

NORTHWEST INDIANA LOCAL FOOD STUDY

March 2012

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Background of the Study

In 2009, the Northwestern Indiana Regional Planning Commission (NIRPC) held a series of public meetings to solicit input for the first ever Comprehensive Regional Plan (CRP) for the NIRPC region (Lake, Porter, and LaPorte Counties). During these meetings, one of the common areas of interest centered on local food. The public saw local food as an important part of our region and asked NIRPC to incorporate local food into our comprehensive planning efforts.

With a grant from the Gaylord and Dorothy Donnelley Foundation, NIRPC secured funding to:

- Convene a working group of local stakeholders to guide the development of a food systems element of the CRP;
- Incorporate the local food systems element into the CRP;
- Generate more interest and awareness in Northwestern Indiana of the value of local food production and the importance of retaining farmland;
- Form working groups to advance local food implementation strategies;
- Conduct a needs analysis and food system profile for the region to educate the working groups and others.

In November 2010, NIRPC convened over 40 regional local food system stakeholders for a half day workshop to kick off the local food study. Representatives from all over the local food system – from farmers and distributors to advocates and waste handlers –

were present at the meeting. That meeting set the food study in motion, and from it a smaller working group, the Food Study Advisory Committee (Food SAC), emerged. Food SAC began meeting regularly – generally every month – for the next year, and guided NIRPC staff in fulfilling the objectives of the Donnelley grant.

Shortly after the kickoff meeting, NIRPC developed an online survey tailored to different local food stakeholders. By the time the survey closed, nearly 90 people had responded. The survey results helped guide our work, and many are reported in this document.

In June 2011, NIRPC adopted the 2040 Comprehensive Regional Plan, which includes a section entitled “Developing Our Local Food Systems” (p. II-62 to II-67). This section looks at our local food systems and how they integrate with and advance the goals and objectives of the CRP.

After completion of the CRP, Food SAC continued to convene and provide guidance to NIRPC staff. In late 2011, work began on the writing of the Northwestern Indiana Local Food Study. This report is the culmination of that work. It looks in depth at the components of our local food system, and provides a snapshot of existing conditions. It will act as the basis for future work in this area.

We thank you for your interest in our work. Please contact Kevin Garcia, project manager for the study, at (219) 763-6060 ext. 125 or kgarcia@nirpc.org with any questions or comments.

Introduction

Overview

Like many of our neighbors in the Midwest, our agricultural landscape is diminishing due to development pressures. What agricultural land remains is dominated by the growing of commodity crops like corn and soy. Our farmers are aging and their numbers are shrinking. And, our farms are growing increasingly larger, while the total number of farms decline.

Like many places throughout the country, our region also has seen an increase in interest in local foods. Throughout our one-and-a-half year study, energized local food devotees emerged from every sector of the local food system, from farmers to chefs to waste management professionals to individual activists. The following profile of our region indicates that there is capacity to develop a burgeoning local food system in Northwest Indiana.

Profile Format

This study profiles the **five sectors of the local food system** in Northwestern Indiana. Starting with **Production**, we look in turn at **Processing, Distribution, Consumption**, and **Waste & Reuse** throughout the region. In addition, **seven regional food system issues** are discussed in sections devoted to each topic.

Sidebars

Sidebars are used throughout the document to call attention to important issues, terminology, and quotes from the text.

Data Notes

To conduct our profile, we relied on data from the USDA's Agricultural Census, the University of Illinois' MarketMaker, surveys of local food system stakeholders, information gleaned from monthly meetings of the Food Study Advisory Committee (FoodSAC), and numerous reports and studies from the US and Canada.

All data reported as an average gives the average of all counties within the given geography. For example, "National Average" means the average of all counties within the United States. "Foodshed Average" means the average of all counties within the 100 mile study area. "Region Average" means the average of the three counties in the NIRPC area.

All data referencing NIRPC surveys of local stakeholders are reported for the three-county region.

Food System Overview

Before going into the details of the local food system in Northwestern Indiana, there are two questions that should be addressed to give you, our reader, a basic understanding of what we will be focusing on for the rest of this report.

The first question is “What is a food system?”

The second is “What is meant by ‘local food system’?” Or, “How do you define ‘local’?”

We answer these questions in the sections that follow.

What is a Food System?

A food system is composed of all of the elements that make up the network that takes food from the farmer’s field and brings it to your dinner table.

There are many ways to categorize a food system, but the most basic includes these five sectors:

- Production,
- Processing,
- Distribution,
- Consumption, and
- Waste/Reuse

Every component of the food system is related to and dependent on every other component. For example,

A farmer (producer) is dependent on:

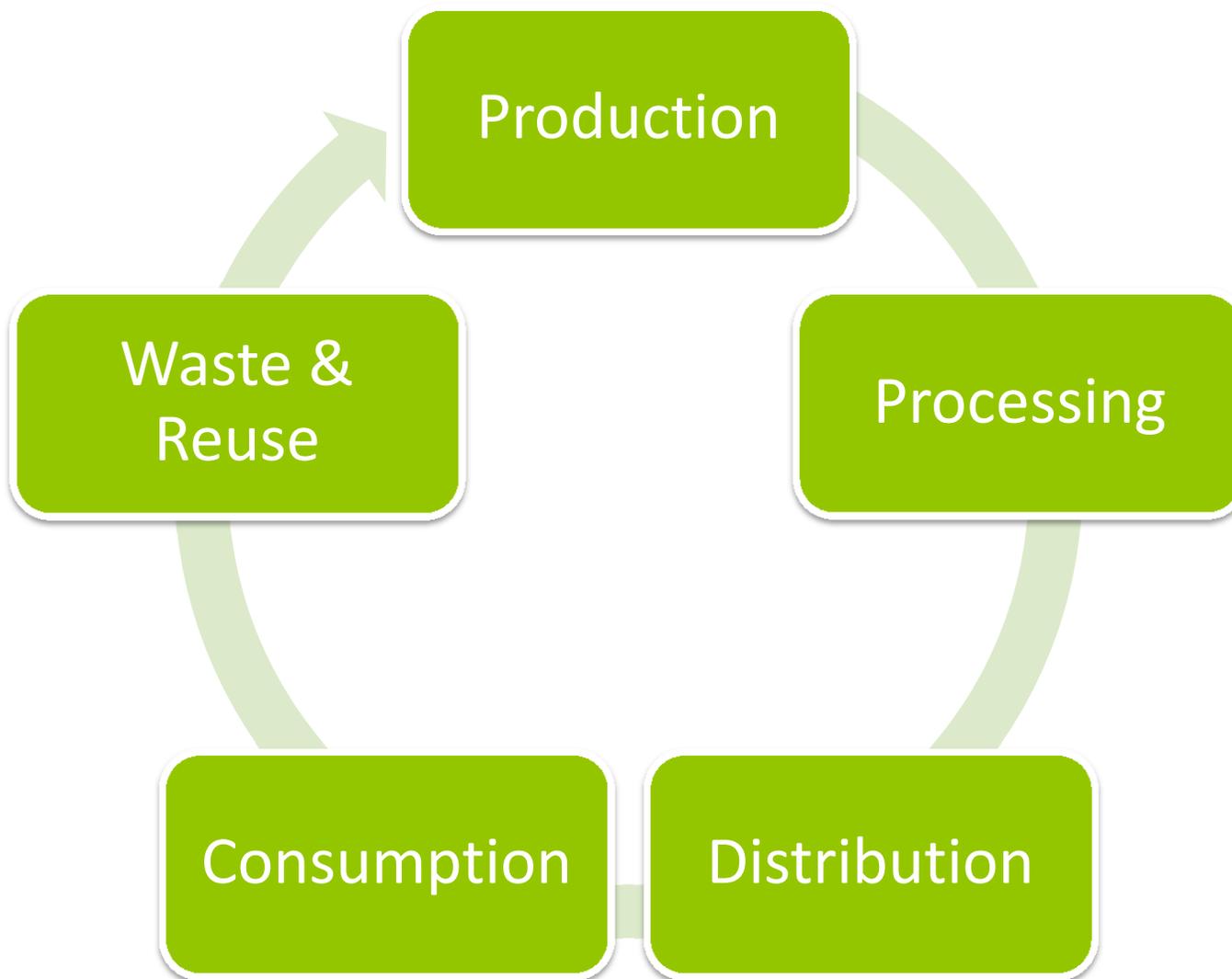
- having packing and processing facilities to handle his produce,
- a transportation system and markets to distribute his produce,
- consumers to purchase the final product, and
- a waste handling, composting, or other system to handle produce not fit for sale.

A chef (consumer) is dependent on:

- producers growing and raising quality food to use as menu inputs,
- a transportation system, markets, and other distributors to bring food to the restaurant,
- customers to come and eat the food after the chef prepares it,
- a waste handling, composting, or other system to handle food scraps and other food waste from the restaurant.

This five sector food system framework provides the basis for each section in the *Food System Profile*. Each of these is briefly explained in the diagram on the following page.

The Food System



5 Elements of the Food System

Production is the growing of agricultural products, like fruits, vegetables, grains, and animals.

Processing is taking raw agricultural products and making them ready to eat. This can be simple, like cleaning and boxing vegetables, or complex, like mechanically turning tomatoes and other ingredients into pasta sauce.

Distribution is getting the processed food to the end user. This can range from on-site farm stands where people come to the farm to purchase food, to complex global supply chains that ship food to grocery stores around the world.

Consumption is the eating of food products, both at home and outside the home.

Waste & Reuse is the handling of food scraps and other food “waste”, many of which can be turned into production inputs as soil amendments – compost – or fuel.

What is a “Local Food System”?

“Local” can be defined in many different ways. For some, “local” is a matter of time, for others it is a matter of distance, and for some others, it is a matter of quality or freshness.

The U.S. Congress defined local food in the 2008 Farm Act as food that originates within the state or within 400 miles of where it is sold. Under this definition, food from Minneapolis-St. Paul, MN, Nashville, TN, Pittsburgh PA, and Sault Sainte Marie , Ontario would all be considered local to Northwestern Indiana. Many local food enthusiasts would find this questionable. In defining its word of the year for 2007, *locavore*¹, the New Oxford American Dictionary uses a 100 mile radius. So do regional food planners in Philadelphia and San Francisco. For consumers, the definition of “local” can vary depending on the population density of their region. For those living in urban areas, “local” may only include surrounding counties, while for those living in rural areas, “local” may encompass much more territory.ⁱ

Defining local using time is closely related to using distance, but better addresses the complexities of food distribution. Unlike distance from a point, which ignores road and rail configuration, traffic patterns, geography and topography, and efficiency of shipping method, time inherently takes into account multiple factors involved in distribution. Time as a measure also better relates to the quality of local food, where freshness is affected more directly by time than by distance, especially for foods that are

¹ *Locavore*: “A person who endeavors to eat only locally produced food.”
New Oxford American Dictionary

picked ripe or nearly ripe. For smaller growers, time can be the main factor affecting feasibility of direct to consumer sales as they ration limited man-hours for employees traveling to farmers’ markets or distributing CSA² shares. Whole Foods uses a common sense method to identify local sources, distinguishing products procured from within a day’s travel (seven hours) to the store as local.ⁱⁱ

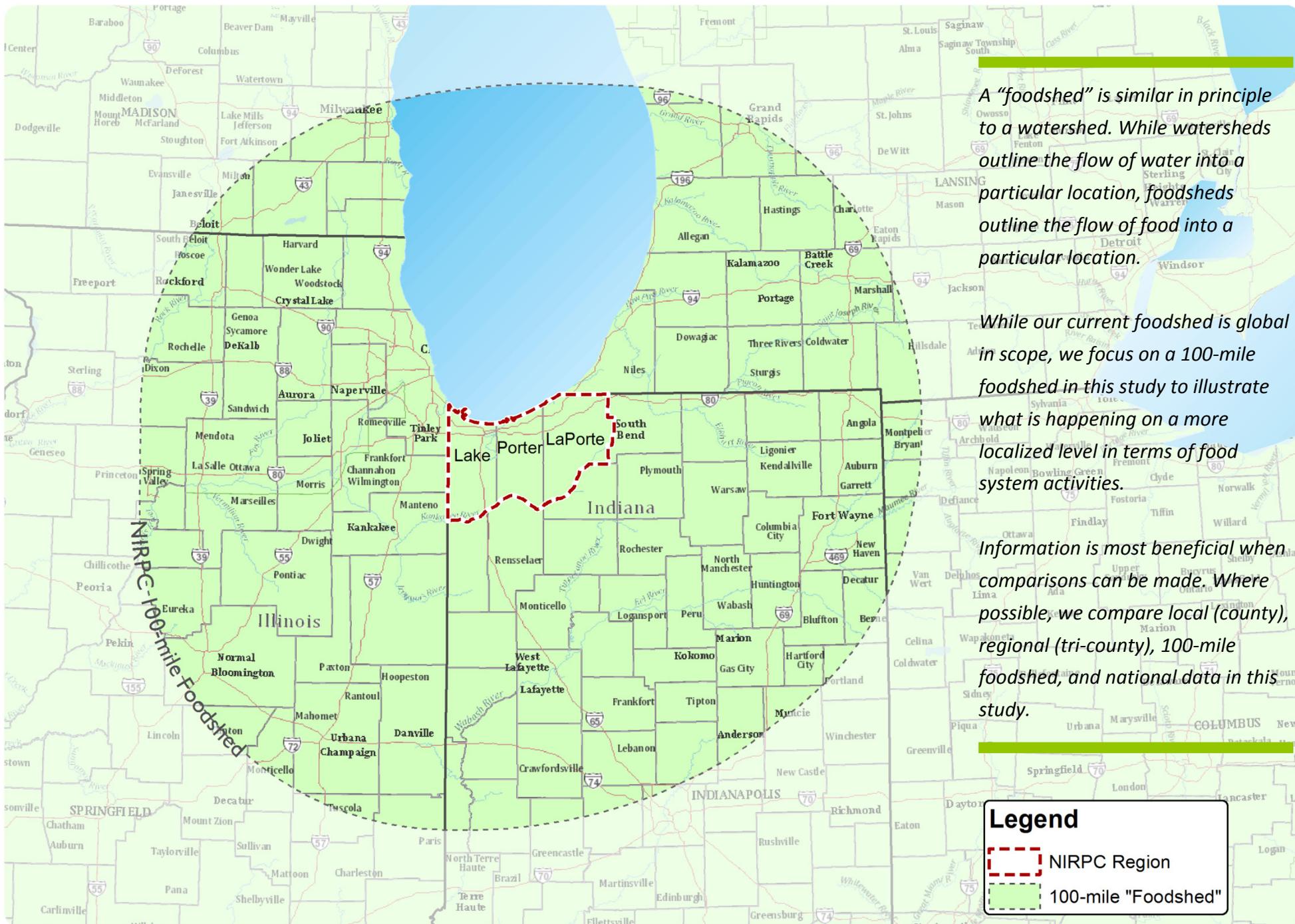
For consumers, “local” goes beyond time, distance, or freshness. It is more personal than that. Researchers find that consumers’ understanding of local food is closely tied to the “story” a product tells. Direct contact with growers, size of farm, length of supply chain, production methods, and marketing techniques all influence a product’s story and its degree of ‘local-ness’ for a consumer.ⁱⁱⁱ

Due to these considerations, we chose to follow our fellow planners in San Francisco, Philadelphia, and elsewhere and look use a 100 mile radius as our study area. The following page shows a map of the study area.

Why Local Matters

Local food has many benefits, such as fresher, more flavorful produce, decreased transportation costs and emissions, building community, and keeping money in the local economy.

² Community Supported Agriculture (CSA) is a subscription service where in exchange for an up-front fee, customers receive periodic baskets of produce directly from a farm. See “Distribution” for more on CSAs.



A "foodshed" is similar in principle to a watershed. While watersheds outline the flow of water into a particular location, foodsheds outline the flow of food into a particular location.

While our current foodshed is global in scope, we focus on a 100-mile foodshed in this study to illustrate what is happening on a more localized level in terms of food system activities.

Information is most beneficial when comparisons can be made. Where possible, we compare local (county), regional (tri-county), 100-mile foodshed, and national data in this study.

Legend

- NIRPC Region
- 100-mile "Foodshed"



Northwestern Indiana Local Food Study: Study Area

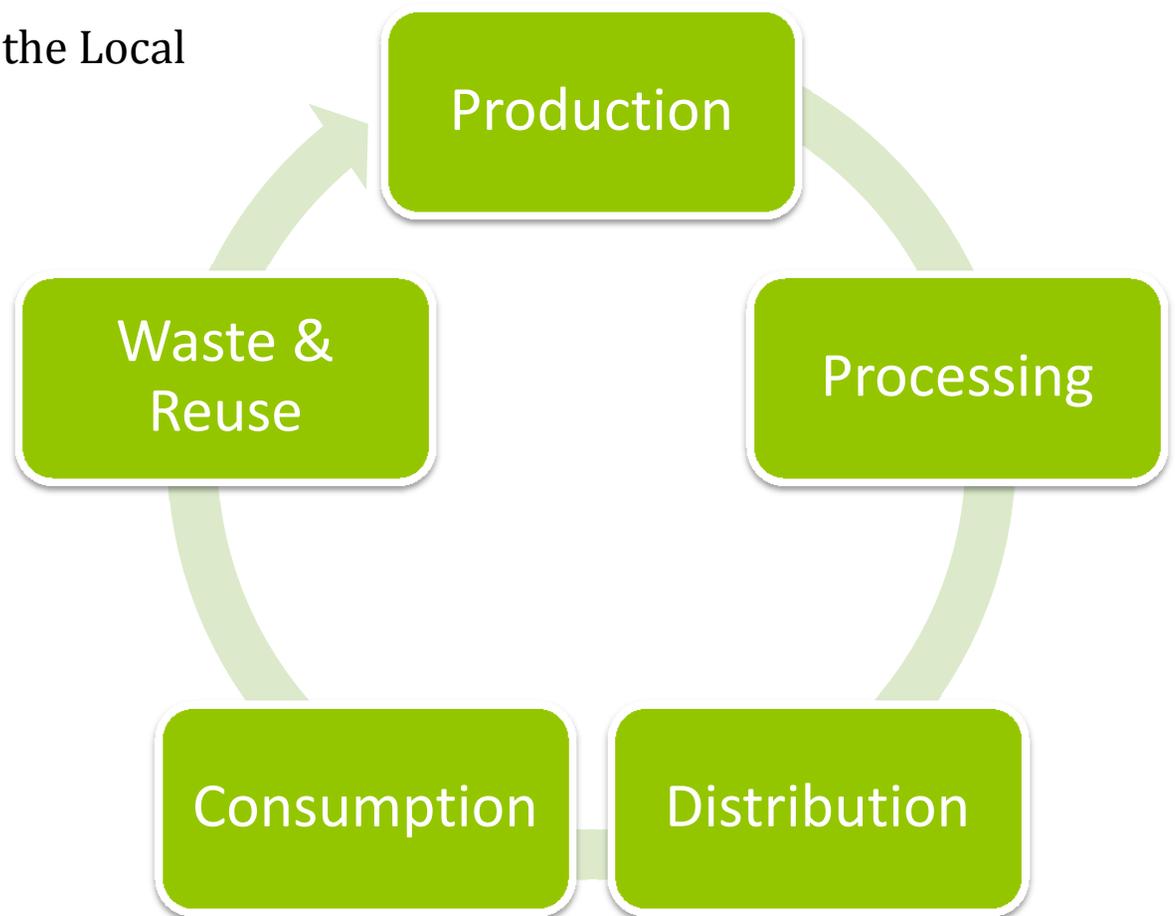
Prepared by NIRPC, Feb. 2012

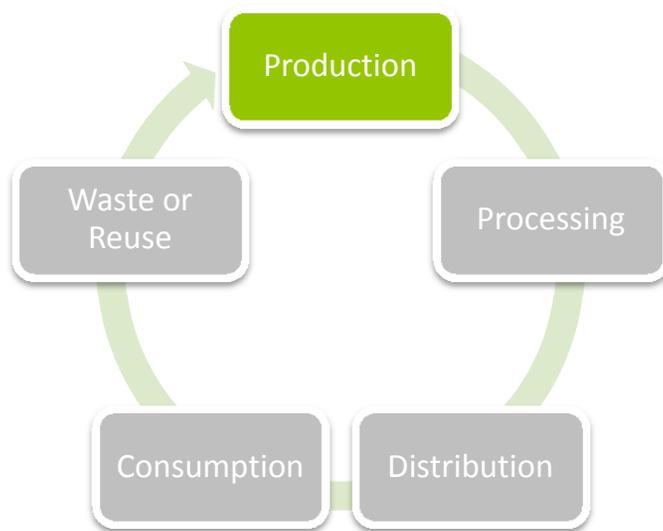
0 5 10 20 Miles



Food System Profile

Examining the Elements of the Local Food System





Production

Production, the growing of food, is a logical starting point for a food system profile. After all, food begins in the field. In a sustainable food system, every element is codependent on each of the others, so we could technically begin wherever we choose. However, since production is where the basic inputs of food begin their cultivation, we begin there.

Production is by far the most well-researched and data rich component of the food system. The United States Department of Agriculture (USDA) conducts an Agricultural Census every five years, surveying farmers about what and how much they produce, how large their farms are, their demographic characteristics, how much money they earn, their farming practices, and more. In addition to USDA data, surveys conducted by NIRPC and data obtained via the MarketMaker website provided additional insight into the production of food in our region.

Key Issues in Production:

- *Too few non-commodity (e.g. corn/soy) growers*
- *Short growing season*
- *Low profitability*
- *Inadequate labor supply*
- *Scale of system (either very small or very large, no middle)*
- *Need for citizen education on benefits of local food*

Source: NIRPC Stakeholder Outreach

What Do We Grow Locally?

There are three main questions we attempted to answer in this study with respect to local food. They are:

1. What is currently being grown for local consumption?
2. What is currently being grown that *could be* locally consumed?
3. What is the *potential* for growing food that could be locally consumed?

The USDA collects data on farms that sell directly to consumers. “Direct sales” include all “agricultural products sold directly to individuals for human consumption from roadside stands, farmers’ markets, pick-your-own sites, etc.”^{iv} This data does not include “intermediated sales”, or products sold locally through other channels, such as grocery stores, restaurants, or regional distributors. The USDA conducted a study to determine the value of goods sold through intermediated sales and found that such sales accounted for about four times those of direct sales.^v For this study, we report only direct sales figures, since those are directly measured by the USDA, rather than making estimates. One could easily come up with rough estimates of total local sales by multiplying all direct sales numbers in the following section by four, based on the findings of the USDA study.

Direct Sales: *Agricultural products sold directly to individuals for human consumption from roadside stands, farmers’ markets, pick-your-own sites, etc.*

Intermediated Sales: *Agricultural products sold locally through channels other than direct sales, such as restaurants, grocery stores, or regional distributors..*

Characteristics of local food suppliers

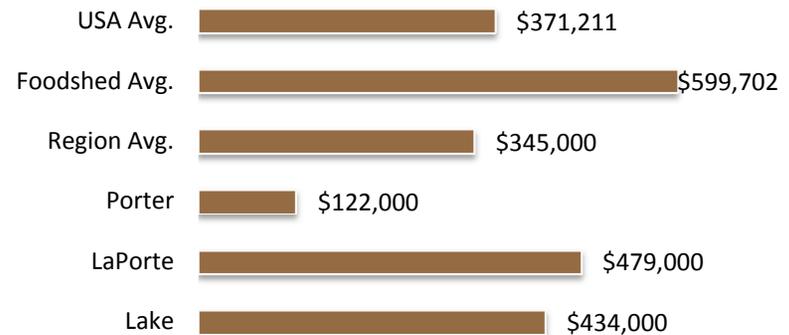
The USDA, in its 2007 Census of Agriculture, finds that, nationally, local food suppliers who engage in direct sales are generally smaller in size, grow mostly fruits and vegetables, and have access

to urban markets. The suppliers are also younger, less experienced, and are more likely to be women than are suppliers in the mainstream food system.

Nationally, a full 84% of all farms engaged in direct sales are either in or adjacent to metropolitan counties. Direct sales decrease proportionally with a supplier’s distance from a metro area. Of all farms engaged in direct sales, small farms receive the largest portion of their total income from direct sales, followed by medium and large farms, respectively:

Size of Farm with Direct Sales	Direct Sales as % of Total Sales
Small	35%
Medium	17%
Large	7.5%

Earnings From Direct Sales (2007)

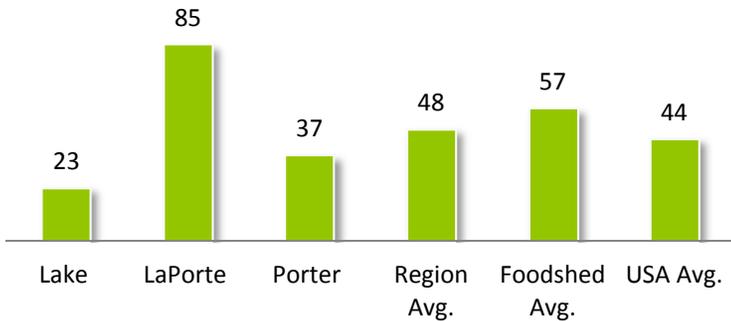


Source: USDA Census of Agriculture 2007

Since Northwestern Indiana lies within the Chicago Metropolitan

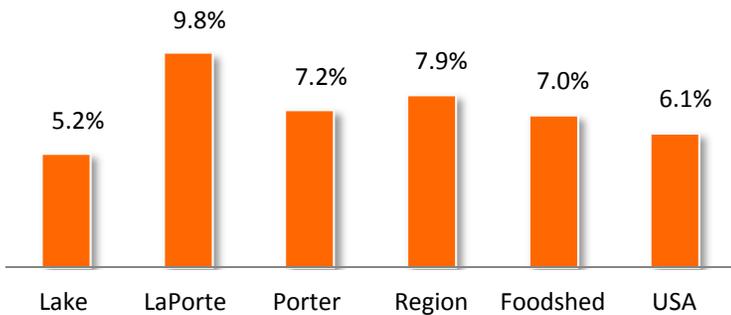
Statistical Area³, one would expect to find high numbers of direct sales farms and high earnings. LaPorte and Lake

Number of Farms with Direct Sales (2007)



Source: USDA Agricultural Census 2007

Percent of Farms with Direct Sales (2007)

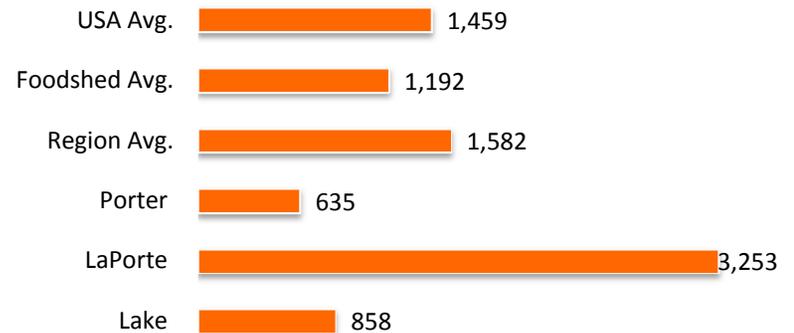


Source: USDA Census of Agriculture 2007

counties do exceed national and state averages for earnings from direct farm sales, as expected, but Porter county lags behind the national average by two thirds. The direct sales farms in Lake county, while fewer in number, do well in earnings. Of farms in the region, a higher percentage of those in LaPorte County sell directly to consumers.

Of all farms in the nation, farms whose main products are melons or vegetables are most likely to engage in direct sales (44%), followed by fruit and nut producers (17%). Vegetable, fruit, and nut producers also earn more through direct sales per farm than other producers. Only 26% of all direct sales are made by fruit and vegetable growers, but they earn 56% of the revenue from all direct sales. Fruits and vegetables are naturally suited to direct sales because they require minimal processing before sale compared to, for example, livestock.

Vegetable Acres Harvested (2007)

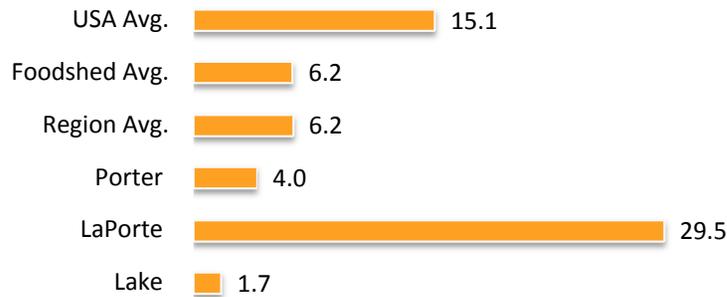


Source: USDA Census of Agriculture 2007

³ Metropolitan Statistical Areas (MSAs) are designated by the U.S. Census Bureau

It comes as no surprise then that in the region, the great majority of acres of vegetables harvested are found in LaPorte County, since LaPorte County has so many farms engaged in direct sales. Porter and Lake Counties harvest more fewer acres of vegetables than in the foodshed or the nation, on average.

Vegetable Acres Harvested per 1,000 People (2007)



Source: USDA Census of Agriculture 2007

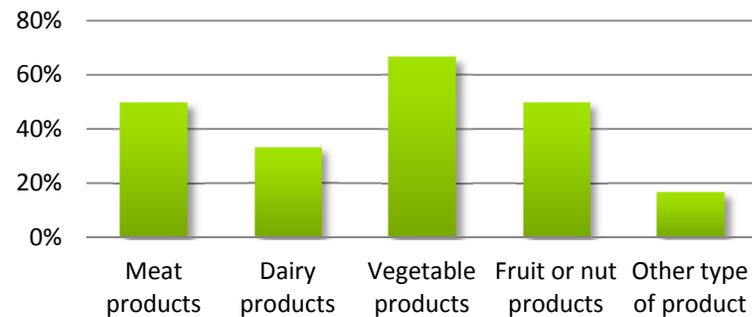
On a per capita basis, the results are similar. LaPorte County nearly doubles the national average of 15.1 vegetable acres harvested per 1,000 people, at 29.5 per 1,000. LaPorte County's numbers skew the region's average such that it matches the foodshed average. The more densely populated Lake and Porter counties harvest a very small amount of vegetables per 1,000 residents, at just a fraction of the national average.

Food Study Survey Results

Of the 25 producers who responded to the local food study survey, the majority were vegetable growers, which is not

surprising given the national trend of vegetable producers being more likely to sell locally than other producers. They were followed by meat and fruit producers, then dairy producers. Some respondents produced foods in multiple categories.

Region Producers Responding to Survey



Source: NIRPC Local Food Study Survey

Total is more than 100% due to some respondents producing multiple items .

Research by the USDA shows that direct sales are boosted if producers diversify their on farm entrepreneurial activities, like production of value added goods, community supported agriculture (CSA), or organic production (see sidebar on following page for definitions of terms). The majority (68%) of all direct sales producers practice direct sales alone and earn only \$6,844 on average. In comparison, the very few (2%) direct sales producers that engage in three or more additional entrepreneurial activities earn on average four times as much, or \$28,651 from their direct sales.

Household and community gardens

Community and household gardens make important contributions to the overall foodshed. The American Community Gardening Association estimates there are 18,000 community gardens in the United States and Canada.^{vi} The National Gardening Association estimates that 36 million, or 11.8 percent, of households in the United States grew herbs, fruits, or vegetables in 2008 and more planned to grow them in 2009. These growers eat and share what they grow with family, friends, neighbors, and local food banks.^{vii}

Currently, there is no directory of community or household gardens in the region, but Chicago's greenNet has identified over 600 active community gardens over 50 wards in the city of Chicago. Recent efforts by GrowNWI, a new joint project by County Line Orchard and many regional partners, may help identify existing community gardens in the region. GrowNWI's overarching goal is to promote and support urban agriculture and community gardens in Northwest Indiana.

MarketMaker – Building Local Food Networks

The MarketMaker website at <http://in.marketmaker.uiuc.edu/> is an excellent resource for connecting local food consumers and practitioners to one another.

Started at the University of Illinois, the site has expanded to 18 states, including Indiana. Throughout this report, we will share maps created from MarketMaker data for our region. The first is on the following page, showing local producers.

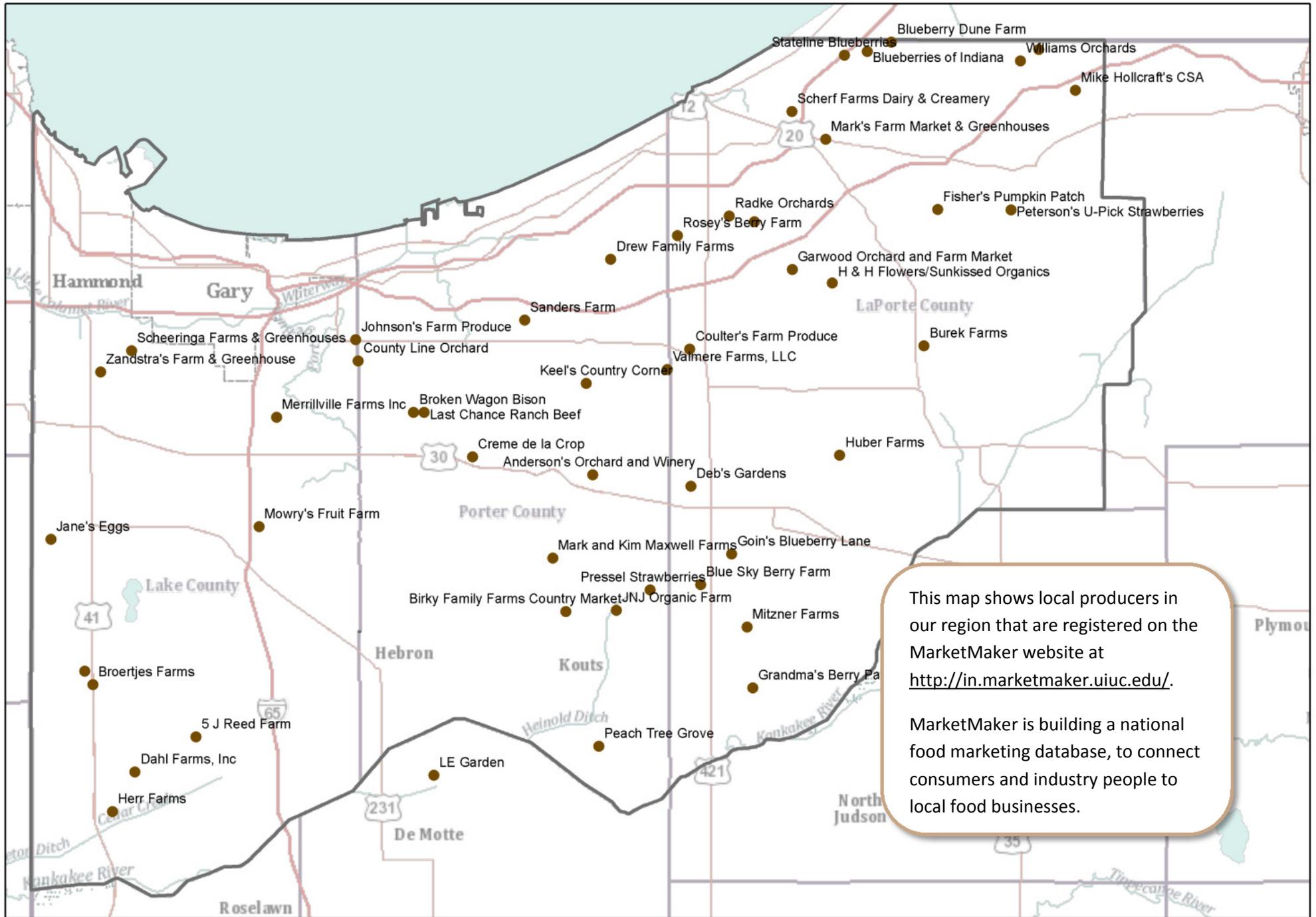
While not an exhaustive list (you must sign up with MarketMaker to be listed), MarketMaker is probably the most comprehensive database of local food resources available.

Value Added Goods: Generally, “value added” can be thought of as changing a raw product into something that commands a higher price, like turning raspberries into jam. It also includes production practices, like hand-churning butter.

Community Supported Agriculture (CSA): A subscription service where customers buy a “share”, usually purchased before the growing season, of what a farm produces that year. Regularly deliveries or on-site pickups occur throughout the season. Since shares are purchased in advance, farmers have a greater deal of security, and customers get high quality, local produce on a regular basis.

Organic Farming: Definitions vary. We like this one: “Most simply... a system of farming that does not use synthetic chemicals, and instead, mimics natural systems.”

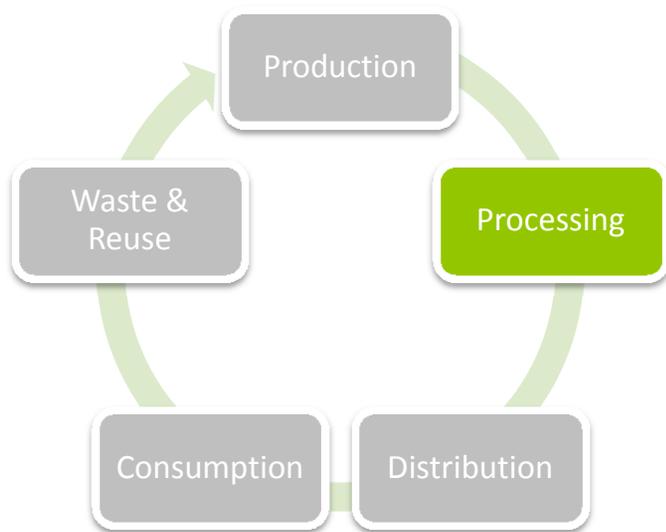
-Rodale Institute, 2011



This map shows local producers in our region that are registered on the MarketMaker website at <http://in.marketmaker.uiuc.edu/>.

MarketMaker is building a national food marketing database, to connect consumers and industry people to local food businesses.





Processing

Processing is key to any food system, since most food has to be processed in some way before being eaten. Processing can be very simple or very complex, but without the proper facilities to turn raw agricultural produce into final products, like jams, salsas, or steaks, our local food system cannot flourish.

Throughout America in the 20th Century, the industrialization of agriculture and consolidation of processing into ever-larger

facilities created a system where there are some small processors, some very large processors, and few (if any) medium-sized processors. Northwestern Indiana reflects America in this way. There are a handful of local processors in the region, but these are almost all small scale (see the map at the end of this section for an illustration of local processors. These are mostly, if not all, small scale).

Key Issues in Processing:

- Too few processors in the region
 - Difficulty in scaling up from small- to medium-scale operations
 - Excessive and/or misguided regulations
 - Too few inspectors
-

Medium-Scale Processors Needed

The USDA cites several studies that have indicated that the lack of infrastructure, especially mid-size aggregation and processing facilities, is holding local food production back throughout the United States.^{viii} This echoes what we learned through stakeholder meetings and surveys throughout our study.

USDA reports that a lack of investment capital – startup costs – to develop processing facilities can be a significant barrier for people looking to start such businesses to serve the needs of local producers. They also report that farmers have said that

“regulatory and processing barriers to meat and value-added product sales present significant obstacles to increasing local sales.”^{ix} Though demand is high, small processors are unable to meet demand due to capacity constraints, lack of equipment and human/financial capital, and achieving acceptable inspection status for scaling up.^x

On the opposite end of the spectrum, very large producers are reluctant or unwilling to process small- to medium-sized orders from producers, preferring the certainty and profitability they get from dealing with larger producers.

Incompatible Regulations

Regulations that are designed for large industrial food processors are often incompatible with smaller and midsize processors, and they are often impossible to comply with given the limited financial resources of small- and medium-size producers. If a smaller producer wants to scale up operations, but to do so requires investing in expensive equipment to meet such regulations, the processor will likely stay small rather than risk an investment they cannot afford. While it appears some progress is being made on this issue, regulations that make sense at all scales of operation will be needed to ensure the viability of local food systems.

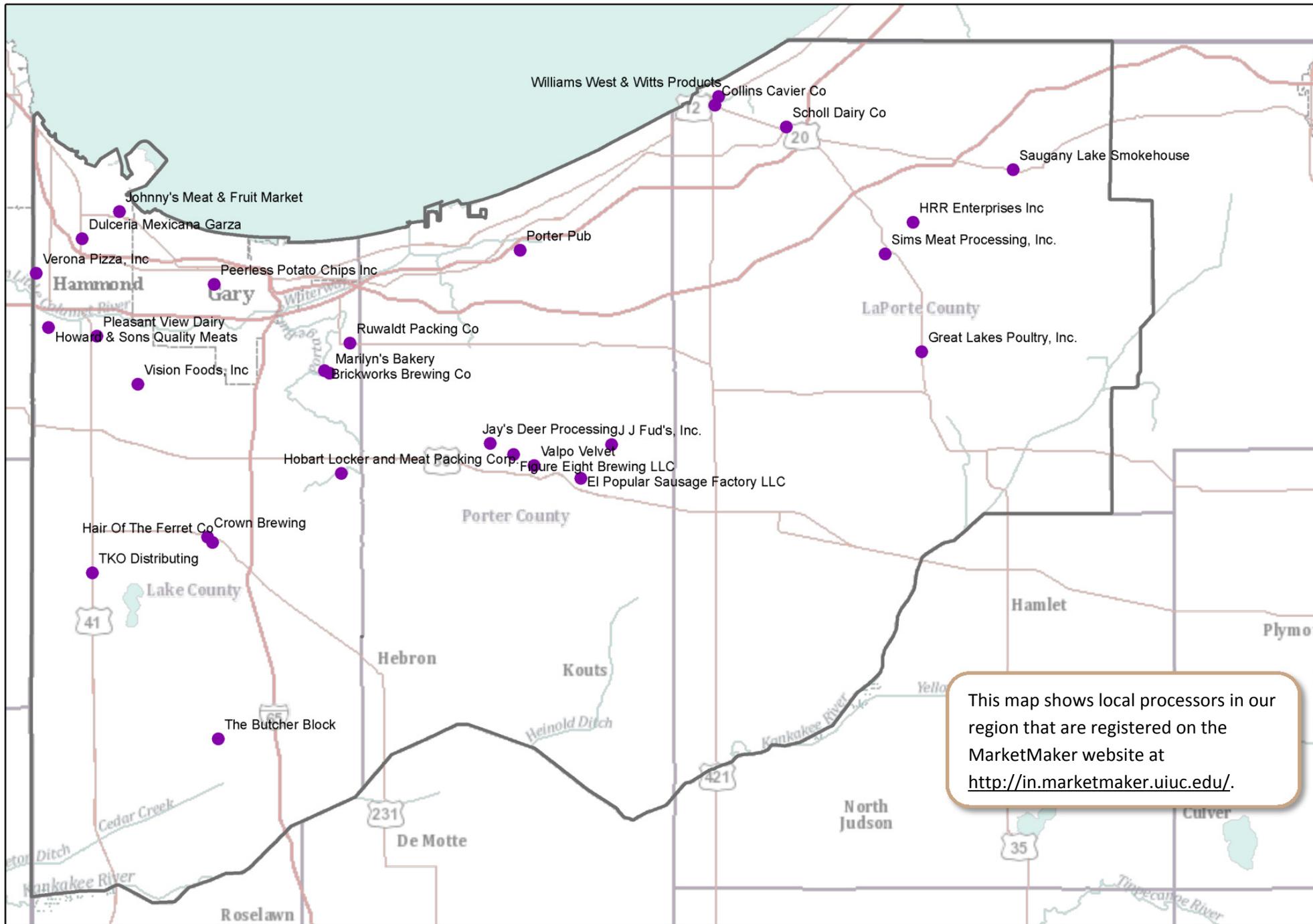
Food Hubs

“Food hubs” act as centralized coordinators for local and regional food supply chains. They can aggregate, process, distribute, and/or market local food products.

The USDA is promoting food hubs as a way to fill gaps that were created as the agricultural industry scaled up over the past century.

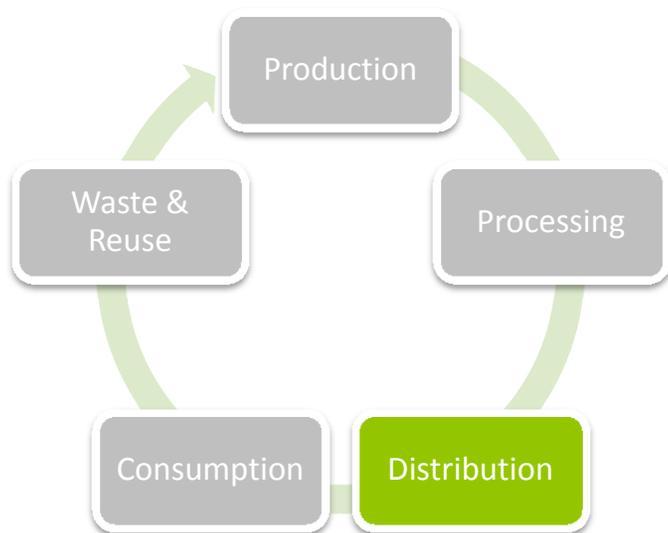
NIRPC has been an active member of the **Great Lakes Food Hub Network** (GLFHN) for the past two years. GLFHN is a group made up of food system practitioners and advocates from the Great Lakes region, from Wisconsin to Pennsylvania. As the name suggests, the goal of GLFHN is to develop a network of regional food hubs to share common knowledge and resources, and to develop local and regional food systems.

Northwest Indiana can tap into the expertise of GLFHN to develop our own food hub to meet local needs for aggregation, processing, and distribution, and to fill a noticeable gap in the Great Lakes Food Hub Network.



Local Processors

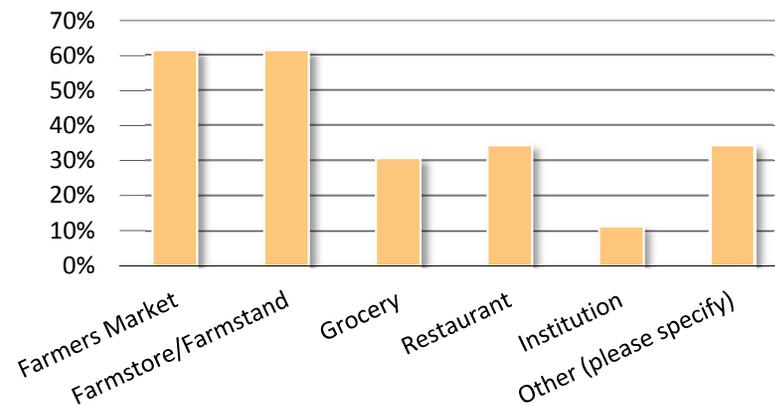




Distribution

Producers responding to the survey market primarily in Lake and Porter counties within the region and other nearby counties like Cook, Lake and Will counties in Illinois, St. Joseph county in Indiana, and Berrien county in Michigan. The breadth of marketing choices geographically and by retail venue indicate that many of the respondents diversify their marketing outlets.

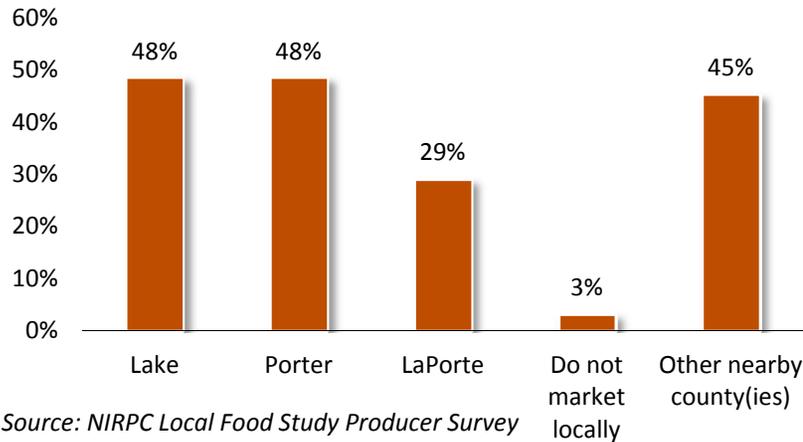
How Producers Market



Source: NIRPC Local Food Study Survey

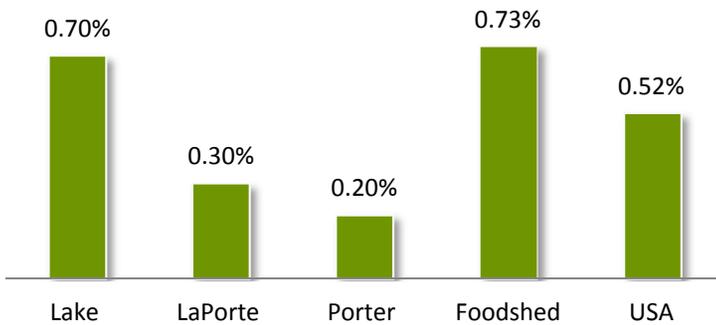
Although gross figures for number of farms and direct to consumer sales in the region are comparable to state and national averages, considering the region's dense population and proximity to an urban center, Northwest Indiana could do much more in direct sales. Figures detailing the portion of farm sales income from direct to consumer sales indicate that compared with national averages, the region lags behind its potential. With an abundance of fertile land and a dense population within close distance, our region should be able to greatly increase direct to consumer sales.

Where Producers Market



nationally, most local food is sold through traditional retail establishments. The research firm Packaged Facts reported that in 2007, only 24% of local food was sold through direct-to-consumer operations.^{xi} Retailers of local food include national grocery chains, small, independent grocers, health and natural food stores, and consumer-owned food cooperatives. Many of the largest national grocery chains make some effort to market local foods, including Walmart and Meijer, however their definitions of local and commitment to supporting local growers varies. (Id.) Research suggests that smaller independent grocery stores with established ties to a specific region find it easier to market themselves as purveyors of local foods. (Id.)

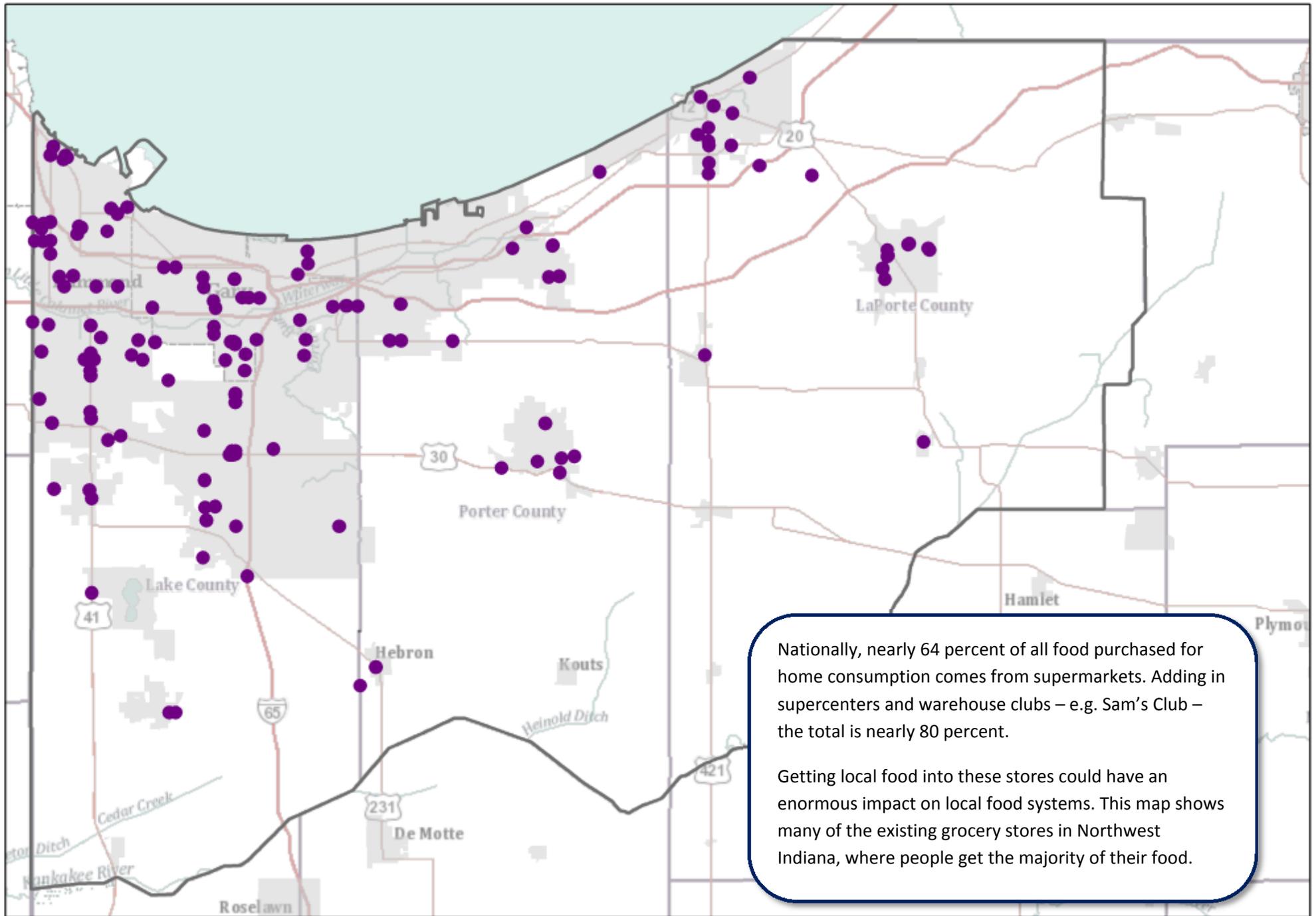
Percent of Farm Sales Income from Direct Sales



Although the sample size of our survey’s retailer respondents is statistically insignificant, their reports of the challenges of sourcing local food are valuable. Of the four retailers that responded to the survey, all four reported that they source locally whenever possible. The respondents sourced food in a variety of ways, using distributors, farmers markets and going direct to farmers.

Groceries and food stores

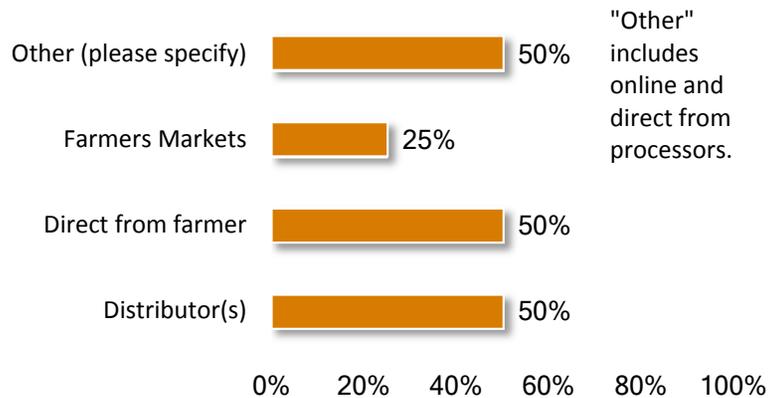
Although farmers markets and farm stands may be the most visible manifestations of local food, research suggests that



Nationally, nearly 64 percent of all food purchased for home consumption comes from supermarkets. Adding in supercenters and warehouse clubs – e.g. Sam’s Club – the total is nearly 80 percent.

Getting local food into these stores could have an enormous impact on local food systems. This map shows many of the existing grocery stores in Northwest Indiana, where people get the majority of their food.

Retailer Local Food Sources

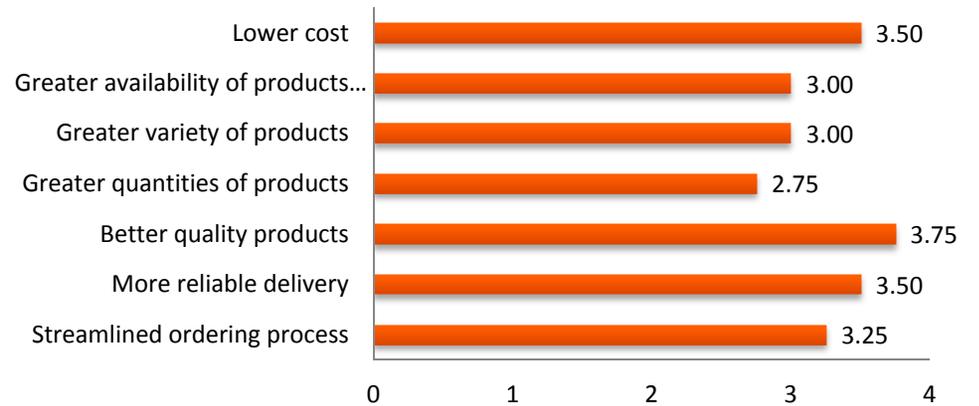


Source: NIRPC Retailer Survey

Other ways retailers sourced food is online and directly from manufacturers. Retailers ranked better quality local products as the most important factor in sourcing more local food, followed by lower cost and more reliable delivery. Retailers report that they need more farmers with reliable availability that can get the goods to the stores. Additionally, it is necessary to be able to identify the products at point of purchase through the store’s PLU (price look up) system and provide invoicing and consumer packaging that is COOL (country of origin labeling) compliant. A retailer also reported that working with local farmers would be easier if they could project their purchasing needs seasons in advance.

The following maps show many groceries, specialty food stores, and convenience stores in the region. Some specialty food stores and few full service groceries work with local producers. While convenience stores are not commonly considered as distribution

Which of the Following Would Help You Source More Local Food? (Retailers)



Average Rating. 4 = Most Important

Source: NIRPC Retailer Survey

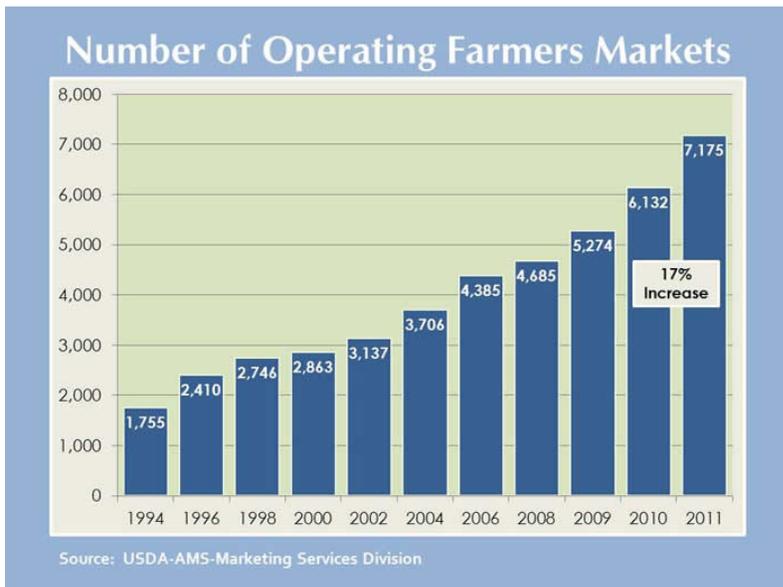
channels for local food, as stakeholders have pointed out, they could easily sell ready to eat local foods with longer shelf lives, like apples, honey, and canned value added items.

Direct-to-Consumer Markets

Direct-to-consumer marketing is the face of local food, representing the way the local food system is most easily recognized by the general public. Direct-to-consumer marketing includes farmers markets, community supported agriculture (CSA), U-Picks, roadside stands, and on-farm stores. Data about these kinds of markets is tracked by the Census of Agriculture, a survey conducted every five years by the USDA’s National Agricultural Statistics Service, most recently in 2007. The data

collected for the Census of Agriculture is limited in its applicability to local markets by the definitions for direct marketing and sales, which include internet sales where products may be shipped long distances.^{xii} Still, we can use the data to see general trends in direct-to-consumer marketing. Nationally, direct-to-consumer sales are a small but fast growing segment of agriculture, making up only .8% of the total market share, but showing a 120% increase from 1997 to 2007. From 2002-2007, growth was concentrated in larger farms (sales over \$50,000 annually) and farms which specialized in fruit, vegetables, or beef.^{xiii}

The USDA has been collecting information about farmers markets since 1994. From that point until 2010, farmers markets in the United States grew by 249%, with steady increases each year.^{xiv} From 2009-2010, the Midwest saw the largest percent increase of numbers of markets out of any region.

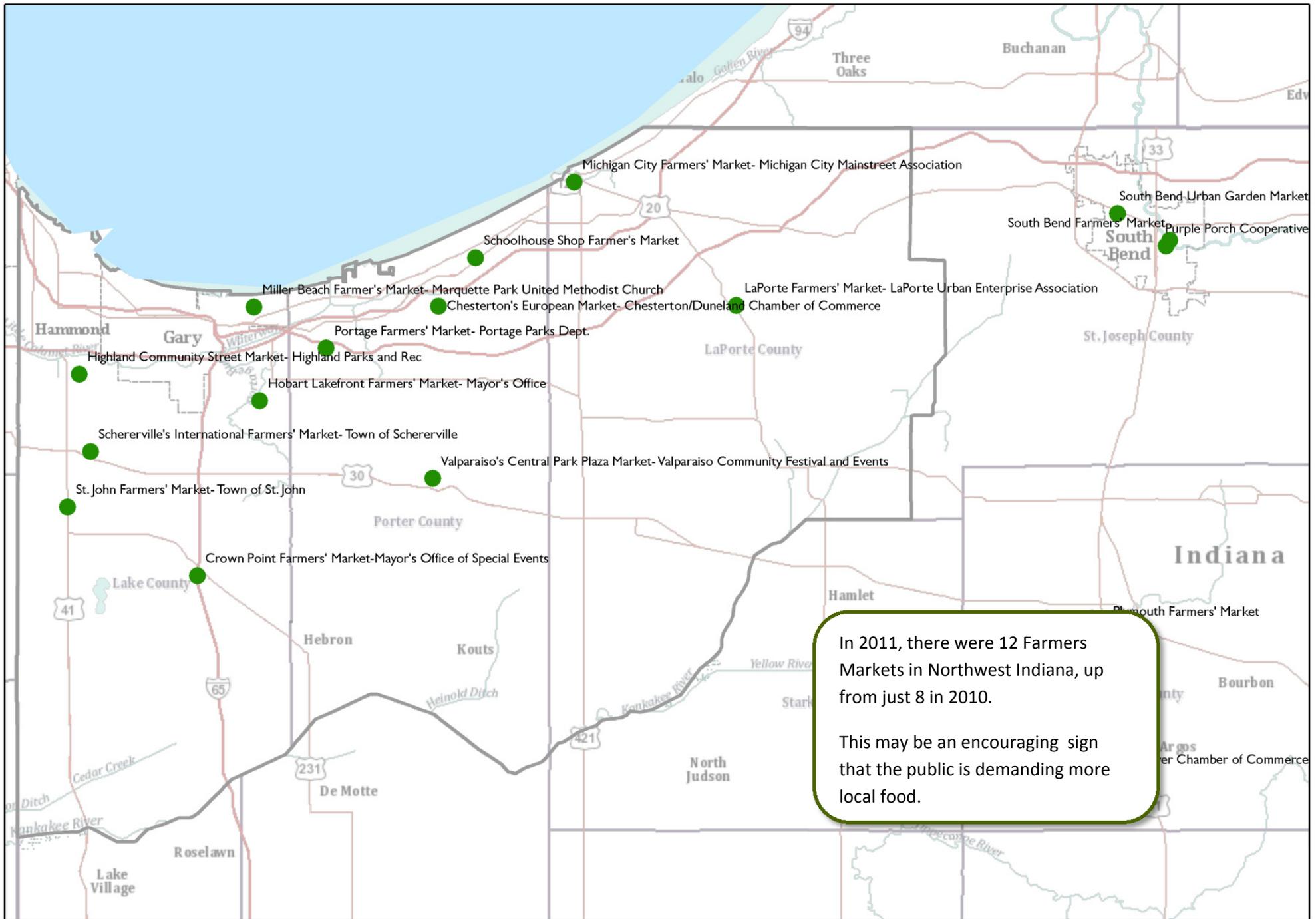


Farmers Markets

In 2011, our three county region counted 12 farmers markets, up from 8 in 2010. The 50% increase in our region is above the state increase of 37% and the national increase of 17%. Indiana has 171 farmers markets total and ranked 5th in the nation in growth from 2010 to 2011. Neighboring states Illinois and Michigan boast high numbers of farmers markets (305 and 349, respectively). Michigan also ranks high in growth, up 30% from 2010.

Farmers markets in our region are typically sponsored by an organization, municipality or business and provide temporary space and infrastructure for multiple vendors to sell direct to the public. Farmers markets are fairly well distributed in major population centers, with the exception of the eastern-most communities along the lake like East Chicago and Hammond.

Nationally, about 12% of farmers markets have the capability of accepting SNAP (Supplemental Nutrition Assistance Program, formerly known as food stamps) benefits onsite. In our region, none of the farmers markets currently accept SNAP. The Valparaiso farmers market, however, does accept WIC (Women, Infants and Children Program) cash value vouchers and participates in the Senior Farmers Markets Nutrition Program. Valparaiso is the sole farmers market offering these services to low-income residents of the region.



In 2011, there were 12 Farmers Markets in Northwest Indiana, up from just 8 in 2010.

This may be an encouraging sign that the public is demanding more local food.

National research shows that farmers markets are often the first point of entry to the marketplace for small and medium sized producers, serving as business incubators.^{xv} From the point of view of the consumer, farmers markets allow consumers to develop relationships with the people who grow their food and provide the opportunity to support local farmers. Farmers markets can benefit the local economy by enlivening business cores, as in the case of the European Market in downtown Chesterton. Farmers markets also hold the potential to offer fresh food to communities where access is typically limited. Although farmers markets have the potential to help support a thriving local food system, it is often difficult. Although many of the foods at farmers markets may be produced locally, it is not a requirement of all markets. In the USDA Agricultural Marketing Service’s 2006 Survey of Farmers Market Managers, it was found that only 63% of markets require vendors to sell only products they produced.^{xvi} Furthermore, due to the lack of standard definition of local food, among markets that distinguished local food from non-local, the range of distance away from the market that qualified as local may vary from within the county to within the state or as far as 100 miles away.^{xvii}

Results from our local food survey indicate that regional farmers markets are not as connected with the local food system as they could be. Half of the region’s market managers responded to the online survey. These managers reported that half of the markets require vendors to declare where their products were grown or processed. Only one manager reported that the market had defined “local.” One third of markets are unable to find sufficient vendors to sell local food. Half of the managers estimated that

the percentage of their market made up of local food vendors was 25% or less. Half of the managers responded that the biggest challenge in promoting or requiring locally grown or processed food at markets was simply finding vendors.

What percentage of the food vendors at your market sell primarily local products?	Response	
	Responses	Percent
None	0	0%
25% or Less	3	50%
25% to 50%	0	0%
50% to 75%	1	17%
75% to 99%	2	33%
All of them	0	0%
I'm not sure.	0	0%

Source: NIRPC Local Food Study Survey of Market Managers

Market managers report that education of the public about local foods, increased support for fledgling growers and producers and a means to find vendors would help increase the amount of local food vendors at their markets.

Community supported agriculture

Another sector of direct-to-consumer agriculture are farms operating through community supported agriculture, or as they are commonly referred to, CSAs. A CSA operates on the basis of selling shares in advance of the farm’s expected harvest to individuals and institutions. The shareholders pay a set amount in advance, usually in a pre-season lump sum or in limited installments throughout the season. Some farms require or offer time spent working on the farm in exchange for a reduced share price. The shares of produce, eggs, milk, and/or meat are picked up at the farm or distributed to local centers and individual homes. The share arrangement spreads out the inherent risks and windfalls of agriculture among all shareholders, instead of

residing solely with the farm. If a storm wipes out a portion of the harvest or there is a bumper crop, the shareholders will receive less or more in their weekly or monthly allotment, regardless of the amount paid in advance for the share.^{xviii} The Agricultural Census has not collected information on CSAs long enough to track national trends or growth, based on information from Local Harvest, a national online resource to connect consumers with CSAs, farmers markets, and other forms of local direct-to-consumer agriculture, the numbers of farms operating as CSAs is growing, with over 2,500 farms currently registered to offer shares, growing from a mere 2 farms in 1986.^{xix}

The 2007 Agricultural Census estimates that as many as 12,549 farms nationwide marketed products through a CSA arrangement. The discrepancy between Local Harvest’s numbers and the estimate from the USDA may be due to numbers of farms actively marketing their CSA versus those with informal CSA arrangements. The difference may also be attributed to the fact that many CSA shares are comprised of products from multiple farms, although they may be marketed and distributed through a single grower. One study surveyed Midwestern CSA operators and found that 29% of farms also distributed products grown by other local farms in their shares.^{xx}

Our research using Local Harvest and stakeholder input indicates there are at least four CSAs operating in our three county region and many more in adjacent counties. Shares from region CSAs range in size, price, payment structure, and number of farms supplying the CSA.

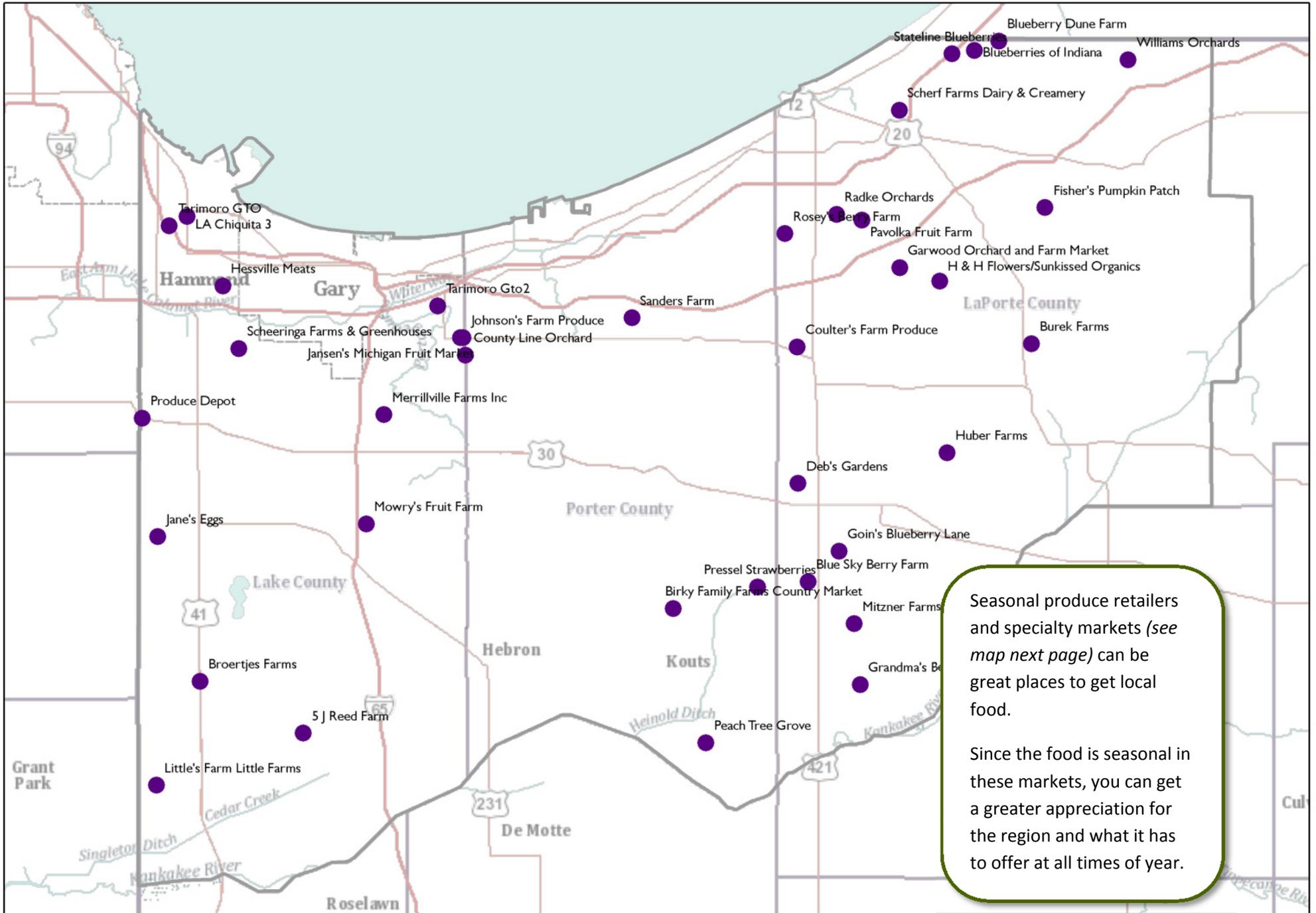
“We need to support initiatives like a growers guild and a regional food hub.”

*-Sandra Rodriguez, Miller Beach Farmers Market Manager/
Stewart House Urban Farm and Garden Project Manager*

U-Picks, Farm Stands and Farm Stores

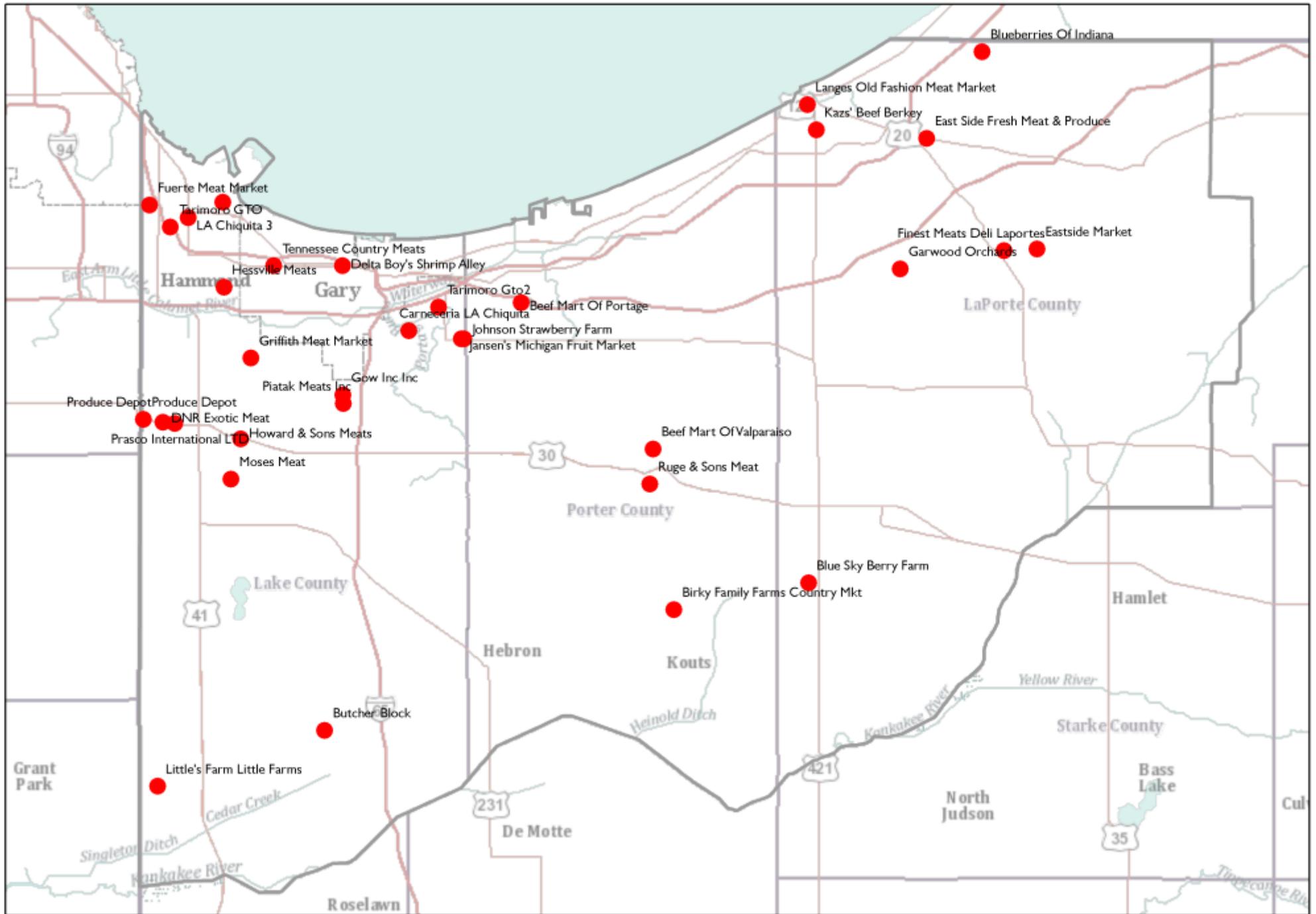
Other types of markets that operate direct-to-consumer are U-picks, farm stores, and farm stands. U-pick operations are most effective for products that are not easily harvested by machine but require no expertise to harvest by hand, like berries, tomatoes, pumpkins, and Christmas trees.^{xxi} Berries and apples are popular U-pick products in the region, which counts at least 20 locations.

Farms stores refer to permanent on farm structures which sell produce from the host farm and possibly other local farms. They may also be associated with a U-pick operation. Farm stands can be stationary or mobile and typically operate seasonally, selling products roadside, either on or off the farm.^{xxii} Using MarketMaker and the Indiana Department of Agriculture Guide, we identified at least 13 farm stores in the region.



Seasonal Produce Retailers





Region Specialty Markets

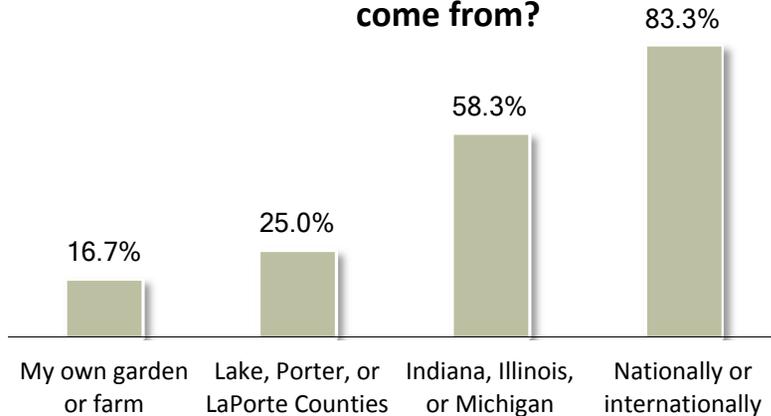
Prepared by NIRPC, Sept. 2011. Source: MarketMaker Data 2010.



Restaurants and Institutions

Foodservice marketing includes selling to restaurants and institutions like schools, hospitals, and prisons. Relationships between farms and institutions are mutually beneficial, with the institutions receiving fresher food and farmers accessing a dependable market.^{xxiii} The National Restaurant Association reports increasing interest in local foods in restaurants, with locally sourced produce, meat, and seafood as the top “hot trends” for 2010. (National Restaurant Association 2009) The Association’s 2009 survey found that 90% of fine dining and 30% of quickservice operators believed that local foods will continue to grow in popularity.^{xxiv}

Where does the food you purchase come from?

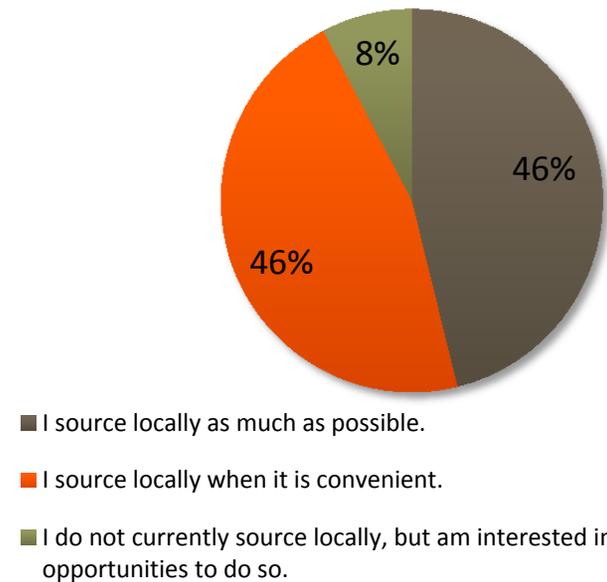


Source: NIRPC Restaurant & Institutional Survey

Food buyers from seven restaurants, four schools and a food bank weighed in on the local food survey. Overall, they were enthusiastic about local foods, reporting that they either already sourced locally or would like to.

Although 92% of respondents reported that they source locally as much as possible or when convenient, provenance of food purchased was weighted heavily toward non-local sources, indicating unmet demand.

Which best describes your approach to sourcing food locally?



Source: NIRPC Restaurant & Institutional

Respondents reported that they mainly get food through distributors, mainly Gordon Food Service and Sysco. Others went to farmers markets, went direct to the farmer, or used jobbers (small wholesalers who sell only to retailers and institutions).

Institutions ranked reliable delivery as the most important factor in being able to source more local food, followed by better quality products, greater availability of products throughout the year, and a more streamlined ordering process.

When reporting on challenges of sourcing local food, many institutions mention the same issues. Two thirds of institutions cited availability of local food as a challenge. The same amount reported that delivery was a major issue. A little over 40% responded that coordination with farmers and other local food vendors is a challenge, as is obtaining adequate volume for their needs. Other challenges noted were HACCP⁴ tracking, price, and seasonal limitations. When asked what most would help them to source local food, institutions overwhelmingly reported a streamlined, centralized ordering and delivery system. These responses reflect the work recently done by the USDA’s Agricultural Marketing Service on food hubs, which they describe as central coordinator of supply chain logistics for local foods^{xxv} and a solution to problems of coordination, ordering, and distribution.

Even though five schools responded positively to sourcing local foods in the survey, the region is yet to have an official farm to school program. The National Farm to School Network estimates

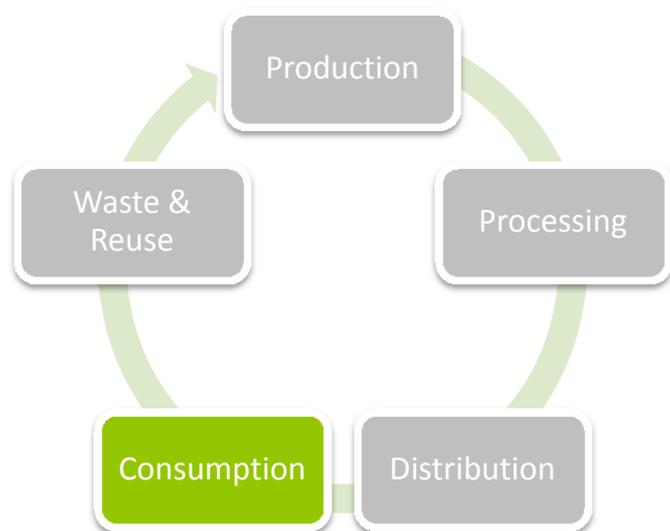
⁴ HACCP stands for hazard analysis and critical control points, a federal food safety management system used in commercial food preparation.

that over 2000 schools operated a farm to school program in 2010, a number that has grown from just 6 schools less than 10 years ago.^{xxvi} In farm to school programs, relationships with local farmers provide schools with fresh local produce and opportunities for experiential learning through farm visits. Some farm to school programs also grow food for school lunches on site, incorporating school gardens into the curriculum as tools for hands on learning.

Which of the Following Would Help You Source More Local Food? (Institutions)



Although outreach to hospitals during the study was weak and none responded to the survey, partnerships between local producers and hospitals seem like a natural fit. The large, stable and relatively immobile population of health conscious consumers that make up the staff and patients at hospitals have been found to especially appreciate local foods marketed through hospital cafeterias.^{xxvii}



Consumption

There are many reasons people choose to buy local, top among them freshness, quality, benefits to the local economy, benefits to the local environment, and value.^{xxviii} Although many studies have been conducted to determine the characteristics of local food buyers, they tend to produce conflicting results, and are therefore limited in their usefulness. Determining consumers' willingness to pay a premium for local foods has been clearer. The USDA Economic Research Service (ERS) compared ten studies of willingness to pay and found that in random sample

trials, consumers on the whole were willing to pay between 9% and 50% more for a local food product. However, determining who of the general public is more likely to pay more for local food was less conclusive. ERS found that neither gender, education, nor income is a factor determining the willingness to pay more for a local food item.^{xxix} The comparison found commonalities in values of consumers who were willing to pay more for local food. Local food buyers prioritized quality, nutrition, the environment, and supporting local growers (Ibid.).

Although the local food survey did not initially seek input from individual residents of the region about their experience with local food, after a strong response from individuals, a category was added to the survey to seek their feedback. Twenty-four individual consumers responded to the survey. In open ended responses, individuals in the region echoed many of the same reasons for choosing local food that appears in current research. Respondents valued local food for the following reasons, beginning with the most reported response:

1. Supporting the local economy/local community
2. Environmental issues
3. Freshness/taste, tied with health

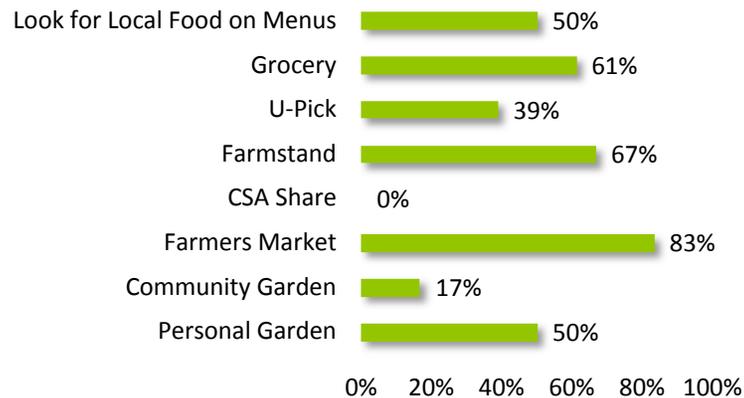
Local consumers most often look to farmers markets to find local food, but also go to farm stands, grow their own food, and seek out local options on restaurant menus. When asked what would make choosing local foods easier, residents responded that year

round availability and local options in grocery stores would help most.

In national research, restaurants and institutional buyers echoed many of the same values as individual consumers in Northwest Indiana and across the nation.^{xxx} Grocery store owners perceive locally grown food as a trend on the rise, however studies on food retailers are limited.^{xxxi}

In our survey of local food consumers, we found a broad range of methods used to acquire local food. Three out of 18 people who responded use community gardens to grow their own food. On the opposite end of the spectrum, 15 of the 18 get local food from farmers markets. No one surveyed responded that they used a CSA program, but given our small sample size, this is not too surprising.

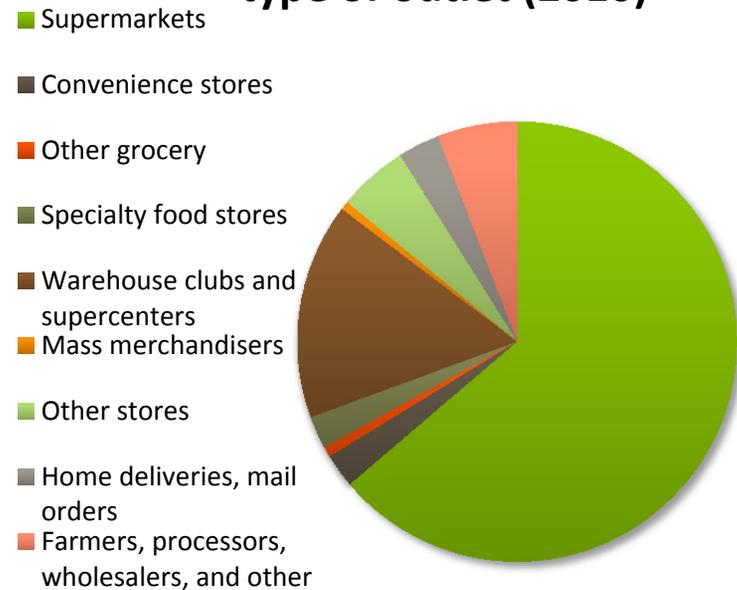
Where do You Get Local Food?

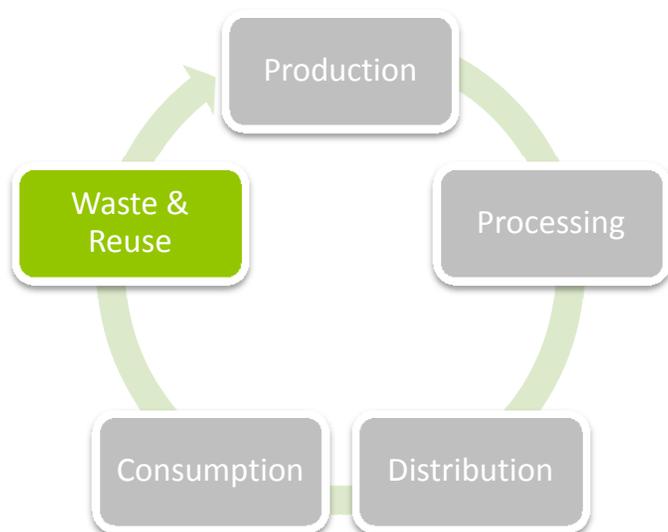


Source: NIRPC Survey of Individuals

Nationally, nearly 80 percent of people get their food for home consumption at either a supermarket (63.9%) or at supercenters and warehouse clubs (15.9%)(see table below). Tapping into those markets could be a boon to our local food producers, but as we discussed in the Distribution and other sections of this report, the aggregation and distribution infrastructure is not present to allow scaling up to the level that meets the needs of purchasers at these larger stores.

Sales of food for at home use by type of outlet (2010)





Waste & Reuse

Healthy soils are essential to growing healthy food, healthy people, and healthy communities. Healthy soils are the product of organic matter decomposing and releasing nutrients and other good things into the earth over time. A huge amount of organic material exists in the form of food scraps – rinds, shells, etc. –, commonly called “food waste.” In nature, leftover food is not wasted, it is reformed and reused. In our society, more often than not, we bypass natural processes and simply throw away leftover food. Only then does it become “waste.”

Food waste accounts for 30 percent of all material that goes into landfills in America.^{xxxii} There is great potential to use all of that wasted material to rebuild soil health, produce energy, and offset farm inputs. How much would our local governments save if just half of our food waste did not have to be hauled away to the dump?

Key Issues in Waste/Reuse:

- *Need more public participation in composting programs*
 - *Need a coordinated composting system*
-

Reuse Begins at Home

One of the easiest ways to reduce food waste is to keep it out of the trash. Composting is very easy to do,⁵ with minimal education required and very little work to do – nature does the heavy lifting. Considering that as a nation we throw out around *200 pounds of food per person per year*, widespread home composting could be highly effective at reducing “waste”, while at the same time producing something that many of us go out and buy every year – soil.^{xxxiii}

⁵ The main author of this study composts his food scraps. If he can do it, so can you!

In the United States...

...more than 30 million tons of food was dumped in landfills in 2009 – roughly **200 lbs. for every person in the country.**

...food that is thrown out accounts for **almost 25 percent of freshwater use.**

...only **2 percent of food waste is composted** or otherwise recycled.

...**10 million people could be fed just by recovering 1/5th of food waste.**

Source: The New York Times

...
And it is not just at the consumption stage that food is wasted. Food is wasted throughout the food system. There should really be a parallel system devoted to capturing and reusing food waste at every stage of the food system.

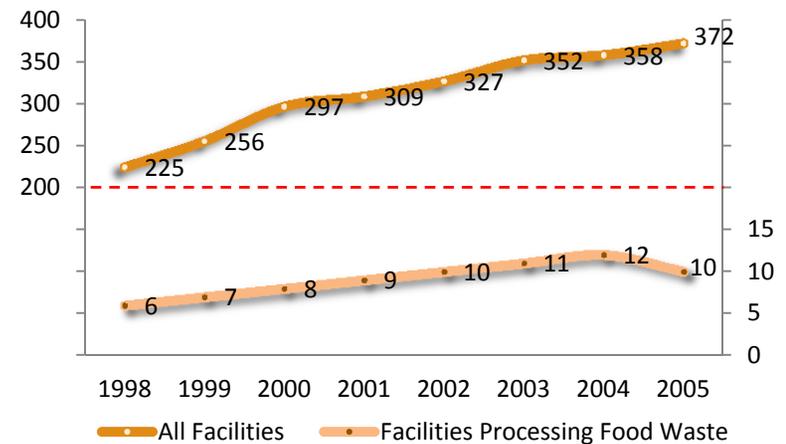
Locally, we have 18 sites that compost organic material.^{xxxiv} Most of these sites deal exclusively with yard waste. Only the Westville Correctional Facility reported processing any food waste in **2005, the most recent year that data was available** (See table below). While composting yard waste is a good thing, only focusing on yard waste will not do anything to reduce the amount of food waste going to landfills.

Westville Correctional Facility Composted Food Waste 1998-2005

Year	Tons*	Pounds
1998	1	2,000
1999	26	52,000
2000	185	370,000
2001	179	358,000
2002	87	173,160
2003	145	289,200
2004	177	354,000
2005	118	236,000
Total	917	1,834,360

*Tons are rounded. Pounds are calculated from non-rounded tonnage.

Composting Facilities in Indiana



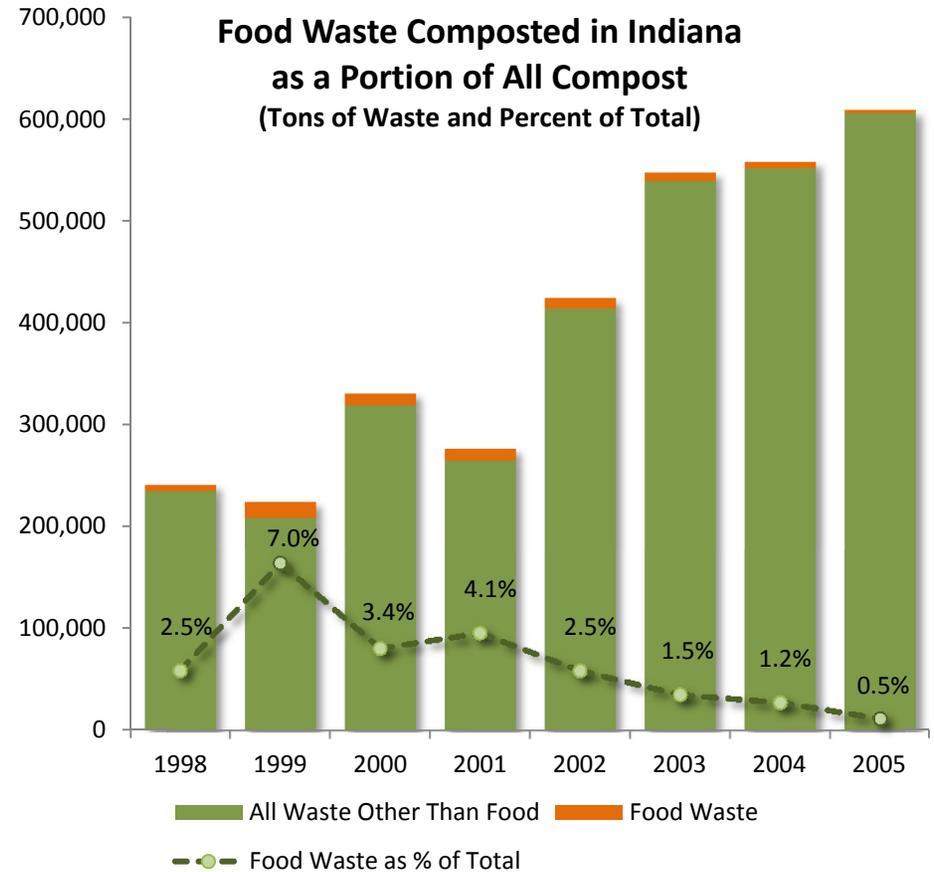
Source: Indiana Department of Environmental Management

While having just one of our 18 facilities composting food waste does not come close to a best-case scenario, we are ahead of the curve. In Indiana, just 2.7 percent, or one out of 37, composting facilities reported composting any food waste in 2005.

That we have one of just 10 facilities in the state that is composting food waste is a good thing. The Westville facility could act as an educational site and as a catalyst for developing similar facilities in our region.

Between 1998 and 2005, total composting in Indiana more than doubled, from 241,242 tons to 609,101 tons, respectively. During that same period, food waste composted rose, then fell in 2005 to about half of the 1998 level. Food waste composted went from a high of 7.0 percent of all compost in 1999 (15,784 tons) to a low of 0.5 percent in 2005 (3,063 tons). Between 1999 and 2005, the total amount of food waste composted declined each year.

If the goal is to reduce food waste going into landfills and to increase composting of food scraps, this trend clearly has to change.



Source: Indiana Department of Environmental Management

Food System

Issues

Examining Areas of Concern
within the Local Food System

Issue: Access

Overview

Physical and economic access to healthy food are very big issues in America today. The acknowledgement that many people lack access to healthy and/or enough food is apparent in recent news articles and in terms that have entered common usage. “**Food desert**”, while a few years ago was known only known to experts in select fields, is now widely known as a low-income area devoid of stores carrying healthy, fresh foods. While most often associated with disinvested urban areas, rural food deserts are quite common as well.⁶ “**Food insecurity**” may be less common than “food desert”, but it is no less important. This term describes the condition of people having limited or uncertain access to adequate food.^{xxxv} Even people with incomes above federal poverty and assistance thresholds experience food insecurity, so it is important to look at both food desert data and food insecurity data to get a good picture of access in our region.

Food Insecurity

Nationwide, food insecurity was 16.6 percent in 2009. For children the rate was 23.2 percent, and of those children who were food insecure, nearly a quarter would not be eligible for federal nutrition programs based on income thresholds. That is nearly 400,000 children.

In Northwest Indiana, the story is similar. In the region, nearly 130,000 people, or 17 percent, of all people were food insecure. That rate of

⁶ This seems absurd in a country whose rural areas contain some of the best farmland in the world. But, as our section on production shows, most prime farmland is used to grow crops not meant for human consumption. To hungry people living in these areas, their situation is somewhat akin to the shipwrecked sailor on a life raft; surrounded by water, yet unable to drink it.

insecurity is higher than both the state (16.2%) and nation (16.6%). Just under 48,000, or 24.4 percent, of children in the region were food insecure. That rate is about the same as Indiana’s (24.5%), but is higher than the nation’s (23.2%). Of the counties, both Lake and LaPorte Counties had higher food insecurity rates than the state and the nation. In Lake County alone, almost 89,000 people, of which 31,960 were children, were food insecure in 2009. Porter County had better rates of food insecurity than all other geographies we compared, but still had more than 21,700 food insecure people, of which 8,900 were children. While relatively the “best” in the group, Porter County’s food insecurity rates of 13.6 percent overall, and 22.9 percent for children, can hardly be seen as a positive.

Area	Food Insecure People	Overall Food Insecurity Rate	Food Insecure Children	Child Food Insecurity Rate
Lake	88,920	18.1%	31,960	24.5%
Porter	21,740	13.6%	8,900	22.9%
LaPorte	18,960	17.2%	6,790	26.3%
Region	129,620	17.0%	47,650	24.4%
Indiana	1,027,600	16.2%	388,640	24.5%
Nation	50,162,000	16.6%	17,197,000	23.2%

Source: Feeding America - Map the Meal Gap Interactive Map (2009)

Physical Access & Food Deserts

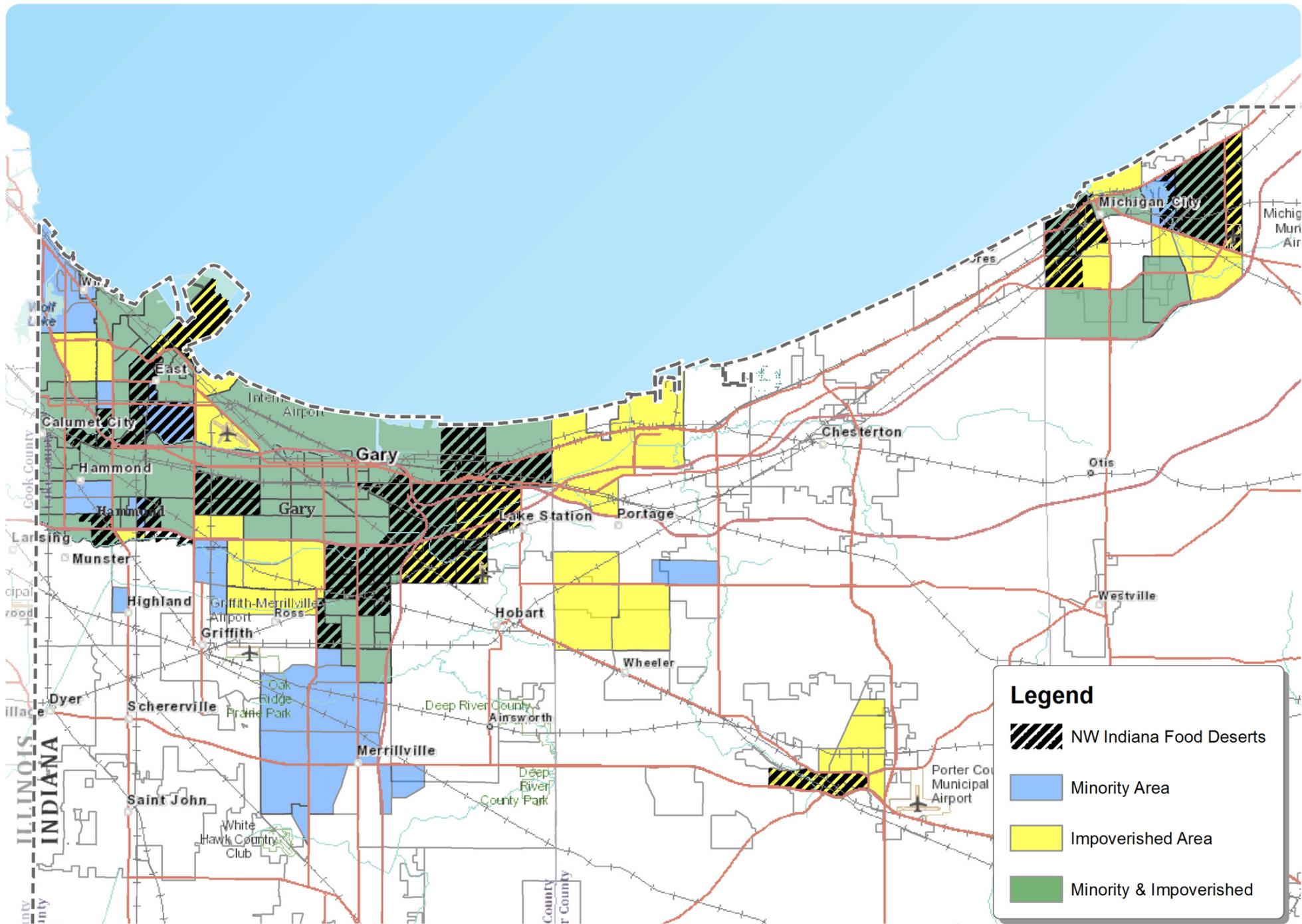
Much has been written about “food deserts” in recent years. Whatever you choose to call them, there are areas where people do not have physical access to fresh, healthy foods. According to data obtained from the USDA’s Food Desert Locator Map,⁷ Northwest Indiana has 20 areas that meet their criteria for a “food desert”⁸. All but one of these areas are within the four communities that NIRPC has identified in the *2040 Comprehensive Regional Plan (CRP)* as our “Urban Core Communities”. These communities are East Chicago, Gary, Hammond, and Michigan City. The four have traditionally been the economic and cultural centers of the three-county region, but have each struggled over the past several decades. The 2040 CRP recognizes that in order to have a robust region, these “core” communities need to be strong as well. Reinvesting in and revitalizing these communities is one of NIRPC’s top priorities. We will look for ways to eliminate all food deserts within the region.

Within these food deserts, over 46,000 people, or 57.4 percent of the population, have low access to food (see table below). In four of the 20 food desert census tracts, the *entire population* has low access to food. Over 15,000 people live in those census tracts.

Northwest Indiana Food Desert Population	
Total Population In Food Deserts	Population w/ Low Access In Food Deserts
80,726	46,393 (57.4%)

⁷ <http://www.ers.usda.gov/data/fooddesert/fooddesert.html>

⁸ USDA food desert definition available here:
<http://www.ers.usda.gov/data/fooddesert/documentation.html>



Issue: Farmer Demographics

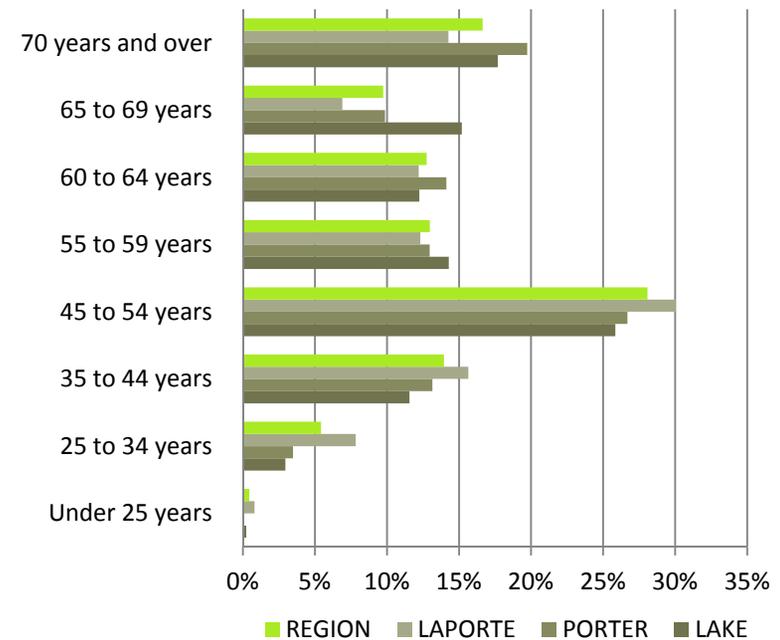
Demographics, the characteristics of people, are important to identify and analyze in any industry. In labor-intensive industries, such as agriculture, age is a particularly telling piece of data. An increasing average age in any industry – currently a national trend in farming – is a sign that not enough young workers are entering or staying in the industry to replace the older generations.

Average Age of Farmers		
	2002	2007
Lake	55.7	58
Porter	54.5	57.6
LaPorte	53.8	54.1

Age of Farmers

While the total number of farmers in our region declined by 78 between 2002 and 2007, the number of middle-aged and older farmers actually increased slightly. The number of younger farmers fell by over 100, or 22 percent over the same time period. Consequently, the average age of farmers increased in all three counties. The silver lining in these data is that in LaPorte County, the number of younger farmers increased (as did the number of older farmers). Without a steady number of younger farmers continually replenishing the farm labor force, the prospects for long range sustainability may be in doubt. New technologies and increasing mechanization may allow fewer farmers to work the land in the future, but some level of replenishment by younger generations will still be necessary. It will be a challenge in our region to attract these new farmers to the profession. However, it is a challenge that could pay large dividends for our region and for the future of the local food movement.

Age Group of Principal Farmer



Source: USDA Census of Agriculture 2007

	2002		2007	
	Under 45	Over 45	Under 45	Over 45
Lake	113	369	65	376
Porter	150	456	86	431
LaPorte	203	614	211	658
Region	466	1,439	362	1,465

Gender of Farmers

The USDA has found that female farmers are more likely to grow and sell locally than male farmers are. In that respect, the trends in Northwest Indiana are positive. Between 2002 and 2007, the number of female farmers in the region grew by nearly 23 percent, from 215 to 264. At the same time, the number of male farmers decreased by 7.5 percent, from 1,690 to 1,563.

Of all farmers, female farm operators in 2007 made up 14.4 percent of the total farmer population, up from 11.3 percent in 2002.

While these trends are positive and bode well for the local food movement, male farmers still control the vast majority of

farmland, at 96.5 percent of all farm acreage. This is down slightly from 2002, but not significantly (down from 96.7 percent).

However, the average size of farm for female operators has declined. Since smaller farms are also more likely to produce food for local consumption, this may also be a good sign for our local food system:

Average Acreage of Farms	2002	2007
Male Operated	296	308
Female Operated	80	66

	No. of Farms	2002	2007	Total Acres	2002	2007
Lake						
	Male	406	350	120,785	116,324	
	Female	76	91	6,997	12,115	
Porter						
	Male	545	463	142,720	113,730	
	Female	61	54	3,059	1,317	
LaPorte						
	Male	739	750	236,380	252,108	
	Female	78	119	7,067	4,051	
Region						
	Male	1,690	1,563	499,885	482,162	
	Female	215	264	17,123	17,483	
Percent of Total						
	Male	88.7%	85.6%	96.7%	96.5%	
	Female	11.3%	14.4%	3.3%	3.5%	

Issue: Economics

Supply of Food

Northwest Indiana has some of the best farmland in the world. While it may seem strange that so little of the food we eat is produced locally, there are many reasons that we do not grow more of what we eat – history, federal policy, global economics, land values, and development pressures are a few reasons – but they are too complex to detail in this relatively limited study.

The fundamental question is whether or not we could supply more food locally. We could.

Dollars and Sense

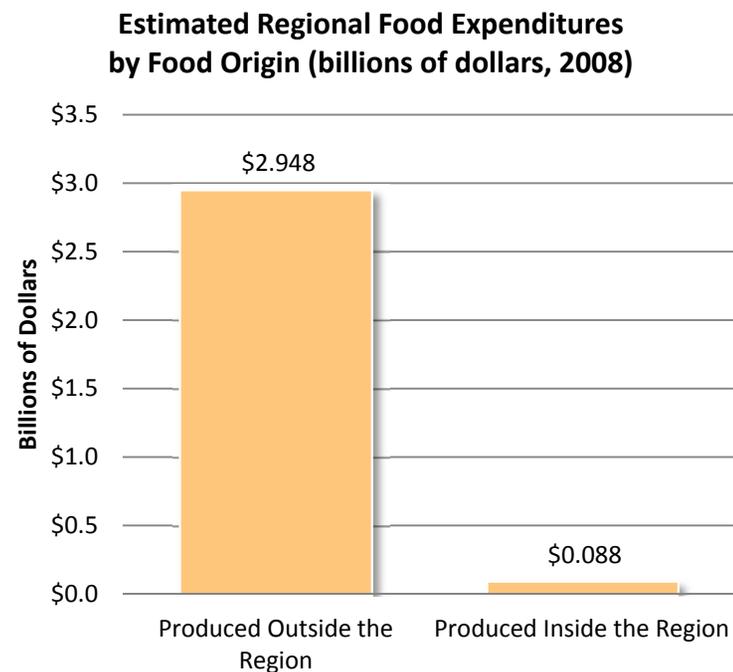
Most people probably do not think of agriculture or food when they hear the word “economy”, but the food system and its components make up a sizable part of our nation’s economy. In the U.S., the food industry makes up the second largest part of our economy.^{xxxvi} This should not be shocking, because after all, everybody has to eat.

We spend a huge amount of our food dollars on food that comes

“If we consumed all of the food that we produced locally in 2008, we would have spent less than 3% of all our food dollars on locally produced food.”

from outside of our region. If we could capture even a modest amount of this money and circulate it through the local economy, the effects could be substantial.

How big is our region’s food economy? We spent roughly \$3 billion dollars in 2008 on food.^{xxxvii} In 2008 total farm output, measured in cash receipts, was about \$351 million for our region. We estimate that around 25%, or about \$88 million, of that amount could have been consumed locally in the region. If we consumed *all* of that food locally, we would have supplied just under 3% of our region’s demand for food, in terms of dollars spent.^{xxxviii} On the flip side, over 97%, or \$2.95 billion, would have been spent on food that came from outside of the region.



Source: NIRPC Estimates, see endnotes for data source links.

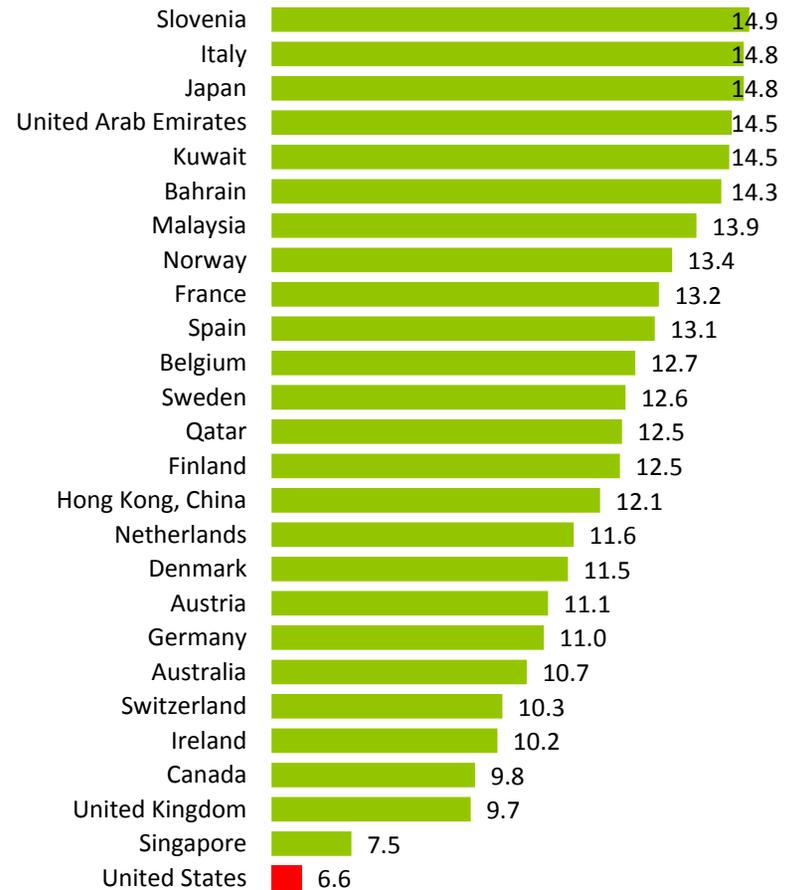
Americans spend between 6.4 and 6.8 percent of their money on food – less than any other people in the world as a percentage of all money spent. Assuming that our region reflects national trends, and that we spend at least 97 percent of all of our food dollars on non-locally sourced food, then 6.2 to 6.6 percent of all of our consumer dollars are being spent on products that are not sourced locally.

While not all of this money directly leaves the local economy, common sense as well as economics literature tell us that money spent at local businesses and on local products have a better impact on the local economy than buying goods and services from non-local sources.

Economists often describe “multiplier effects”. In simple terms, a multiplier is a change in one variable based on the value of another. For example, for every \$10,000 in additional income a person earns each year, there may be a 10% increase in their spending on housing. You could then say that there is 10% housing multiplier for every \$10,000 in additional income in this case.

There are greater multiplier effects on local economies when money is spent on locally produced goods and services than when money is spent on non-local goods and services. In other words, more people spending more money locally is good for the local economy. The same holds true for spending on local foods. If we spend more money on locally produced, processed, and distributed food, the benefits to our local economy would be much better than if we do not.

Food Expenditures Per Capita as Percent of All Spending (25 Lowest Spending Countries)



Source: USDA/ERS, EUROMONITOR

Issue: Environment

Local food is inextricably linked with our local environment. Part of local food's appeal to consumers is the perceived environmental benefits of choosing local. National market research has shown that "consumers who value high-quality food produced with low environmental impact are willing to pay more for locally produced food."^{xxix} Major issues to evaluate in the environmental impact of food include energy use and soil and water quality. The growth of urban agriculture also holds potential to improve the environment in the region.

Energy Use

Respondents to NIRPC's 2011 Local Food Surveys reported concerns about costs to the environment of cheap food from far off places. Many mentioned transportation costs of non-local food as a reason they prefer local. Although "food miles" have been a hot topic in the news, they are a misleading measure of fossil fuel consumption. A more accurate accounting of energy use in agriculture is a life cycle assessment, of which there are few. The USDA's review of existing studies found that local foods can, but do not necessarily reduce energy use or greenhouse gas emissions.^{xl} Energy and emissions reductions can be achieved through specific agricultural practices and efficiencies in distribution which are not always present in local food systems. Still, local growers may have more incentive to be stewards of the land than industrial growers. Part of the momentum behind the local foods movement stems from a desire to know more about the food we eat—who grew or made it, how it was grown or processed, and the effects these acts have on our environment. Therefore, the growth of the local food system which demands

sustainable farming practices holds potential to protect and enhance these environmental assets of Northwest Indiana.

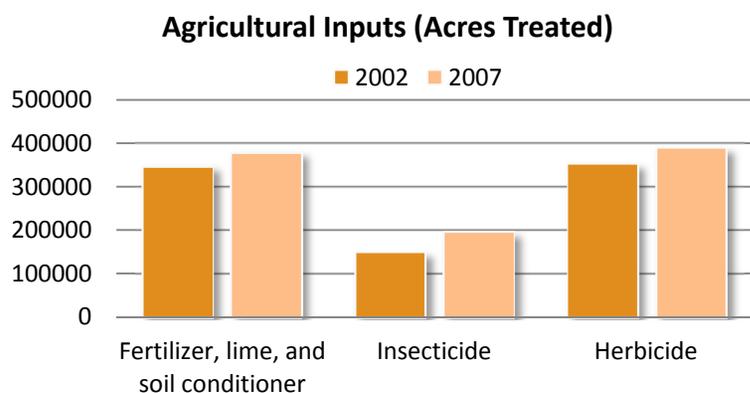
A sometimes overlooked component of energy use in the food system is the ability to produce energy on farm. Energy production on farms, whether through wind, solar, or biomass, can balance energy use inevitable in farming. In our three county region, the USDA reports only two farms generate electricity on farm.

Runoff from agriculture is the largest nonpoint source of pollution in the world.

Soil and Water Quality

If local producers utilize methods which build soil instead of erode it and reduce or eliminate fossil-fuel based fertilizers, they can address some of the major soil and water quality problems caused by our mainstream food system. In 2007 in the United States, 1.73 billion tons of topsoil was lost to erosion – that is 200,000 tons each hour.^{xli} That is more soil lost per year than the total 2010 U.S. harvest of corn, soybeans, and wheat combined. More local, sustainable producers could mean less pollution of our surface waters. The result could be cleaner lakes, streams and rivers in our region and less contribution to the Gulf of Mexico's hypoxic zone, an area of "dead" water bigger than the state of Connecticut, and four times the size of Northwest Indiana.

In Northwest Indiana, use of chemical inputs on farms has been increasing. Use of fertilizer, lime, and soil conditioners went up 8.6 percent, use of herbicide went up 9.5 percent, and use of insecticide went up 23.5 percent. In the future, we hope to see these numbers moving in the opposite direction.



Source: USDA Census of Agriculture 2002, 2007

The sustainability of a farm can be difficult to measure. Although stakeholders were quick to point out that many farms which are not certified as organic are as good or better stewards of the land than some certified organic farms, currently organic farming is the best measurement of farm sustainability available. In 2008, Indiana counted 148 organic farms; Illinois, 229; and Michigan, 461. The state with the greatest number of organic farms was, not surprisingly, California, with 2,714. Popular organic practices employed across the nation include:

Production Practice	# of Farms	%
Green or Animal Manures	9,454	65%
Buffer Strips	8,423	58%
Organic Mulch or Compost	7,454	51%
Water Management Practices	7,372	51%
No-Till or Minimum-Till	5,542	38%
Select Planting Locations to Avoid Pests	5,133	35%
Pest-Resistant Varieties	4,760	33%
Beneficial Insect/Vertebrate Habitat	4,619	32%
Biological Pest Management	4,474	31%
Planting to Avoid Cross-Contamination	3,768	26%
Released Beneficial Organisms	2,388	16%

Numbers represent total of all organic farms in the U.S., not all farms.

Within the three county region, thirteen farms are certified organic and five are in the process of converting to organic. Of all farms in the region, many more use some kind of conservation methods.

County	Used conservation methods	Practiced rotational or management intensive grazing
Lake	145	33
Porter	161	31
LaPorte	272	69

Soil and water quality can also be improved through recycling agricultural and post-consumer food wastes into useful products, such as building materials or compost.

While agricultural practices are a factor in water quality, land use is a major component to maintaining clean water in the region. As discussed in elsewhere in the report, our region has lost significant agricultural land to development. In existing agricultural areas, if more land is dedicated to higher value agricultural products, like those grown for local consumption, growers may be able to better resist development pressures and protect greenspace.

Urban Agriculture

While it is crucial to preserve existing agricultural land, the possibility of converting developed land to agriculture should not

be overlooked. Using water where it lands in urban farms will reduce the total runoff and contribute to cleaner surface waters. Urban agriculture is one way to maximize the number of brownfields returned to productive use, promote adaptive reuse, infill development, and the remediation and reuse of underutilized properties. Brownfields and greyfields in urban areas are prime locations for redevelopment with urban agriculture using technologies which avoid using existing soils, such as raised beds, vermicomposting, hydroponics, and aquaponics (*see definitions below*).

Unfamiliar Terminology

Planners use many terms that may be unfamiliar to the general public. The paragraph on Urban Agriculture uses some of these, like “brownfields” and “greyfields”. It also includes some “food terms”, like “vermicomposting”, that we define here.

Planning Terms

Brownfield – A property containing or *potentially* containing hazardous pollutants or contaminants.

Greyfield (or grayfield) – A property containing outdated, failing, or underused real estate (e.g. an abandoned shopping mall).

Food Terms

Raised Bed – An above-ground growing bed for plants, as opposed to planting directly in the ground. Good for areas with poor and/or contaminated soil.

Vermicomposting – A composting process that uses worms to break down food waste.

Hydroponics – A method of growing plants in water rather than in soil.

Aquaponics – A food production system combining aquaculture (growing of aquatic animals) and hydroponics in a closed-loop system.

Issue: Health

“You are what you eat,” so goes the famous saying. Americans are increasingly eating more and more processed foods and less fruits and vegetables. As a result, Americans are suffering diet-related health problems that many experts do not hesitate to call an epidemic. Our region is not immune to this national trend. As a matter of fact, diet-related health statistics are even poorer in our region than in America as a whole.

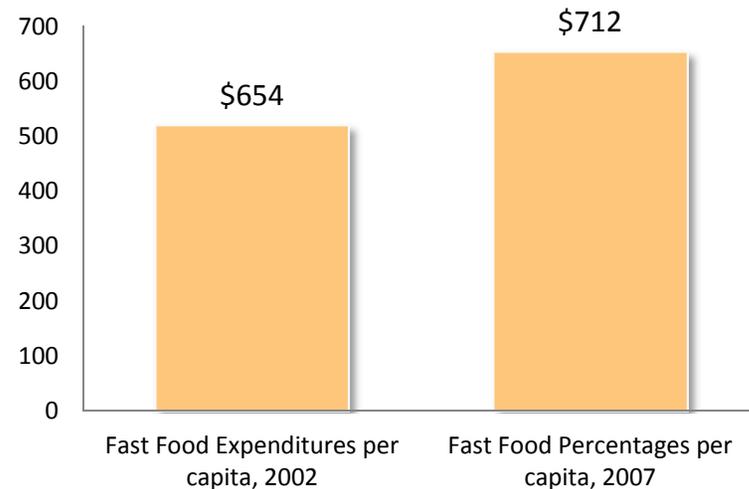
	Obesity Rate	Diabetes Rate
Lake	33.10%	11.30%
Porter	30.60%	9.80%
LaPorte	29.10%	10.90%
Nation	28.93%	9.91%

Even our children are not immune from diet-related disease. More than 12.5% of all low-income preschoolers in our region are obese.

If the choice to eat healthy food does not exist – see *Issue: Access* – then changes need to be made to address this shortcoming. It would be of great benefit to our region if every person who wanted access to healthy food could get it. At the moment, that is not the case.

“Between 2002 and 2007, per capita expenditures on fast food increased by 8.1 percent in Indiana.”

At the state level, spending on unhealthy food is on the rise. Between 2002 and 2007, per capita expenditures on fast food increased by 8.1 percent in inflation-adjusted dollars.⁹ That is the equivalent of each of us buying – and eating – 14 more Big Macs in 2007 than in 2002.¹⁰

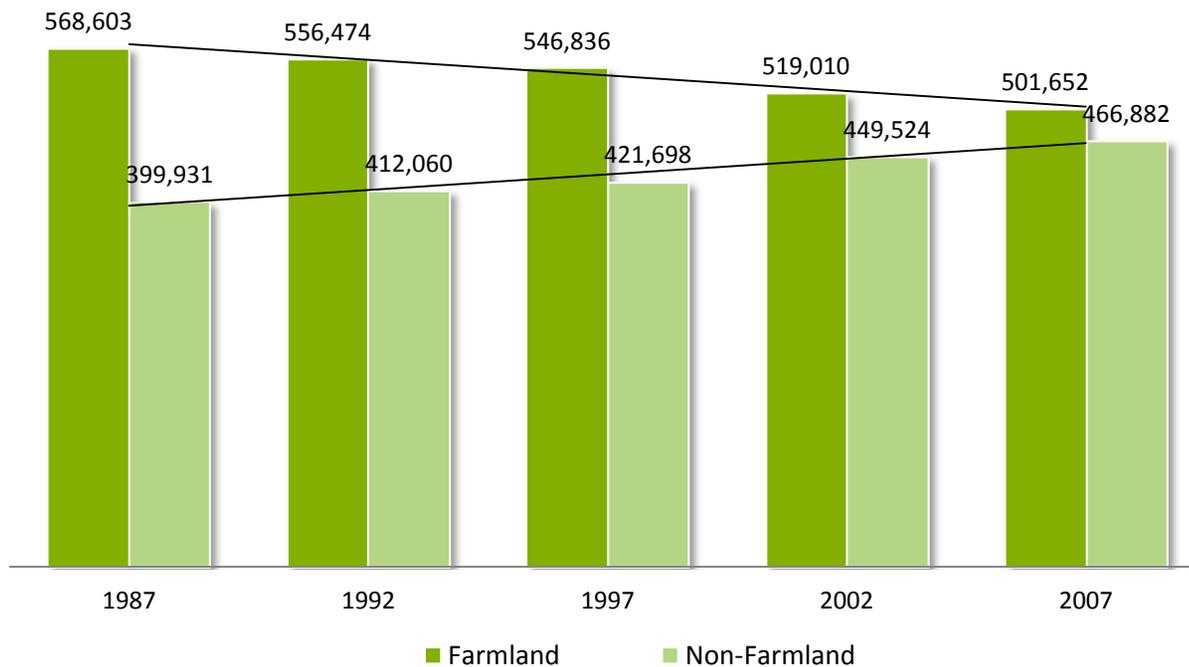


Source: USDA/ERS Food Environment Atlas

⁹ Dollars have been adjusted to 2011 equivalents using the CPI Inflation Calculator at <http://146.142.4.24/cqi-bin/cpicalc.pl>

¹⁰ Our intent is not to single out McDonald’s restaurants. The price of a Big Mac happens to be tracked by economists and is readily available at <http://www.oanda.com/currency/big-mac-index>. Also, Big Macs are likely familiar to readers, so the comparisons made here will be more understandable than just giving the dollar figure.

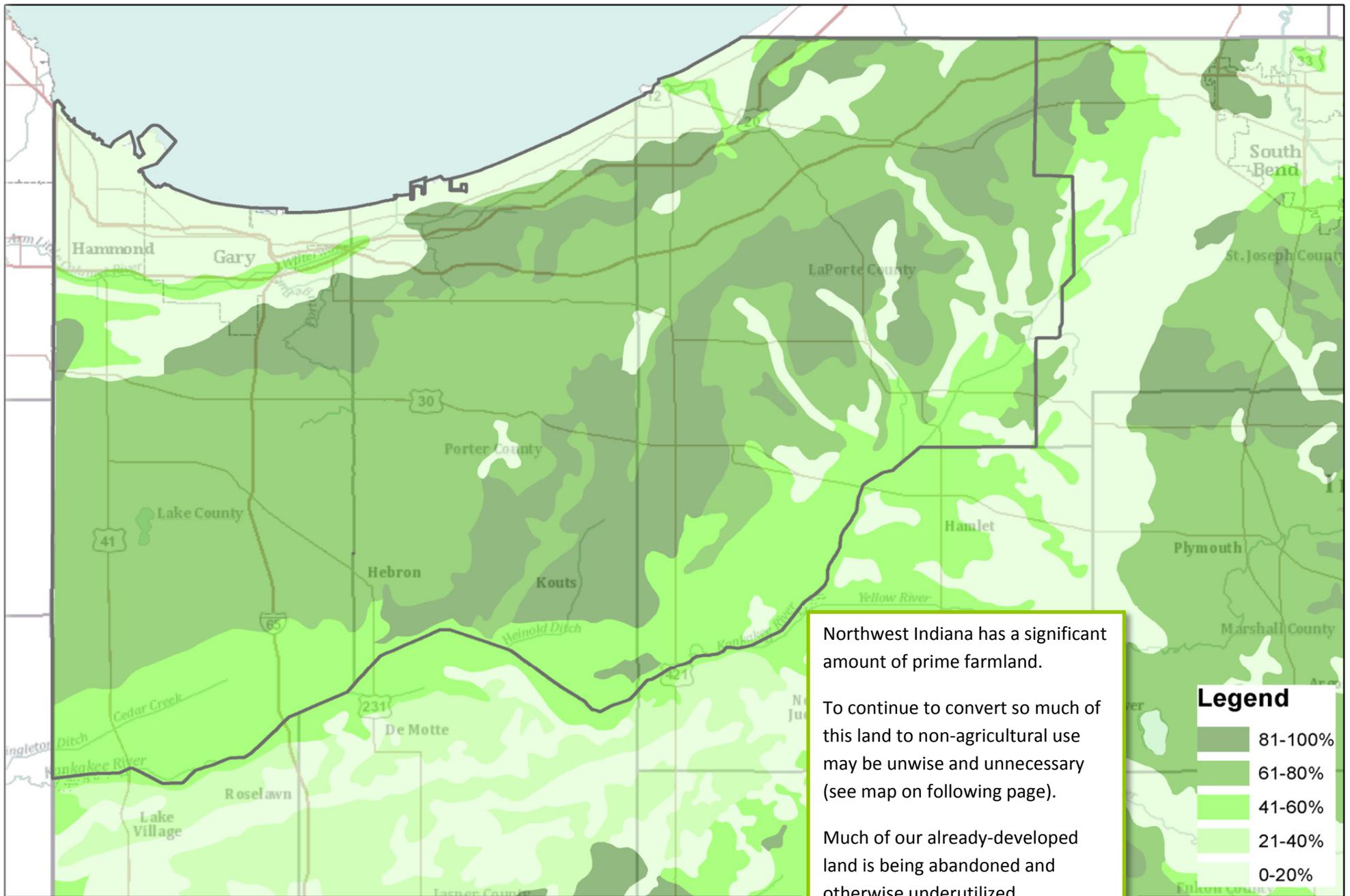
Acres of Farm and Non-Farm Land Use 1987-2007



Source: USDA Census of Agriculture 1987-2007

Agriculture is probably the most land-intensive industry there is. Without large swaths of land, growing the food to sustain ourselves would be impossible. Recent interest in developing vertical farms – essentially stacked greenhouses – holds promise for lessening the need for so much land. Also, over the past century we have learned how to coax more produce out of less and less land. However, vertical farming is still in its beginning stages, and there are serious questions regarding how much more produce we can get out of our land, and whether the long-term environmental consequences outweigh the short-term benefits. The bottom line is that as it stands, we need a great deal of land to feed ourselves.

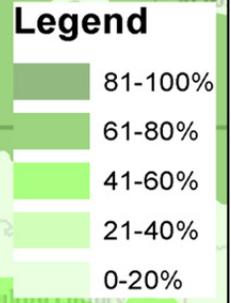
Over time, development pressures for land uses other than agriculture have reduced the amount of land devoted to food production. This is a national trend, as well as a local one. In our region, we lost nearly 12 percent, about 67,000 acres, over just 20 years from 1987 and 2007 (see table at left).

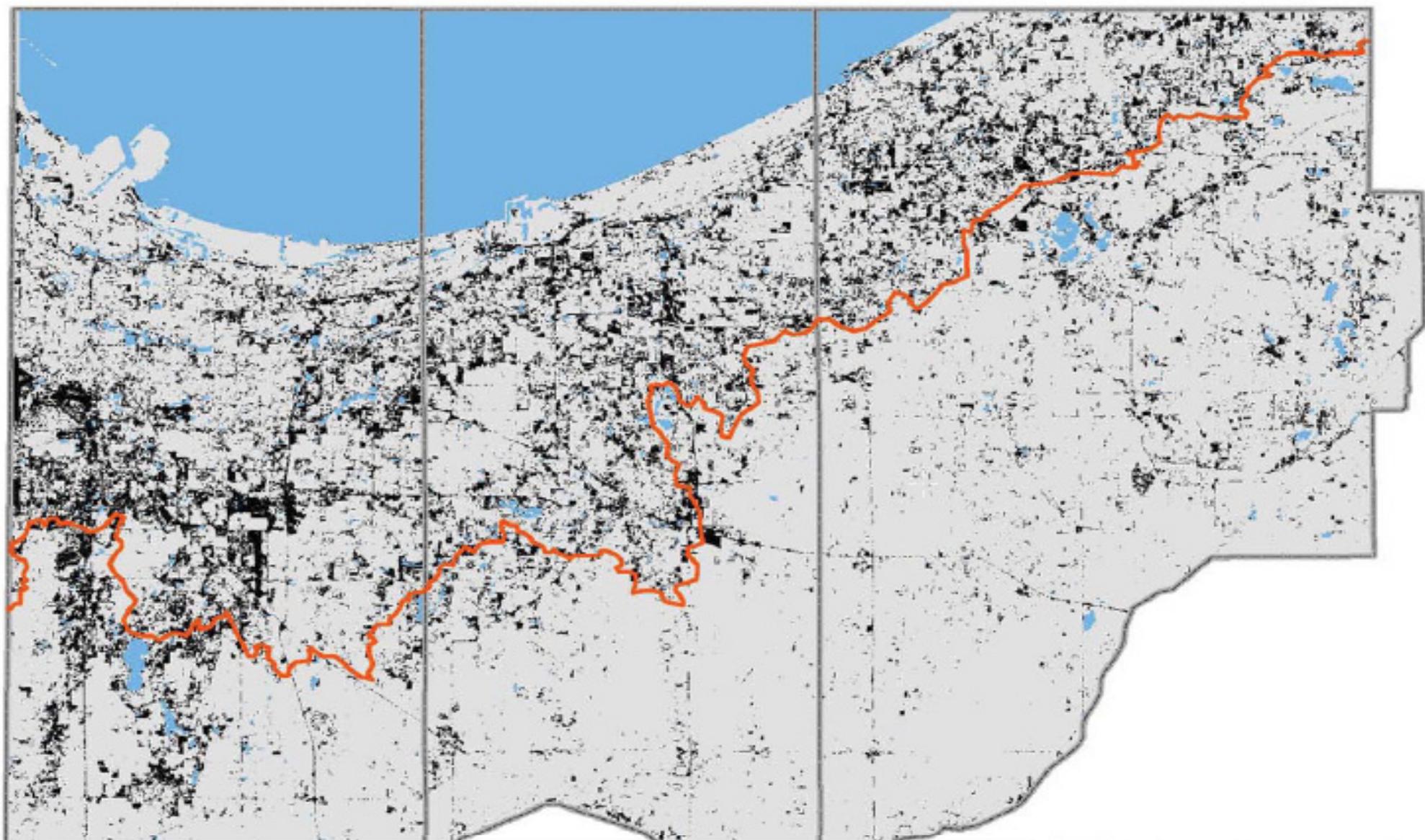


Northwest Indiana has a significant amount of prime farmland.

To continue to convert so much of this land to non-agricultural use may be unwise and unnecessary (see map on following page).

Much of our already-developed land is being abandoned and otherwise underutilized.





Loss of Agricultural Land

This map shows the amount of **agricultural land that was converted** to some other use between 1992 and 2001. The Census of Agriculture data for 1992 to 2002 tells us that this was roughly **37,500 acres**.

From 1990 to 2000, the total **population** of Northwest Indiana **rose by less than 30,000**.

Over these similar time periods, **land was converted from agriculture to another use at a rate of more than 1.25 acres per additional person**.

-  Agricultural land converted to another use between 1992 and 2001
-  Open water
-  Drainage divide

Issue: Transportation

Overview

Transportation is the lifeblood of societies and economies. A well-functioning transportation system is essential to a well-functioning food system. Our present global food system is dependent upon complex international transportation and cheap energy. If that system is disrupted, such as if (or rather, when) energy prices rise, supplies can constrict and food prices increase. In order to develop a more secure and resilient food supply system, transitioning to a more localized food economy may be the smart, if not the necessary, thing to do.

Transportation and freight logistics have to this point favored large-scale, centralized operations. In Northwestern Indiana, we have easy access to global and domestic food markets via highway, rail, air, and waterborne shipping. A tomato from California can be picked, packed, shipped, and be on a grocery store shelf in Merrillville in 2-3 days. Produce coming from abroad takes longer to arrive, but is still cost-competitive or cheaper than local produce.

Another issue which we have already discussed is access to healthy food. Transportation has a role not just in getting food to distribution centers, but in getting people to those centers to access that food. This issue is briefly covered here with respect to our transportation system.

Food Hubs

One way to compete with global food supply chains is to become more like them. Technological innovations now allow small-scale

enterprises to behave more like their traditionally-more-efficient large scale brothers and sisters. The USDA has been promoting “food hubs”, locations that centralize the business management structure of local food systems to aggregate, process, distribute, and/or market local food products.^{xiii} Food hubs, acting as a central coordinator for regional food supply chains, can provide the services that small and midsize producers need – and that our region is sorely lacking.

For our part, NIRPC has been active in the Great Lakes Food Hub Network (GLFHN), a group of local food businesses and advocates stretching from Wisconsin to Pennsylvania. GLFHN represents a wealth of innovative talent that Northwestern Indiana could tap into should we wish to pursue the creation of a regional food hub. From our outreach efforts, it is clear that a food hub would be highly beneficial to our region, and something well worth pursuing. A food hub could take advantage of our excellent transportation infrastructure and fill a noticeable gap in the larger Great Lakes Food Hub Network.

Food Access

Transportation, especially public transportation, can be key to getting people access to healthy, local foods. In Northwest Indiana, the public transit system is inadequate and underfunded. Yet, the system serves mainly environmental justice (EJ) communities¹¹ that often do not have any other choice than to take transit (see *Access* section for more on this topic). Out of 20 “food deserts” identified in our region by the USDA, 19 are served

¹¹ *Low-income and/or minority communities.*

by public transit. Over 41,000 people in those areas have poor access to food, defined by the USDA as living more than one mile from the nearest grocery store selling healthy food, and lacking access to an automobile. These 41,000 people are dependent on transit, but the system is inadequate and underfunded.

The Regional Bus Authority (RBA)

The Regional Bus Authority is an unfortunate example of the lack of emphasis placed on public transit in Northwest Indiana, and by extension, the lack of emphasis placed on EJ communities and food deserts. Given the resources it has, the RBA is doing what it can to operate some semblance of a regional system, but it is sorely underfunded and does not have a sustaining local source of revenue.

The RBA operates three transit services in Lake County, and in December of 2011, it lost its local funding source for operations. If no other source is found by June 30, 2012, the RBA will no longer be able to operate, leaving Gary Public Transportation Corporation (GPTC) and East Chicago Transit (ECT) as the only remaining fixed-route services in Lake County. The RBA currently serves at least four food deserts, with over 6,200 people with low access to healthy food in those areas alone. Without creating a source of dedicated transportation funding for Northwest Indiana, it is likely that more, not less, stories like this will take place.

Gary Public Transportation Corporation

The Gary Public Transportation Corporation serves the city of Gary as well as five other communities in the region. As with the RBA, GPTC is struggling to expand service with its limited resources. GPTC currently serves 11 food deserts, with nearly 29,000 people with low access in those areas.

East Chicago Transit

East Chicago Transit (ECT) serves the city of East Chicago, a city with a large Hispanic population. East Chicago's three food deserts have a population of over 3,400 people with low access to healthy food.

Michigan City Transit

Michigan City Transit (MC Transit) has four routes serving Michigan City. These routes provide service to all three food deserts in Michigan City, which include nearly 5,400 people who have low access to healthy food.

Valparaiso Transit

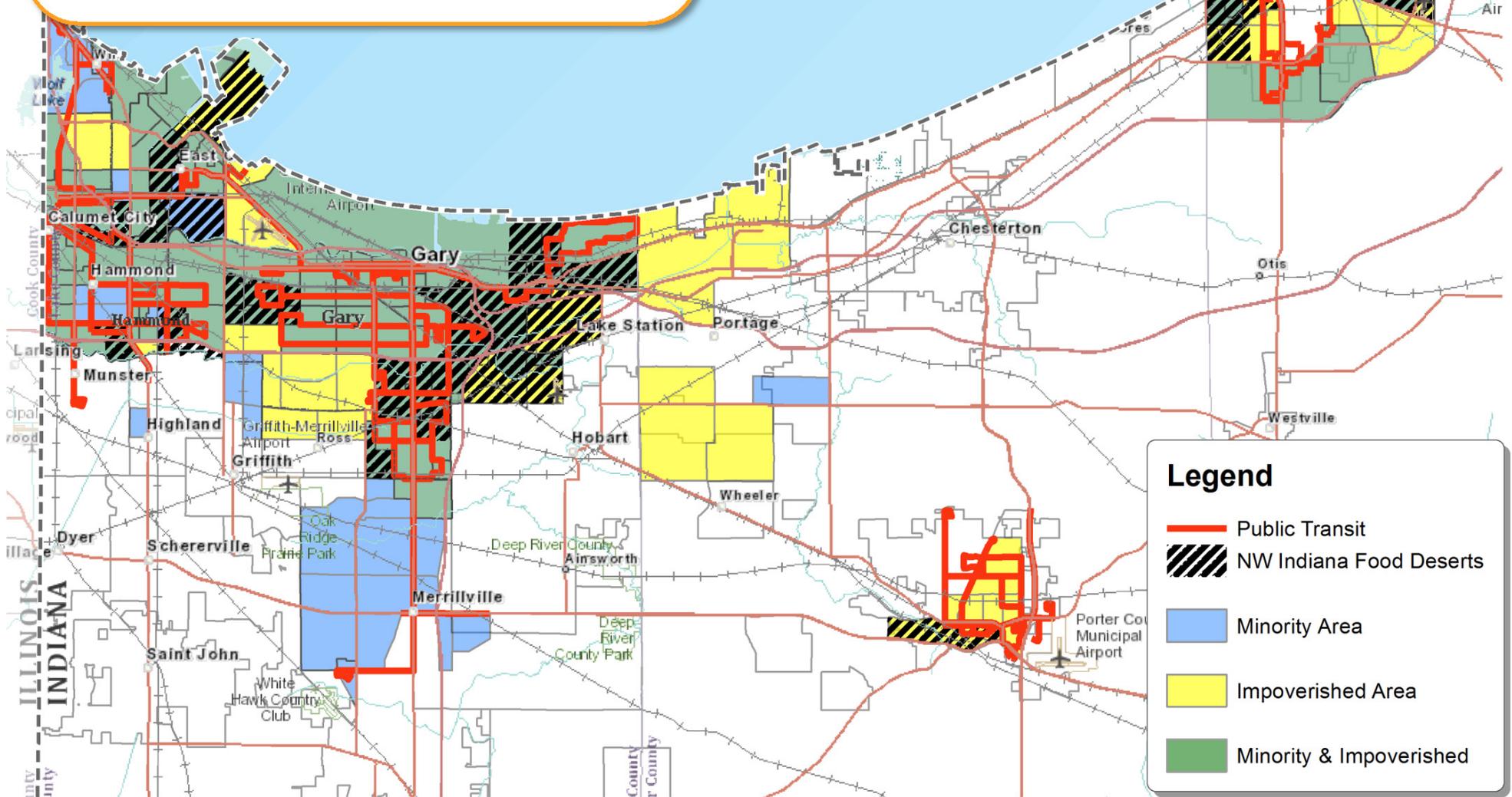
Valparaiso Transit's V-Line busses serve the one food desert in Valparaiso. Over 500 people with poor access to healthy food live in that single food desert.

Public transportation is of vital importance to get people without personal transportation access to healthy food. Our region needs to figure out how to fund and develop true regional transportation to serve all of our residents.

Public Transit and Food Deserts

The public transit system in Northwest Indiana serves predominantly low-income and/or minority populations, including 19 out of 20 identified “food deserts”, and over 41,000 people who have low access to healthy food.

Unfortunately, the transit system is inadequate and underfunded, and does not meet the needs of our region’s residents.



Legend

- Public Transit
- NW Indiana Food Deserts
- Minority Area
- Impoverished Area
- Minority & Impoverished



Northwest Indiana Food Deserts

Prepared by NIRPC, March 2012



Conclusion and Next Steps

The main goals of the Northwest Indiana Local Food Study were to establish a baseline for understanding the existing conditions of the local food system and to explain key issues and challenges that the system faces. With the study complete, the question is:

What comes next?

What can be done with this information, and how do we proceed from here?

We recommend two actions that can be pursued to further the development of the local food systems in our region:

First,

Transition the Food Study Advisory Committee (Food SAC) into a more permanent Action Committee, to act as a policy and project-driven group to advance the local food movement in the region.

A permanent committee would further the movement much more effectively than ad hoc groups over time. One of the most common needs identified throughout our outreach activities was to have a person or group act as the leader of the local food movement in the region. Food SAC can be that leader.

With proper representation, sub-groups can be formed to tackle individual issues or areas of interest (e.g. Access, Waste/Reuse, Rural Development, etc.)

Second,

Develop an action plan for developing our local food system with clear goals, objectives, and indicators based on the information contained in this report.

This study is an existing conditions analysis, and is a suitable and useful starting point for identifying areas of focus in an action plan. An action plan will be needed to address the needs and issues from this report. NIRPC has already begun developing preliminary goals, objectives, and indicators based on this information. Staff will work to secure funding to pursue the development of an action plan to further the work that this study began.

In addition, NIRPC staff will work to implement the 2040 Comprehensive Regional Plan.

We will pay particular attention to how food systems can be integrated into our main planning efforts, and work with our partners to address major food system issues, including:

- **Transportation and food access**
- **Rural development and farmland preservation**
- **Urban agriculture and revitalizing core communities**
- **Environmental impacts of agriculture**
- **Local ordinances and the food system**

Finally, some potential actions or projects that could benefit our local food system are:

- **Regional food summits** focused on specific tasks, for example bringing waste handlers, food banks, and large producers of food waste – grocery chains, large institutions, etc. – together to discuss how to divert food waste or edible, non-salable food to food banks or composting facilities.
- **Food hub feasibility study** – aggregation and processing facilities of the type needed for local producers are lacking in our region. A food hub may be a way to address that issue. A feasibility study would be needed as a first step to meeting this need.
- **Food access study** – to truly address issues of food access, a regional inventory of food stores and the products they carry would be a good first step in addressing the problem. Many good examples of such studies exist.
- **Healthy food financing initiatives** – based on work done in Philadelphia and elsewhere, healthy food financing initiatives help get healthy foods into stores that do not carry them. These programs have been effective and would help address health and diet-related disease issues.

The above list is not exhaustive. There are likely many other actions that can be taken to foster the development of our local food systems. These are just a few suggestions to get us started. It is up to all of us to choose what comes next.

Appendix A: Bibliography

Abate, Getachew. "Local Food Economies: Driving Forces, Challenges, and Future Prospects." *Journal of Hunger & Environmental Nutrition* (Haworth Press) 3, no. 4 (2008): 384-399.

Adam, Katherine L. *Community Supported Agriculture*. ATTRA - National Sustainable Agriculture Information Service, NCAT - National Center for Appropriate Technology, Butte: ATTRA - National Sustainable Agriculture Information Service, 2006, 1-16.

Agricultural Law Center. *State and Local Food Policy Council Profiles*. Drake University Law School Agricultural Law Center. 2008. <http://www.statefoodpolicy.org/?pageID=profiles> (accessed October 17, 2010).

American Community Garden Association. *Frequently Asked Questions*. 2010. <http://www.communitygarden.org/learn/faq.php> (accessed October 10, 2010).

Ball, T.H. *Northwestern Indiana From 1800-1900: A View of Our Region Through the Nineteenth Century*. Chicago: Donohue & Henneberry, 1900.

Battle, Emily. "The wait is over as area farmers markets open." *The Free Lance-Star*, April 22, 2009.

Biermacher, Jon, Steve Upson, David Miller and Dusty Pittman.

"Economic Challenges of Small-Scale Vegetable Production and Retailing in Rural Communities: An Example from Rural Oklahoma." *Journal of Food Distribution Research* 38, no. 3 (November 2007): 1-13.

Butterfield, Bruce. *The Impact of Home and Community Gardening in America*. White Paper, National Gardening Association, South Burlington: National Gardening Association, 2009.

Day-Farnsworth, Lindsey, Brent McCown, Michelle Miller, and Anne Pfeiffer. *Scaling Up: Meeting the Demand for Local Food*. (CIAS002) I-12-09, UW- Extension Ag Innovation Center and UW-Madison Center for Integrated Agricultural Systems, Madison: Cooperative Extension Publishing, 2009, 40.

Delaware Valley Regional Planning Commission. "Greater Philadelphia Food System Study." 2010.

Farm to School Network. "Farm to School Chronology." *Farm to School Web site*. March 2009. <http://www.farmentoschool.org/files/F2SChronology3.09.pdf> (accessed October 16, 2010).

Farnsworth, Richard L., Sarahelen R. Thompson, Kathleen A. Drury, and Richard E. Warner. "Community Supported Agriculture: Filling a Niche Market." *Journal of Food Distribution Research* (Food Distribution Research Society), February 1996: 91-98.

- Feeding America. "Map the Meal Gap - Executive Summary." *Map the Meal Gap*. 2012. http://feedingamerica.org/hunger-in-america/hunger-studies/map-the-meal-gap/~media/Files/research/map-meal-gap/ExecutiveSummary_MaptheMealGap_Final.ashx (accessed February 13, 2012).
- Food Marketing Institute. "FMI Grocery Shopper Trends 2009: Recession Changing Consumers Shopping Behavior at the Supermarket." *Food Marketing Institute*. May 14, 2009. http://www.fmi.org/news_releases/index.cfm?fuseaction=mediatext&id=1064 (accessed October 17, 2010).
- Garcia, Kevin J. *An Urban Agriculture Handbook for Planners*. Masters Project, Chicago: Unpublished (available from author at kgarcia@nirpc.org), 2009.
- Gregoire, Mary and Catherine Strohbehn. "Benefits and Obstacles to Purchasing Food From Local Growers and Producers." *The Journal of Child Nutrition & Management* (School Nutrition Association), no. 1 (Spring 2002): 1-7.
- Guptill, Amy and Jennifer Wilkins. "Buying into the food system: Trends in food retailing in the US and implications for local foods." *Agriculture and Human Values* 19 (2002): 39-51.
- Hendry, Fay L. "National Register of Historic Places Inventory Nomination Form: Joseph Bailly Homestead and Cemetery." Michigan State University, 1977.
- Indiana Department of Environmental Management. *Indiana Department of Environmental Management*. March 5, 2012. http://www.in.gov/idem/files/reg_yard_waste_comp_fac.pdf (accessed March 12, 2012).
- Keeling Bond, Jennifer, Dawn Thilmany, and Craig Bond. "What Influences Consumer Choice of Fresh Produce Purchase Location?" *Journal of Agricultural and Applied Economics* (Southern Agricultural Economics Association), April 2009: 61-74.
- Lawless, Greg, G.W. Stevenson, John Hendrickson and Robert Cropp. "The Farmer-Food Buyer Dialogue Project." UWCC Occasional Paper No. 13, Center for Cooperatives, University of Wisconsin-Madison, Madison, 1999.
- LeRoux, M.N., T.M. Schmit, M. Roth and D.H. Streeter. "Evaluating Marketing Channel Options for Small-Scale Fruit and Vegetable Producers: Case Study Evidence from Central New York." White Paper, Department of Applied Economics and Management, College of Agriculture and Life Sciences, Cornell University, Ithaca, 2009, 1-29.
- Lloyd, Renee M., James R. Nelson, and Daniel S. Tilley. "Should I Grow Fruits and Vegetables? Roadside Stands." In *Direct Farm Marketing and Tourism Handbook*, edited by Russell Tronstad and Julie Leones, 25-30. Tucson, AZ: Agriculture and Resource Economics Cooperative Extension, 1995.
- Local Harvest. *Community Supported Agriculture*. 2010. www.localharvest.org/csa (accessed October 9, 2010).

- Low, Sarah, and Stephen Vogel. "Local Food Systems: Concepts, Impacts, and Issues. USDA Economic Research Service." 2011.
- Martinez, Steve, et al. *Local Food Systems; Concepts, Impacts, and Issues*. ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010.
- McFadden, Steven. "The History of Community Supported Agriculture, Part I: Community Farms in the 21st Century: Poised for Another Wave of Growth?" *www.newfarm.org*. Rodale Institute. 2003.
<http://newfarm.rodaleinstitute.org/features/0104/csa-history> (accessed October 9, 2010).
- Moore, Powell A. *The Calumet Region: Indiana's Last Frontier*. Edited by Dorothy Riker and Gayle Thornbrough. Indianapolis, IN: Indiana Historical Bureau, 1959.
- National Restaurant Association. "We Are America's Restaurants." *National Restaurant Association Web Site*. December 1, 2009.
http://www.restaurant.org/pdfs/research/whats_hot_2010.pdf (accessed October 16, 2010).
- Neal, Arthur. *USDA Blog*. July 12, 2011.
<http://blogs.usda.gov/2011/07/12/online-resource-helps-producers-get-products-to-market-bolster-local-and-regional-economies/#more-34007> (accessed March 10, 2012).
- Painter, Kathleen. *An Analysis of Food-Chain Demand for Differentiated Farm Commodities: Implications for the Farm Sector*. Research Report 215, Rural Business and Cooperative Programs, USDA Rural Development, USDA, 2008.
- Public Health Law and Policy. *Healthy Mobile Vending Policies: A Win-Win for Vendors and Childhood Obesity Prevention Advocates*. Fact Sheet, National Policy & Legal Analysis Network to Prevent Childhood Obesity, Public Health Law and Policy, Oakland: Public Health Law and Policy, 2009.
- Ragland, Edward, and Deborah Tropp. "USDA National Farmers Market Survey 2006." Government Publication, Marketing Services Division, USDA Agricultural Marketing Service, 2009, 112.
- Sachs, Elizabeth and Gail Feenstra. *Emerging Local Food Purchasing Initiatives in Northern California Hospitals*. UC Sustainable Agriculture Research and Education Program, UC Davis, Davis: UC Sustainable Agriculture Research and Education Program, Undated.
- Schoon, Kenneth J. *Calumet Beginnings: Ancient Shorelines and Settlements at the South End of Lake Michigan*. Bloomington, Indiana: Indiana University Press, 2003.
- Selfa, T., and J. Qazi. "Place, Taste, or Face-to-Face: Understanding Producer-Consumer Networks in 'Local' Food Systems in Washington State." *Agriculture and Human Values* 22 (2005): 451-464.

- Starr, Amory, et al. "Sustaining local agriculture: Barriers and opportunities to direct marketing between farms and restaurants in Colorado." *Agriculture and Human Values* (Kluwer Academic Publishers) 20 (2003): 301-321.
- Thompson, Jr., Edward, Alethea Marie Harper, and Sibella Kraus. *Think Globally, Eat Locally: San Francisco Foodshed Assessment*. American Farmland Trust, Berkeley: Autumn Press, 2008.
- Tropp, Deborah and Jim Barnham. "National Farmers Market Summit Proceedings Report." Marketing Services Division, USDA Agricultural Marketing Service, 2008, 1-82.
- USDA. "2007 Census of Agriculture: United States Summary and State Data, AC-07-A-51." National Agricultural Statistic Service, US Department of Agriculture, 2009, 739.
- USDA. *Development of the Census Report Forms*. Technical Document, USDA, 2009.
- . *Farmers Markets and Local Food Marketing*. August 12, 2009. <http://www.ams.usda.gov/AMSV1.0/WholesaleFarmersMarkets> (accessed December 10, 2011).
- . *Farmers Markets and Local Food Marketing: Food Hubs*. June 20, 2011. <http://www.ams.usda.gov/AMSV1.0/foodhubs> (accessed March 12, 2012).
- USDA. *National Resources Inventory 2003*. USDA, February 2007.
- USDA, AMS. *USDA Announces that National Farmers Market Directory Totals 6,132 Farmers Markets*. August 4, 2010. <http://www.ams.usda.gov/AMSV1.0/ams.printData.do?template=printPage&navID=&page=printPage&dDocId=STELPRDC5085966&dID=136193&wf=false&docTitle=USDA+Announces+that+National+Farmers+Market+Directory+Totals+6%2C132++Farmers+Markets> (accessed October 8, 2010).
- Walsh, Dylan. *New York Times - Green Blog*. September 15, 2011. <http://green.blogs.nytimes.com/2011/09/15/a-war-against-food-waste/> (accessed February 13, 2012).
- Whole Foods Market. *Locally Grown: The Whole Foods Market Promise*. 2010. <http://www.wholefoodsmarket.com/products/locally-grown/index.php> (accessed October 7, 2010).
- Winne, Mark. *Speech: "America's Food System: A Cause for Concern, a Time for Action"* (September 15, 2011).
- Woods, Timothy, Matt Ernst, Stan Ernst, and Nick Wright. *2009 Survey of Community Supported Agriculture Producers, Agricultural Economics Extension Series 2009-11*. New Crop Opportunities Center, University of Kentucky College of Agriculture Cooperative Extension Service, Lexington: New Crop Opportunities Center, 2009, 1-24.
- Zepeda, Lydia. "Which little piggy goes to market? Characteristics of US farmers' market shoppers." *International Journal of Consumer Studies* (Blackwell Publishing Ltd) 33 (2009): 250-257.

ⁱ (Selfa and Qazi 2005)
ⁱⁱ (Whole Foods Market 2010)
ⁱⁱⁱ (Martinez, et al. May 2010)
^{iv} (USDA 2009)
^v (Low and Vogel 2011)
^{vi} (American Community Garden Association 2010)
^{vii} (Butterfield 2009)
^{viii} (Martinez, et al. May 2010)
^{ix} *Ibid.*
^x *Ibid.*
^{xi} *Ibid.*
^{xii} *Ibid.*
^{xiii} (USDA 2009)
^{xiv} (USDA, AMS 2010)
^{xv} (USDA, Farmers Markets and Local Food Marketing 2009)
^{xvi} (Ragland and Tropp 2009) p. 112.
^{xvii} (Battle 2009)
^{xviii} (Woods, et al. 2009, Adam 2006, Local Harvest 2010)
^{xix} (Local Harvest 2010)
^{xx} (Woods, et al. 2009)
^{xxi} (Martinez, et al. May 2010)
^{xxii} (Lloyd 1995)
^{xxiii} (Martinez, et al. May 2010)
^{xxiv} *Ibid.*
^{xxv} (USDA, Farmers Markets and Local Food Marketing: Food Hubs 2011)
^{xxvi} (Farm to School Network 2009)
^{xxvii} (Sachs)
^{xxviii} (Food Marketing Institute 2009, Keeling Bond 2009, Zepeda 2009)
^{xxix} (Martinez, et al. May 2010)
^{xxx} (Starr 2003, Painter 2008)
^{xxxi} (Guptill 2002)

^{xxxii} (Garcia 2009)
^{xxxiii} (Walsh 2011)
^{xxxiv} (Indiana Department of Environmental Management 2012)
^{xxxv} (Feeding America 2012)
^{xxxvi} (Winne 2011)
^{xxxvii} According to Table 13: “Per Capita Food Expenditures” from the Economic Research Service of the USDA, U.S. citizens spent \$2,064 for at home food purchases, and \$1,897 for food purchases away from home in 2010, or \$3,961 in total. \$3,961 * 766,497 (regional population) = \$3.03 billion. http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/Expenditures_tables/
^{xxxviii} (\$87.7 million in produce value)/(\$3.03 billion in regional demand estimated for 2008) = 2.89%.
^{xxxix} (Martinez, et al. May 2010)
^{xl} *Ibid.*
^{xli} (USDA, National Resources Inventory 2003 February 2007)
^{xlii} (Neal 2011)