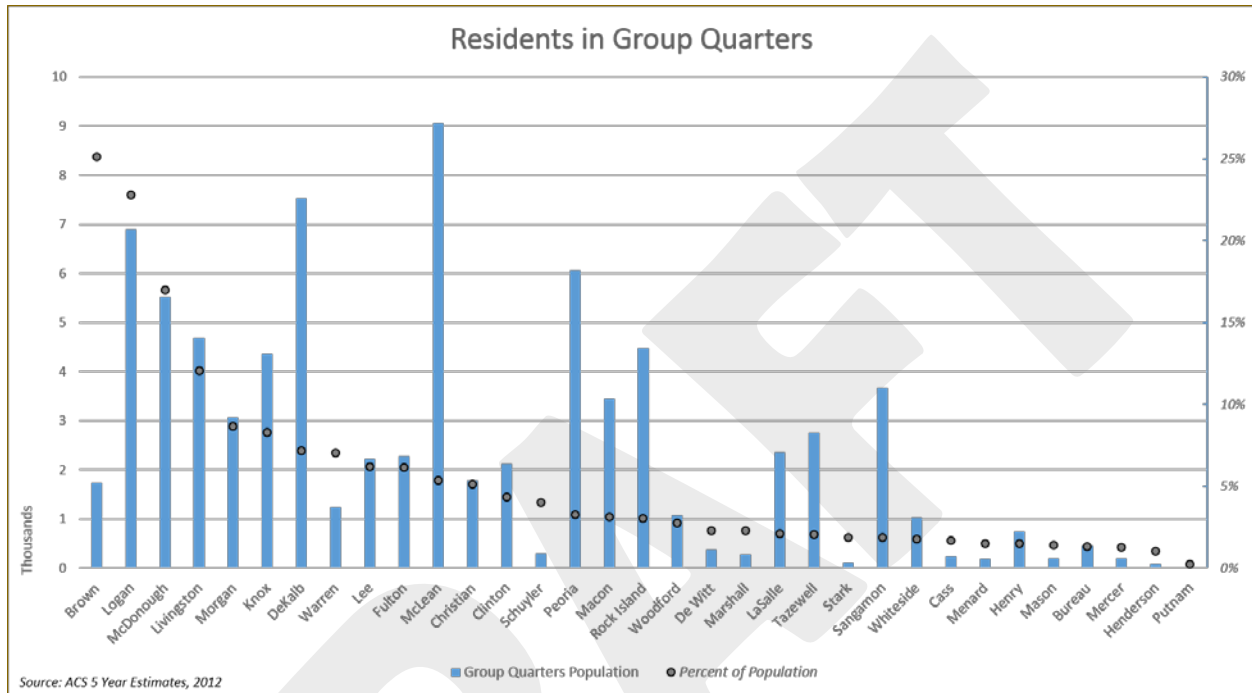


Figure 5: Regional Group Home Populations

and length of residence in group facilities.

Like students and veterans, residents of group homes--including nursing homes, college dormitories, or detention centers--may be consumers of a single stream of food service. Approximately 80,600 residents, comprising 2.5 percent of the regional population, reside in group quarters. Five counties in the region have group quarters populations that exceed 5,000, including Peoria County. However, approximately one quarter of Brown and Logan Counties’ populations reside in Group Quarters. Absolute numbers of residents living in group quarters and relative proportion of residents in group quarters vary significantly by county, suggesting varied interests in serving group quarters populations through local food system development.

State and County detention and correctional facilities present an additional institutional market for local foods. Nearby Illinois Correctional Centers’ Industries in Galesburg and Canton provide meat processing, milk and juice processing and repackaging services, and bakery facilities to produce food products for other correctional facilities and government entities.

Employer-based food service programs, including Caterpillar’s cafeterias and Peoria Regional Airport food service facilities, present centralized local food market locations with the potential for more flexibility in menu-planning than residential nutritional programs.

### Food Insecurity

Eighty thousand of the region's residents, including eight thousand Peoria County Residents, are estimated to have received Supplemental Nutrition Assistance Program (SNAP, also known as Food Stamp) benefits within the past twelve months. Among SNAP recipients, over 56 percent are children under the age of 18.

Although the amount and length of SNAP benefits received varies based on recipient income, SNAP benefits represent a significant contribution to the region's food economy. Peoria County's two largest farmers markets accept SNAP and/or Women, Infants, and Children (WIC) benefits, and a matching grant program currently offered through a dedicated fund of the Central Illinois Community Foundation offers matching funds for SNAP recipients using their benefits at the Peoria Riverfront Market. In 2014, approximately \$9 thousand in matching funds were distributed at the market, representing local food sales that may not have otherwise been directed to conventional, extralocal retail channels<sup>14</sup>.

Emergency and Community Food Services in the region are primarily provided by faith-based entities and social service organizations. Forty-three food pantries and meal sites providing food directly to individuals are located throughout Peoria County. Two regional Food Banks, the Peoria Area Food Bank, a Feeding America Affiliate, and the Midwest Food Bank, a faith-based organization, distribute food to regional pantries. Heart of Illinois Harvest is a charitable food rescue organization that collects day-old products from restaurants and retail outlets in the Peoria metro area and redistributes products to food pantries and community meal sites. Food Banks and Food Pantries in Peoria County and the surrounding region have limited capacity to store and distribute fresh and frozen produce, and primarily provide preserved foods to their organizational and individual clients<sup>15</sup>.

### Diet-related health issues

In 2011, the most recent year for which figures were available, the Centers for Disease and Prevention estimated Peoria County was home to approximately 38,600 obese residents, comprising approximately 28.2 percent of the population. The proportion is below the estimated regional average of 29.7 percent obese residents for 2011, but in general obesity rates for Peoria County and the region have tracked closely over the past seven years.

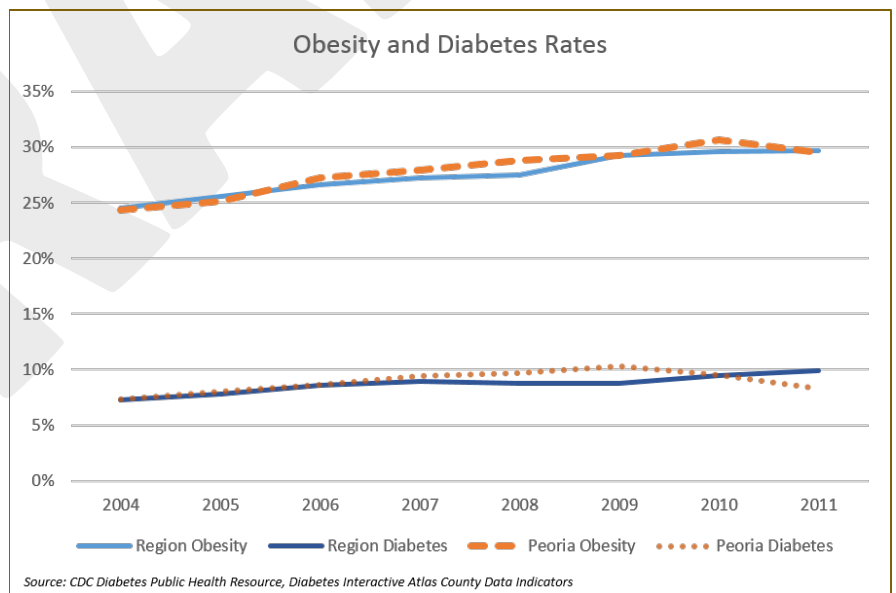


Figure 6: Regional Health Factors

Similarly, estimated diabetes prevalence in Peoria County and the region have remained similar since 2004. In 2011, 8.3 percent or of 11,400 Peoria County residents were estimated to have diabetes, compared to 9.9 percent of the

<sup>14</sup> (Ewalt 2015)

<sup>15</sup> (LaFont 2014)

regional population. Both conditions increased steadily across individual countries and the region between 2004 and 2011, though variability in individual counties' rates was more significant for obesity.

Diet-related conditions such as obesity and diabetes represent an opportunity to improve community health by improving local diet.

### Food Waste

Wasted food products generated at each stage of the food system are a growing interest to food system researchers. Estimates for total average waste range from less than 30 to more than 50 percent of end food purchased, depending on how and at what stages food waste is measured<sup>16</sup>. In Peoria County, Solid Waste planning estimates for 2010 expected 63,000 tons, or 1.86 pounds per capita per day, of organic waste to be produced in the county. Of this, a small but economically valuable subset is food waste, while yard products and animal waste are other sources of organics. A 2006 University of Arizona study estimated an annual cost of food waste of \$590 per family of four per year in the United States<sup>17</sup>, a finding that would suggest a \$27 million annual loss due to food waste for Peoria County consumers. Approximately 43 percent of household food waste generated is from fruit and vegetable products, and about a quarter of all fruit and vegetable products purchased by households are ultimately lost.

Commercial food waste collection and compost services are provided in the Peoria region by Peoria Disposal Company, and were previously also provided by Midwest Fiber. BetterEarth Organic Compost also provides commercial compost service to the region, generating potential soil additives to support local agricultural production.

### Local Foods Production Assistance

The local foods movement is supported by a variety of nonprofit stakeholders providing technical assistance and training for foods producers, as well as marketing assistance. The Illinois Stewardship Alliance, with a strong presence in Springfield but programs throughout the state, produces a Buy Fresh Buy Local Central Illinois directory of businesses participating in the local foods economy. The Stewardship Alliance also organizes networking events for chefs and growers, provides public education, and advocates for public policy supporting local food systems at the state and national level. The Spence Farm Foundation, operating in Chicago and Central Illinois, provides chef training and logistics support for food service programs sourcing local produce.

The Edible Economy Project, administered through Heartland Community College, seeks to address logistical challenges of bringing local foods to market and has conducted scoping studies, including the 2011 "Finding Food in Farm Country" Ken Meter report, to investigate the broad context of local foods systems in Central Illinois. The Illinois Farm Bureau and Illinois Department of Agriculture host an annual conference at Heartland Community College to present information on food production and distribution economies throughout the state. Several farmers markets in the region also provide direct-to-consumer marketing assistance and promotions to their vendors, as well as serving as information networking opportunities for producers.

University of Illinois Extension provides educational and technical assistance supports to local growers, businesses, and governments, with programs extending from 4-H youth activities to Community and

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<sup>16</sup> (United Nations Environment Programme 2014)

<sup>17</sup> (Jones 2006)

Economic Development training and logistical support for the 2014 Greater Peoria Regional Food Summit, to Master Gardener programming<sup>18</sup>. The Peoria-Fulton-Mazon-Tazewell Unit of University of Illinois Extension does not host a small farm and food systems community educator, though the adjacent Livingston-McLean-Woodford County office does provide these services, and statewide food systems educators are available to Greater Peoria County.

The Land Connection, a nonprofit organization, provides farmer training for beginning small growers and coordinates land access opportunities for new operations, as well as providing community education and programming around local agricultural production.

Within Peoria County, the Gifts in the Moment foundation addresses healthy food access challenges by hosting several community gardens and a pay-as-you-wish farmers market in low-income areas of south Peoria. With support of local government and other foundations, the organization has recently organized the “Tri-County Fresh Food Hub” mobile market and CSA program to distribute fresh produce to low-income and low-access areas of Peoria, Tazewell, and Woodford counties. Bradley University’s dietetics internship program provides nutritional programming support and public education at a variety of hospitals, farmers markets, and food security organizations within the County.

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<sup>18</sup> Although many Master Gardener program participants contribute to community gardens and public or for profit food production activities, organizational programming specifically excludes growing edible products and focuses instead on ornamental and landscape plants.

## Food System Evaluation

### Food System Connectivity

Documented relationships between individuals and organizations operating in the Greater Peoria Food System reveal a relative segregation of food system sectors. As revealed through key informant interviews and organizational publications, few food retail operations, including grocery stores, restaurants, and food service programs, have direct relationships with local producers. Organizations with a focus on Food Security and Healthy Living are generally segregated from food production and local foods retail outlets.

Social Network statistics<sup>19</sup> for the relational model developed of food system stakeholders suggest that institutional food consumers (e.g., individual school districts) and conventional food retail chains are the least connected components with relationship to other food system stakeholders; they exhibit large clustering coefficients, a calculation of a vertex's<sup>20</sup> tendency to connect only with immediate neighbors and not other entities. In contrast, vertices with the most connections<sup>21</sup> in the modeled network include super organizing entities for food security organizations (i.e., food banks), institutional food purchasers (e.g., large school district representatives), local foods system conferences, and farmers markets. These entities are also most likely to have high measures of “Betweenness” (occurring on many shortest paths between vertices) and “Eigenvector” (a relative ranking of a vertex's connections to other frequently-relating or highly important vertices in the network) Centralities.

The modeled food system network includes 1,116 individual participants, modeled as vertices. Vertices are connected via 1,162 unique edges and 1,271 total edges, producing an average of 1.13 connections per vertex. Entities that did not publicly report any connections to other food system stakeholders—modeled as vertices with connections only to themselves—comprised approximately 38 percent of all network entities. The greatest Geodesic Distance between entities—following connection pathways in the network—travels through 15 vertices, while the average Geodesic distance between vertices is 6.96. The network's Graph Density, a comparison of existing unique edge connections in the network with the total number of edges necessary to directly connect all vertices (creating a fully unified network), is 0.001335, indicating that a large number of potential connections between network members are not currently recorded.

Group	Total Vertices
Restaurants	320
Conventional Retail	50
Local Retail	21
Conventional Distributors	12
Producer Assistance	31
Food Security	35
Institutions	115
Government	9
Producers	99
Local Distributors	4
Individuals	341

Figure 7: Food System Network Participants by Category

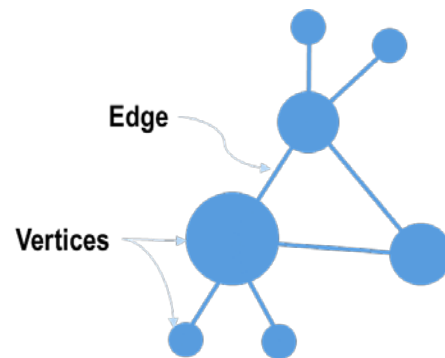


Figure 8: Network Model Components

<sup>19</sup> Social network modeling was conducted in NodeXL, a free, open-source template for Microsoft Excel that provides basic social network modeling. (Smith 2010)

<sup>20</sup> In social network modeling, entities that are members in the network are represented as “vertexes”.

<sup>21</sup> Vertices' connections are calculated as the vertex's degree, a count of the edges (or relationships, or connections) it has with other members of the network.

The network's Modularity statistic describes the connectedness of vertices within each researcher-defined group; with a positive value of 0.167, Modularity suggests that while within group connections are not cohesively absolute (only an average of 16.7% of potential within-group connections are made), they occur more frequently than would be expected if connections were random (random connections formed without respect to group membership would produce a modularity statistic of 0).

DRAFT

Peoria Regional Food System Stakeholder Network

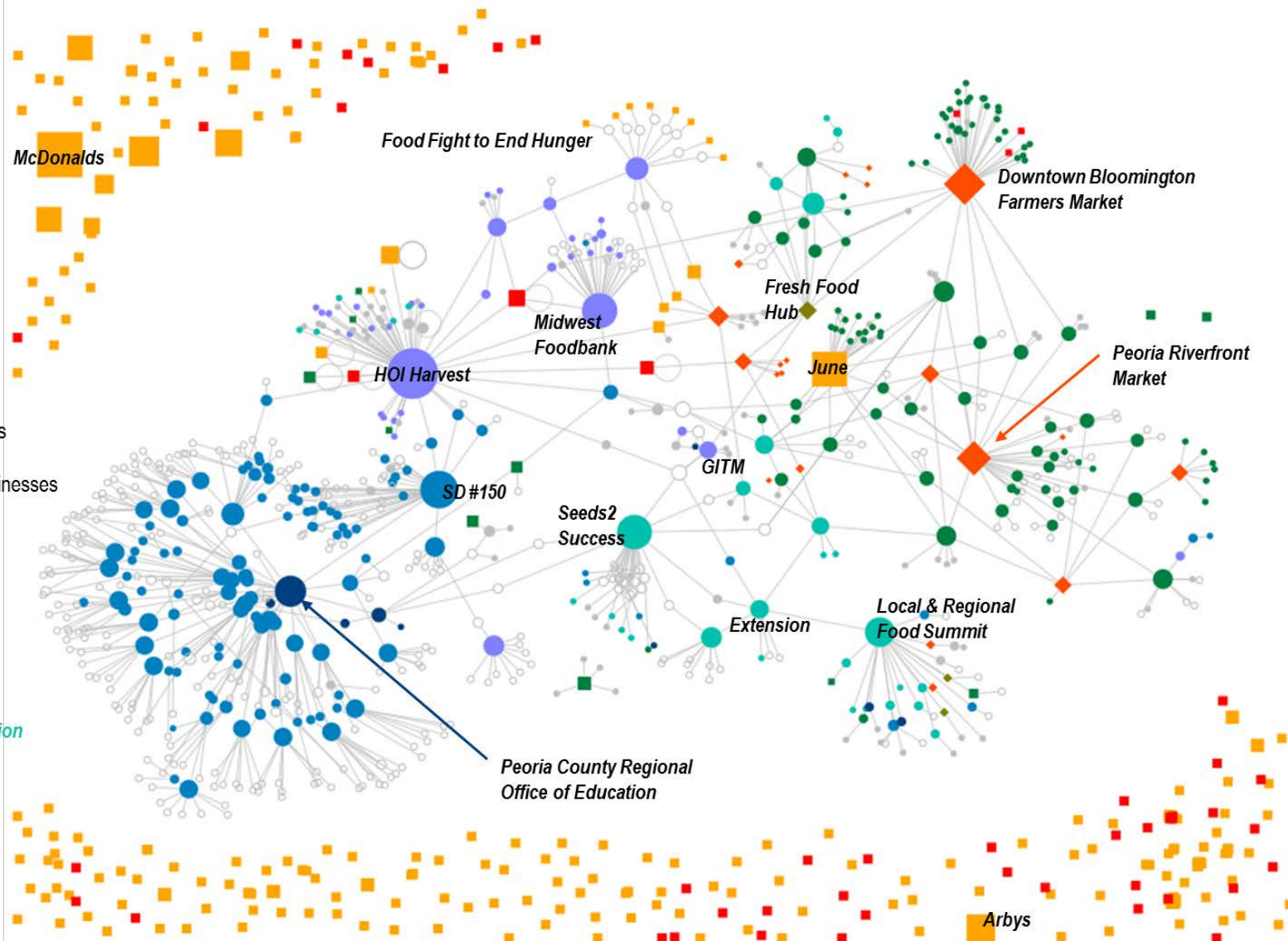
**Legend**

**Symbols**

- ◆ "Local" Food Businesses
- Conventional Food Businesses
- Group or Organization
- Individual

**Colors**

- Producers
- Technical Assistance / Education
- Restaurants (All)
- Retail Outlets
- Social Service
- Government
- Institutional Purchasers



Created with NodeXL (<http://nodexl.codeplex.com>)



## Community Case Studies

<sup>22</sup>A preliminary investigation of over 200 peer counties in the United States Department of Agriculture Economic Research Service (ERS)'s "Heartland" Farm Resource Region with a similar ERS urban influence rating and economic specialization revealed that no sampled peer counties had invested publicly in food system development.

Food system profiles illustrating a diverse range of strongly developed food system components for prominent Midwestern cities. Community food systems were evaluated on a subjective rating scale of 1 through 5<sup>23</sup> based on evident government and private investment in 7 realms of community food systems. Government and nongovernmental organizations' involvement in these areas was also estimated (See Figure 10: Peoria Region Food System Benchmark Rating and Figure 11: Selected Midwestern Food System Benchmarks).

As is the case in the Peoria area food system, in peer communities nongovernmental actors tended to provide leadership in food system development activities, while engaged local governments supported their activities. Madison, Wisconsin, is nationally-recognized for its producers-only farmers market, while Cedar Rapids, Iowa, has invested in both public and private economic development projects emphasizing local food system development. Indianapolis, Indiana, has implemented mobile market and food delivery projects that have been adapted to serve the Peoria region through gifts in the moment's Mobile Food Market.

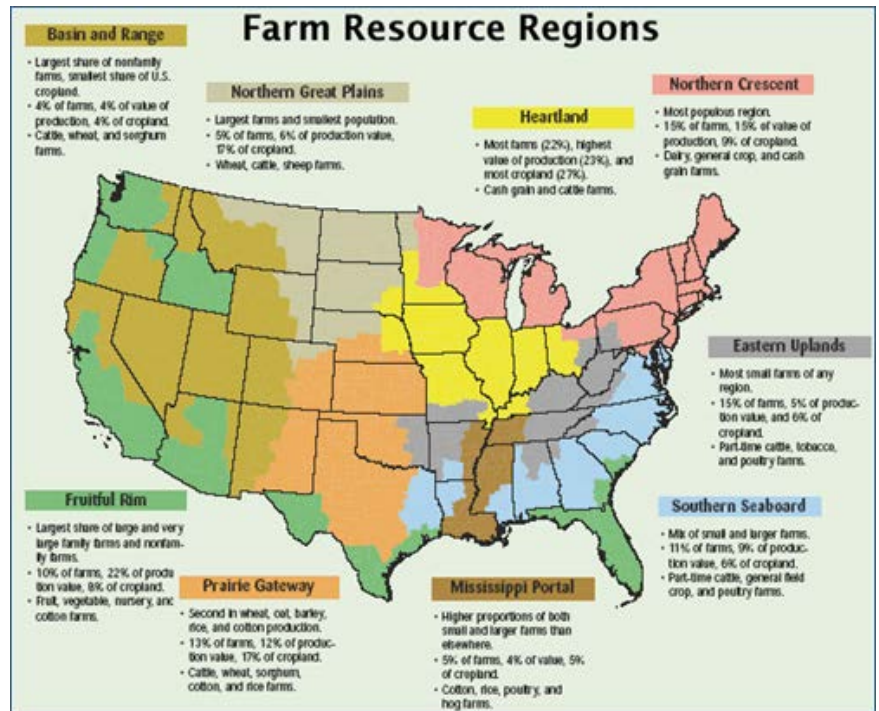


Figure 9: USDA ERS Farm Resource Classifications



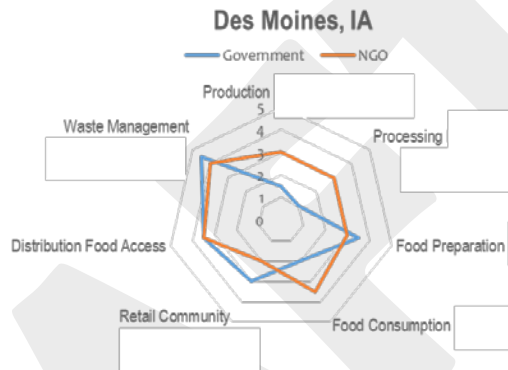
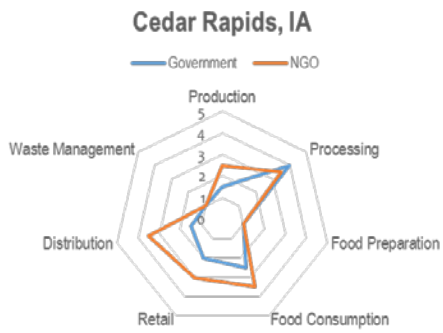
Figure 10: Peoria Region Food System Benchmark Rating

<sup>22</sup> (USDA ERS 2014)

<sup>23</sup> **Component Ratings:** 1—No obvious attention; 2—Initial organizing around this issue; 3—Significant organizing around this issue; 4—Regional recognition as a leader regarding this issue; 5—National recognition as a leader regarding this issue



Figure 11: Selected Midwestern Food System Benchmarks



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## Level of Intervention

Food system organizing stakeholders in the Greater Peoria Region primarily operate in the Direct-to-Consumer distribution of produced or donated food products or at a level of personal production of food. These components of community food system development are most appropriately scaled for local intervention.

However, current food provision in the United

States primarily relies on national and international distribution channels, several orders of magnitude more expansive, complicated, and influential that “lower level” tiers of operation conceptualized by the University of Wisconsin at Madison’s Center for Integrated Agriculture Systems (see Figure 12: Food System Tiers). The ability of local or “lower level” interventions to affect the broader food system is uncertain, especially as local systems attempt to compete with institutional inertia embedded in larger systems. Industry-wide estimates suggest that as much as 99 percent of the food consumed in the United States is purchased through some form of wholesale supply chains<sup>24</sup>.

Initial successes in developing economically viable local food systems are predicated on convincing consumers to pay more than base retail prices for food products, concludes Evan Fraser in *Empires of Food: Feast, Famine, and the Rise and Fall of Civilizations*<sup>25</sup>. With a basis in traditional low-wage, hard labor industries of agriculture, food service, and manufacturing, systems-based attention to providing fair wages to food system employees is crucial to long-term viability of local food system development.

## Unexplored implications of local food systems

As noted in the January 2015 USDA report “Trends in U.S. Local and Regional Food Systems”, applied economic impact assessments of local food systems are at best nascent, and have not addressed the implications of import substitution on extralocal economic systems, nor have opportunity costs of investing in local food systems been considered. “Without accounting for opportunity cost, economic impacts are likely to be overstated, or at least not fully understood.”<sup>26</sup>

Emerging perceptions on potential innovations in food system equity and economy recorded at the 2015 Good Food Festival in Chicago emphasized the opportunity to strengthen local foods access by reducing waste in all segments of the food system<sup>27</sup>. Nascent efforts in the United States include developing markets for aesthetically imperfect produce “seconds”, processing food waste to create

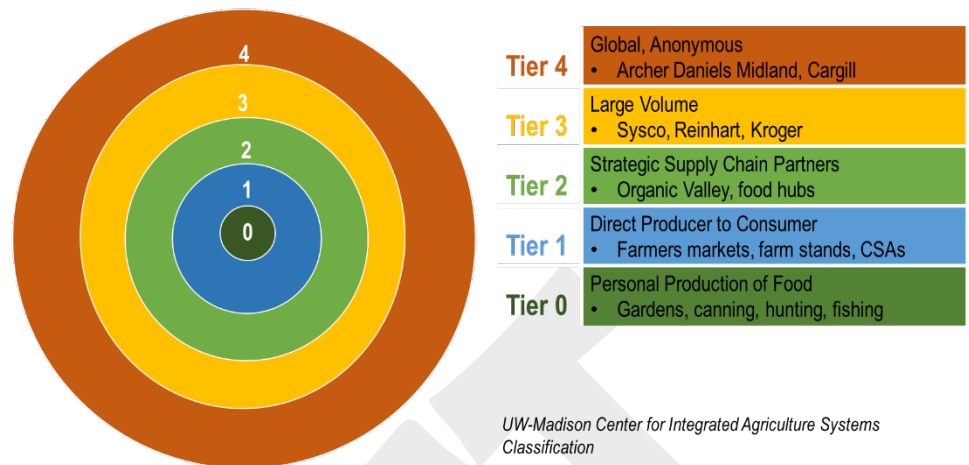


Figure 12: Food System Tiers

<sup>24</sup> (FamilyFarmed.org 2015)

<sup>25</sup> (Fraser 2010)

<sup>26</sup> (Low 2015)

<sup>27</sup> (Christopher, Leibov and Lehman 2015)

biofuels and soil amendments, and using technology and networked communication systems to redirect potential food waste “on the fly”.

### Recommendations

Despite noted uncertainties in local food system development strategies, the potential social and economic benefits of investing in local foods remain significant. Initial social and physical production infrastructure supporting local foods in the Peoria Region has been developed and documented. Moreover, there is significant stakeholder interest in continuing to strengthen the local food system.

In the Greater Peoria Region, stakeholder organizations have begun to organize around issues of agricultural productive capacity and market access barriers, and significant social and physical infrastructure has been organized around emergency food access. Activities based in the broader Chicagoland area have emphasized developing high market value local foods marketing channels, as well as expanding urban agricultural production opportunities. Public Health implications of local food system development remains a relatively unexplored aspect of food system. Through the Dietetics Internship program at Bradley University, the University of Illinois College of Medicine at Peoria, the OSF St. Francis and Unity Point-Methodist | Proctor Medical Centers, the region possesses significant capacity and interest to develop a food system that addresses health impacts. The County’s current intent to incorporate food system programming in the Public Health department will support these efforts.

Strengthening the local food system’s food preservation, waste reduction, and year-round local food provision approaches by developing programming and training to connect producers with local value-added processors can provide economic opportunities while addressing several underdeveloped areas of the local food system.

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