THE STATE OF LOCAL FOOD

In the Central Ohio River Valley

Prepared by the Green Umbrella Local Food Action Team

December 2013
**Green Umbrella** is a non-profit organization working to improve the economic vitality and quality of life in the region around Cincinnati by maximizing the collective impact of individuals and organizations dedicated to environmental sustainability.

In partnership with the area’s leading planning initiatives — Vision 2015 in Northern Kentucky and Agenda 360 in Southwestern Ohio — Green Umbrella facilitates collaboration among over 300 area non-profits, businesses, educational institutions and governmental entities focused on the environmental aspects of sustainability. With its members, Green Umbrella aims to meet the environmental, social, and economic needs of today while preserving the ability of future generations to do the same. Green Umbrella is the “backbone organization” that helps all member organizations work better together to promote a more environmentally sustainable region.

The Green Umbrella Local Food Action Team brings together local farmers, distributors, farmers markets, cooperatives, community gardeners, community supported agriculture organizations, health professionals, restaurants, extension services, educational organizations, processors, and governmental entities to develop strategies to increase the demand for local foods, increase production, and identify new markets for local foods.

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Green Umbrella also acknowledges the many community members and organizations whose contributions made this effort possible.

We would like to thank the members of the Green Umbrella Local Food Leadership Team for their expertise, time, and support.

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EXECUTIVE SUMMARY

INTRODUCTION

A local food movement is already underway in Greater Cincinnati, as evidenced by the many community gardens, farmers’ markets, community-supported agriculture (CSA) programs, urban farms, specialty restaurants, and local-food procurement programs. However, our region has only just begun to tap the myriad health, economic, environmental, and social benefits that a strong local food system offers.

A large body of evidence now proves that increasing fruit and vegetable consumption lowers chronic disease, particularly cardiovascular diseases, such as high blood pressure (hypertension), coronary heart disease, and stroke. However, insufficient consumption of fresh fruits and vegetables is still a well-documented problem on a local and national level, and many agencies, organizations, and individuals are working to address this issue.

At the same time, while increasing consumption of any fruits and vegetables can influence an individual’s physical health, it does not necessarily address the region’s population health, which looks beyond the individual-level focus of mainstream medicine and takes into account the many overlapping factors that impact health on a population level – including economics, education, the environment, physical infrastructure, and other social determinants.

Increasing the production, distribution, and consumption of local fruits and vegetables addresses these integrated aspects of population health in the region in a comprehensive way.

- **Local food supports the local economy.** Money that is spent with local farmers and growers stays close to home and is reinvested with businesses and services in the community. Local food businesses can provide new jobs and greatly contribute to state and local taxes (Masi et al, 2010). Estimates show that a 10% shift to local food purchases by 10% of our region’s population would result in $49 million spent on local foods in our nine-county area (Carl, 2013).

- **Local food promotes “food literacy.”** Visits to local farms, interactions with local farmers, and other educational opportunities promote understanding of where food comes from, how to prepare it, and how to enjoy the taste of fresh fruits and vegetables.

- **Local food benefits the environment.** With a strong local food system, farmland, green space, and open space in our community is maintained, and vacant space is put to good use. Consumers can more-easily choose to support farmers who employ environmentally-friendly growing practices that minimize the use of synthetic chemicals, maintain soil fertility, and conserve water.

- **Local food builds social cohesion.** Community-building can occur while people are working in the community garden, shopping at the market, or sharing a common experience at the local u-pick orchard. Research has also shown that communities characterized by local businesses result in greater civic welfare, less social strife, and greater equality (Masi et al, 2010).

- **Local food promotes fruit and vegetable consumption.** Studies have shown that access to local food markets increases fruit and vegetable consumption by community members (O’Hara, 2013). Farmers’ markets and other sale points draw consumers to purchase local food through the community they create and experience they provide. Reducing the distance between farm and table means that local fruits and vegetables can be harvested when ripe and consumed while fresh, improving the nutritional content, taste, and appeal.

The Green Umbrella Local Food Action Team brings together stakeholders from all parts of the local food system to develop strategies to support the production, distribution, and consumption of local foods; to facilitate communication and support the efforts of individual team members; to build demand for local...
food; and to increase access to healthy, local foods for all community members. Together, the Green Umbrella Local Food Action Team members set the goal of doubling the percentage of fruits and vegetables sourced and consumed within the region by 2020. **By increasing the production and consumption of local fruits and vegetables, the team will thereby have a positive impact on the region's population health.**

While local food system stakeholders have done a tremendous amount of work over the years, the Green Umbrella Local Food Action Team recognized that data and information regarding the fruits of this labor had not been collected in one place, making it difficult to make progress towards the team’s goal in a strategic way. Thus, this report is a comprehensive analysis of local food efforts to date and includes a unified blueprint for moving forward.

The three primary goals of this report were to:

- Identify stakeholders in the regional food system
- Research and synthesize existing analyses, studies, and data from stakeholders and create one consolidated report reflecting and representing work previously completed
- Identify recommendations for action and potential future analyses needed

**RESEARCH**

The information presented in this report was collected from national data sources; from regional research, presentations, and publications; and from key informant interviews with over 30 local food system stakeholders.

**Production:** Available data sources provide some measure of current regional food production levels and farmer marketing strategies, though the information is often incomplete and/or outdated. Residential and commercial development pressure and an aging farmer population call into question the sustainability of current production levels, while food producers face financial and regulatory challenges, among others, that limit their ability to operate sustainable businesses. Key to increasing regional production of fruits and vegetables will be increased support for local growers, the development of new producers and other local food businesses, and increased specialty-crop acreage under production at all scales.

**Distribution and Infrastructure:** While the region enjoys a strong conventional food distribution infrastructure, most large-scale distributors currently do not work with small-scale, local producers, who lack the quantity and consistency of product that the distributors need. While opportunity exists to increase the amount of local produce that moves through these traditional distribution channels, or to create new channels altogether, it will take a variety of changes – including aggregation of local product, price flexibility, technical assistance for growers and buyers, and improved infrastructure – to significantly increase the distribution of local food.

**Healthy, Local Food Consumption and Access:** In recent years, there has been a concerted effort to reduce the disparities in healthy food consumption and access that exist in the Central Ohio River Valley. Much research has been conducted on healthy food access, and a variety of research methods have been used to identify areas with limited access to fresh fruits and vegetables. Unfortunately, as the data reminds us, areas of low access and poor health are still common in our region. In order to increase access and consumption, efforts must work to overcome the barriers posed by poverty, the proximity and ease of unhealthy and fast food choices, the lack of fruits and vegetables in corner stores, and the need for increased education around making healthy food choices.
**Organizational Capacity:** Many knowledgeable individuals, organizations, agencies, and universities in the Central Ohio River Valley work diligently on food-related issues and have done so for many years. They conduct research, gather data, and implement programs from a variety of perspectives. Over the past several years these stakeholders have hosted annual food-system gatherings, presented research findings, tried to implement a food policy council, and developed an ongoing communication and networking structure in the Green Umbrella Local Food Action Team. However, stakeholders continue to seek improved communication, and coordination of efforts in order to minimize duplication and increase efficiency and efficacy.

**Recommendations and Action Plan**

Analysis of regional research and key informant interviews, and a review of national best practices, has resulted in 14 Food System Recommendations. The ultimate goal of these recommended actions is to double the percentage of fruits and vegetables sourced and consumed in the region by 2020. Efforts to achieve this goal will strengthen the local economy, educate consumers, maintain agricultural land, build social cohesion, and increase fruit and vegetable access and consumption – all of which will improve the population health of the region.

The recommendations are considered priorities for funding, partnership formation, and organizational development. A primary focus moving forward is coordination and non-duplication of efforts and increasing access to fresh, healthy local food for more of our community members. A more-detailed list of recommendations and action steps can be found in the full State of Local Food report.

**Production Recommendations:**
1. Support Existing Local Growers
   - Includes providing technical assistance around food safety regulations and crop expansion/conversion; facilitating educational opportunities and knowledge sharing; accessing land for lease/purchase; increasing the farm labor pool; and increasing awareness/access to financial resources.
2. Develop New Growers and Other Food Businesses
   - Includes utilizing existing business-planning and entrepreneurial programs more effectively; supporting new farmer incubation programs; developing educational programming with local educational institutions; providing start-up funding for new growers; and development of farmer mentorship programs.
3. Increase Local Food Production at all Scales
   - Includes assessment of potential transition to specialty crops; matching retiring farmers with aspiring farmers; promoting use of conservation easements; providing help with succession planning and farm transfer; and increasing backyard and community gardens.

**Distribution and Infrastructure Recommendations:**
1. Strengthen Regional Distribution of Local Food
   - Includes supporting ongoing efforts to aggregate local food for distribution; building on existing food distribution infrastructure; and providing technical assistance on food safety regulation compliance and how best to meet institutional buying needs.
2. Increase Institutional, Retail, and Restaurant Purchasing of Local Food
   - Includes facilitating new partnerships between growers, distributors, and a range of institutions; developing incentives for local purchasing; providing technical assistance and education to institutional, restaurant, and retail buyers; and hosting networking sessions to bring growers and buyers together.
3. Construct a Certified, Shared-Use Kitchen
Includes constructing space for food business incubation and acceleration; providing potential wrap-around services, including processing, packing, flash freezing, business training & marketing support for business start-ups; and providing food education and resources for community members (i.e. food resource center, tool library, seed bank etc.).

Healthy, Local Food Consumption and Access Recommendations:
1. Increase SNAP/WIC Purchases of Fresh (Local) Fruits and Vegetables
   Includes increasing SNAP/WIC acceptance and redemption at area farmers markets; increasing “matching” benefits for SNAP/WIC recipients; increasing availability of fresh (local) fruits and vegetables at SNAP-authorized retailers; and exploring other venues that minimize transportation and schedule barriers for recipients.

2. Strengthen Markets for Local Foods in All Parts of the Community
   Includes increasing year-round markets for local products at farmers markets and corner stores; creating new, innovative markets and strategies; reducing barriers to healthy, local foods in schools and childcare centers; incentivizing healthy food retail in areas of low food access; increase provision of healthy, local fruits and vegetables through food pantries and other emergency food providers; and increasing local purchasing by food buyers.

3. Enhance Educational Opportunities for Local Consumers
   Includes providing education at various food access points for consumers; teaching basic cooking and gardening skills; increasing participation in SNAP-Ed programs; and increasing education at schools and childcare centers.

4. Conduct an Outreach Campaign to Increase Consumption of Local Food
   Includes developing a media campaign, tool kits, and regional branding, focusing initially on low-income consumers (SNAP/WIC recipients), worksite wellness groups, and GU member organizations.

Organizational Capacity Recommendations:
1. Improve Stakeholder Communication, Information-Sharing, and Partnerships
   Includes hosting an annual gathering of food system stakeholders to facilitate cross-regional collaboration, sharing of best practices, and setting priorities for future initiatives; and creating a searchable online database of food system stakeholders and assets.

2. Reestablish the Regional Food Policy Council
   Includes bringing together stakeholders to complete a food policy audit of the region and creating next steps for policy implementation.

3. Develop a Long-Term Strategic Plan
   Includes collecting and maintaining data, and establishing and identifying additional community assets; creating actionable strategies, timelines, and partner commitments; and developing, implementing, and maintaining financial support strategies to sustain local food initiatives.

4. Create a Staffed Local Food System Advocate/Specialist Position
   Includes hiring a local food system advocate to improve communication between stakeholders, implement a media campaign to increase local food consumption/purchasing, staff the food policy council, and collect annual food system metrics, among other tasks.

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INTRODUCTION

The Central Ohio River Valley is host to a rich agricultural heritage, fertile soil, and diverse urban, suburban, and rural communities. Food, an essential part of everyday life, links the region’s varied communities together, and links all of its residents to the land and the people that provide our daily meals. While many take these meals for granted, more than 16% of people in Ohio, Kentucky, and Indiana do not know where their next meal is coming from (Feeding America).

Food production and consumption has important impacts on land use, environmental quality, the economy, and quality of life. By eating food that was grown and produced locally, consumers can make more-informed choices about how their food was raised, can ensure that it does not travel long distances from source to plate, and can have more of a say in what labor practices are employed. Supporting local farms and food producers also creates local jobs, strengthens the local economy, preserves local farmland, and builds community. At this time, however, not all community members have the opportunity to make choices about where and how their food was grown. For this reason, efforts to build a strong local food system must also ensure that all consumers gain access to fresh, affordable food.

A food system includes the production, processing, transport, storage, sales, consumption, and waste management of the food we eat. In the Central Ohio River Valley, our food system includes farmers, ranchers, value-added food producers, distributors, grocery stores, farmers’ markets, institutions, restaurants, schools, government agencies, non-profits, individual consumers of all types, and waste-disposal entities, among others.

The Green Umbrella Local Food Action Team brings together stakeholders from all facets of the local food system to develop strategies to support the production, distribution, and consumption of local foods; to facilitate communication and support the efforts of individual team members; to build demand for local food; and to increase access to healthy, local foods for all community members. These team members are passionate about sustainability and are taking a leadership role as the catalyst for a collective effort to develop a thriving local food system in Greater Cincinnati.

As such, the Green Umbrella Local Food Action Team has set the goal of doubling the percentage of fruits and vegetables sourced and consumed within our region by 2020. In order to reach this goal, efforts to strengthen the local food system will need to increase the production of local food; strengthen local distribution channels; increase the type and number of markets for local produce; improve access to healthy, local foods for all community members; improve communication among food system stakeholders; and increase organizational capacity to support these efforts. The benefits of a strong local food system that supports the people who grow, raise, and produce local food products, the people who process, distribute, and sell these items, and the people who purchase and consume local food will be felt throughout the community.
This report represents an initial step in the process of uniting local efforts to achieve this common goal. In the Central Ohio River Valley, many knowledgeable individuals and organizations are working on food-related issues, conducting research, gathering data, and implementing programs from a variety of perspectives. However, the Green Umbrella Local Food Action Team recognized that the data and information regarding the fruits of this work had not been collected in one place, making it difficult to move towards the team's goal in a strategic way. Thus, this report, the result of a planning grant from Interact for Health (formerly the Health Foundation of Greater Cincinnati), is a comprehensive analysis of local food efforts to date and includes a unified blueprint for moving forward.

The three primary goals of this report were to:

1. Identify stakeholders in the regional food system
2. Research and synthesize existing analyses, studies, and data from stakeholders and create one consolidated report reflecting and representing work previously completed
3. Identify recommendations for action and potential future analyses needed

This report is broken down into the following sections:

- **Methodology**: A description of the data sources included and key informant interviews conducted.
- **Recommendations**: A summary of the recommendations resulting from the publication analysis and key informant interviews, which are considered priorities for funding, partnership formation, and organizational development.
- **Research Chapters**: A synthesis of existing research and key informant feedback divided into the following categories:
  - **Production**
  - **Distribution and Infrastructure**
  - **Healthy, Local Food Consumption and Access**
  - **Organizational Capacity**
- **Measuring Progress**: Suggested metrics for collecting baseline data and measuring progress towards the Green Umbrella Local Food Action Team goal.
- Sidebars throughout the report present information on relevant work by local organizations, agencies, and other food system stakeholders.

**We hope this report can benefit all local food system stakeholders by:**
- Providing a shared vision and common goals for our community around transforming our food system
- Providing an opportunity to collaborate and partner within a network of local food system stakeholders
- Creating synergy and reducing redundancy in efforts
- Providing an opportunity to inspire leaders to champion food system efforts and projects
- Increasing awareness and support in our community for food system issues
- Supporting grant applications and leveraging of funds for project and planning efforts
- Promoting food system planning in our community and aligning with other regional plans
- Providing an opportunity for community recognition of stakeholder efforts
METHODOLOGY

The information presented in this report was collected from national data sources; from regional research, presentations, and publications; and from key informant interviews. Local food system assessments and action plans from around the country were also reviewed to inform the recommendations and action plan outlined in the following section.

For the sake of this report, we have included information, when available, for the following counties:

**Ohio:** Hamilton
Butler
Warren
Clermont

**Indiana:** Dearborn
Franklin

**Kentucky:** Boone
Campbell
Kenton

Secondary data relating to agriculture, natural resources, food dollars, health, and food access are all collected and published by the United States Department of Agriculture. Information in this report was collected from:

- **USDA National Agricultural Statistics Service, Census of Agriculture:** County estimates for number of farms, land in farms, average farm size, vegetable production acreage, etc.

- **USDA Economic Research Service, Food Environment Atlas:** Food retail, access, health, direct market information, etc.


Thirty-six regional research publications and presentations were referenced in this report. Included are research studies, formal presentations at food system gatherings, and miscellaneous publications on local food efforts. Publications were identified and discussed during key informant interviews, as well as through web research.

Key informant interviews were conducted with over 30 individuals working throughout the local food system. Interviews focused on current local food efforts, identification of research and publications, data collection and needs, and recommendations for strengthening local food efforts. These interviews were used to identify sources of research and also to bring out key recommendations to guide future efforts.

A comprehensive list of key informants is included in Appendix B, and a copy of the interview questionnaire can be found in Appendix D. Efforts were made to speak with representatives from each sector of the local food system in order to provide a comprehensive picture of local efforts, successes, partnerships, and needs.

The planning grant from Interact for Health also included a special study of season extension in the region, with the goal of better understanding the methods farmers currently use, the challenges they
face, and the ideas they have for lengthening the growing season for fruits and vegetables. Data on this topic was collected through an online survey and in-person interviews with producers and other key regional informants. Information gathered is included in Research Chapter 1: Production, and the complete Season Extension Report can be found in Appendix E.
Recommendations and Action Plan

Analysis of national and regional research and key informant interviews, and a review of national best practices, has resulted in 14 food system recommendations that are intended to move the regional food system towards the goal of doubling the percentage of fruits and vegetables sourced and consumed within the region by 2020. The recommendations fall within four categories: Production; Distribution and Infrastructure; Healthy, Local Food Consumption and Access; and Organizational Capacity.

These recommendations are considered priorities for funding, partnership formation, and organizational development. A primary focus moving forward is coordination and non-duplication of efforts and increasing access to fresh, healthy local food for all community members.

❖ PRODUCTION RECOMMENDATIONS

1. Support Existing Local Growers

Provide technical assistance to growers

- Topics could include: food safety regulations/GAP inspection, season extension measures, operational expansion or conversion to specialty crops, appropriate cover cropping techniques and soil fertility measures, etc.

Facilitate new educational opportunities

- Education could take the form of knowledge-sharing or traditional workshops on: season extension, operational efficiency, training and support for mid-size farmers, new farming methods, small business training, financial literacy, livestock/grazing methods, greenhouse design, value-added products (cheese, etc.), community gardening, and backyard growing

Support land leasing or purchase for expanded production

- Locate/pool suitable agricultural land for expansion or new operations by connecting strategic partners
- Link new growers with retiring farmers
- Extend lease terms for Urban Ag sites that are publically owned (i.e. by City/County)
- Develop MOU template for lease arrangements with private property owners and farmers/gardeners

Support new production partnerships

- Structure formal mentoring programs
- Foster rural-urban collaborations in co-marketing, co-branding, or shared-use facilities
- Match medium-scale producers (10-200 acres) with larger-scale food purchasers
- Identify neighborhood partners to share gardening information, host workshops, and provide resources

Increase farm labor pool

- Partner with nontraditional workforce partners: returning citizens, juvenile offenders, developmentally-disabled adults, etc.
- Develop intern fund
- Explore financial incentives for job creation

Raise awareness about existing financial resources and develop new funding opportunities for growers and food-related businesses

- Develop mechanisms for short-term financial assistance
- Explore cost-share program for food-safety audits
o Expand awareness of, and better utilize, existing community resources, organizations, and institutions working in this area (NRCS EQUIP program, Slow Money, business development programs, etc.)
o Increase education around financial literacy and business-plan development

2. Develop New Growers and Other Food Businesses

Expand educational programming
- Support new agricultural programming at area universities
- Expand educational opportunities outside universities, as well
  - Subjects can include: business skills, business plan development, financial resources, technical farming skills, marketing, sales planning, crop planning, season extension, livestock, value-added production, land acquisition strategies and opportunities, and small-scale gardening for back yards and community gardens
- Utilize GU website as a platform for sharing inventory, education, and information

Support new farmer incubation programs that go beyond internships and/or classroom training
- Develop new farmer mentorship program

Strengthen ties to existing business development programs

Support land leasing or purchase for beginning production
- Locate/pool suitable agricultural land for expansion or new operations
- Link new growers with retiring farmers

Develop start-up funding mechanism for new growers
- Explore new grant-funding opportunities
- Direct new producers to existing financial resources

Create new community gardens and educate backyard growers

3. Increase Local Food Production at All Levels

Support farm preservation and transfer
- Match retiring farmers without heirs with aspiring farmers looking for land and provide support throughout that process
- Promote use of conservation easements or other tools that preserve farmland while simultaneously improving access for new farmers

Explore transition to specialty crops
- Conduct study of commodity growers to better understand potential interest, concerns, limitations in switching to specialty crop production
- Develop success case stories for commodity growers interested in transitioning

Support growers interested in extending the growing season or scaling up their operations
- See "Support Existing Local Growers" for more details

Increase number of community gardens and backyard gardeners

❖ DISTRIBUTION AND INFRASTRUCTURE RECOMMENDATIONS

1. Strengthen Regional Distribution of Local Food

Increase aggregation of local foods
- Support ongoing efforts to aggregate local food for distribution to institutions, restaurants, retail establishments, and individuals
- Conduct planning sessions with local growers

Build on existing distribution infrastructure
- Facilitate partnerships with small/mid-sized distributors looking to create a niche with local foods

Provide technical assistance and education
Provide technical assistance for growers around food-safety regulation compliance
- Explore opportunities for group GAP certification
- Educate local growers on how to better meet buyer needs (packing, grading, quality, communication, pre-cooling, etc.)
- Develop ‘best practices’ educational materials for growers and buyers

2. Increase Institutional, Retail, and Restaurant Purchasing of Local Food

Facilitate new partnerships
- Explore new institutional partners (e.g., prisons, senior centers)
- Facilitate grower partnerships with small/mid-sized distributors and small/mid-sized retailers
- Develop a feasible distribution model for corner stores

Develop incentives for local purchasing
- Develop incentives for institutions and other buyers to purchase local products
- Advocate for local-procurement policies

Provide technical assistance and education
- Provide education/develop materials for institutional, retail, and restaurant buyers through case studies, peer learning, etc. that cover best practices for local purchasing
- Host meeting/networking sessions to bring growers and buyers together
- Develop and share local-purchasing guidelines

3. Construct a Certified, Shared-Use Kitchen

Support current feasibility analysis and planning efforts

Provide infrastructure and support for both new businesses and those interested in scaling up
- Produce processing, meat processing, canning, cooking, milling, packing, flash freezing (for emergency food), business training, and marketing support, as well as community resources like cooking and preservation education, a food resource center, a tool library, a seed bank, meeting space, etc.

Healthy, Local Food Consumption and Access Recommendations

1. Increase SNAP/WIC Purchases of Fresh, Local Fruits and Vegetables

Increase SNAP/WIC acceptance at area farmers’ markets
- Increase staffing support and technical assistance to markets in application process
- Increase communication among farmers’ market managers in order to facilitate learning and sharing of best practices

Increase redemption of benefits at farmers’ markets
- Promote SNAP usage at farmers’ markets and in surrounding communities
- Increase number of markets offering “double up” or matching benefits as incentives to shoppers by securing financial backing
- Offer education for community members or direct participants through SNAP-Ed classes
- Co-locate farmers’ markets or other sales at federal nutrition feeding sites

Facilitate use of SNAP benefits for CSA programs and other creative arrangements
- Provide technical assistance and financial support to interested programs

Increase availability of fresh fruits and vegetables at SNAP-authorized retailers
- Support ongoing work with corner stores

Minimize transportation barriers
- Locate markets in areas accessible by public transportation, by bicycle, and on foot
- Explore alternative delivery methods (e.g., home delivery, etc.)
2. Increase Availability of Local Foods in All Parts of the Community

*Increase year-round markets for local products*
- Strengthen/increase winter farmers’ markets
- Develop a year-round storefront for local products

*Increase healthy, local produce in corner stores and other ‘fringe’ retailers*
- Support ongoing work with corner stores

*Institute and strengthen innovative markets and strategies*
- Expand mobile produce vending program

*Increase local purchases by existing food buyers (schools, grocery stores, corner stores, etc.)*
- Reduce barriers to serving healthy, local foods in schools and childcare centers
- Better connect community gardens, urban farms, and school gardens to market points

*Increase provision of healthy, local fruits and vegetables through food pantries and other emergency food providers*
- Support ongoing efforts to incentivize healthy food retail in areas of low access
  - Explore options for neighborhood grocery store chain model

3. Enhance Educational Opportunities for Local Consumers

*Provide education at food access points*
- Provide workshops and mini-courses on cooking, preserving, etc.
- Coordinate education efforts and share resources among organizations already doing this work

*Teach basic growing skills for backyard or community gardening*
- Provide materials like seed, starts, and containers

*Teach basic nutrition and cooking skills*
- Provide cooking utensils
- Increase participation in SNAP-Ed trainings

*Increase education at schools and childcare centers*
- Provide nutrition and gardening education
- Implement school gardens

4. Conduct an Outreach Campaign to Increase Consumption of Local Food

*Develop and implement local food media campaign*
- Reach consumers through print, social media, and radio
- Develop regional branding for local food products
- Include measures to connect consumers to local farms and farmers (farm tour series, etc.)

*Strengthen support resources for participants*
- Work specifically with three target populations, providing resources specific to the needs of each:
  - Low-income consumers
  - Worksites
  - GU member organizations
- Provide toolkits and other educational materials for participants
- Improve distribution of Central Ohio River Valley (CORV) Local Foods Guide and Edible Ohio Valley
- Develop signage and marketing tools for restaurants and other local businesses

❖ ORGANIZATIONAL CAPACITY RECOMMENDATIONS

1. Improve Stakeholder Communication, Information-Sharing, and Partnerships

*Host an annual gathering of food system stakeholders*
o Facilitate cross-regional collaboration, sharing of best-practices and successful models, and priority-setting for future initiatives
  o Work with partners to ensure grower participation
  o Build on past success of UC Food Congress events and utilize university resources

*Create a searchable online database of food system stakeholders and assets*
  o Develop local food website and resource portal (with mobile capacity) to serve as a definitive source for all things local food
  o Include mechanism for communication in site design
  o Increase awareness of food system efforts and reduce redundancy
  o Partner with CORV to build on existing plans and framework
  o Model website off sites in other areas (i.e., localfoodcleveland.org)

2. **Reestablish the Regional Food Policy Council**
   o Reinstitute the Cincinnati Regional Food Policy Council and build on prior efforts
   o Conduct a food policy audit of Cincinnati and other municipalities
   o Bring together county and city representatives, producers, processors, distributors, schools, researchers, nonprofits, public health agencies, anti-hunger advocates, etc.
   o Support a staff person to coordinate efforts

3. **Develop a Long-Term Strategic Plan**
   *Collect and maintain data and establish and identify additional community assets*
     o Partner with local universities
     o Conduct research on the following topics where gaps exist:
       - Food production, consumption, processing, distribution, county linkages, etc.
     o Use data collection process to develop systems for populating local food system indicators
     o Map food system assets using easily-updatable methods
     o Use findings to populate online database
   *Create actionable strategies, timelines, and partner commitments*
   *Develop, implement, and maintain financial support strategies to sustain local food initiatives*

4. **Create a Staffed Local Food System Advocate/Specialist Position**
   *Create position responsible for leading local food system activities*
     o Responsibilities can include fostering communication, partnerships, and urban/rural connectivity; organizing an annual gathering, media campaign, and web portal; and collecting annual food system metrics
The production, distribution, and consumption of local food products are closely intertwined. In the Central Ohio River Valley, diverse rural and urban farm operations, community gardeners, backyard growers, and value-added producers all take advantage of the region’s fertile soil, temperate climate, and ample rainfall to grow, raise, and make a variety of products for local consumption. Currently, community members obtain these products by joining community supported agriculture (CSA) programs, seeking out farmers’ markets, frequenting restaurants or supermarkets that prioritize local procurement, or growing their own.

For this report, more than 30 stakeholders were interviewed and numerous studies were analyzed. The United States Department of Agriculture (USDA), the Central Ohio River Valley (CORV) Local Food Guide, The Ohio State University Cooperative Extension, the University of Kentucky, and three Northern Kentucky Conservation Districts have collected data on local food production at different times and for different purposes. These data sources do provide some measure of current regional food producers and marketing strategies, though the information is often incomplete and/or outdated. Residential and commercial development pressures and an aging farmer population call into question the sustainability of current production levels, while food producers face financial and regulatory challenges, among others, that limit their ability to operate sustainable businesses.

The goal of the Green Umbrella Local Food Action Team is to double the percentage of fruits and vegetables sourced and consumed in the region by 2020. Key to achieving this goal will be increased support for local growers, the development of new growers and other local food businesses, and increased specialty-crop acreage under production. In order to strategically plan and measure increases in regional production, further data collection (farm location, acreage, crops/products, growing practices, etc.) and mapping will also be necessary (see Research Chapter 4: Organizational Capacity for a further discussion of data-collection needs).

A full list of research sources referenced in this section is included in Appendix A.

**CURRENT FOOD PRODUCTION AND SALES**

*Amount and Location of Current Regional Production*

According to the most-recent USDA Census of Agriculture (2007), vegetable farms represent 4.4% of all farms located in this report’s nine-county study area. However, the amount of acreage used to grow
vegetables on those farms accounts for only .002% of the total acreage under cultivation in the region, and organic acres are only .0004% (see Table 1) (USDA NASS, 2007). This means that 99.998% of the acreage in this region is currently used to raise other agricultural products like traditional commodity crops, cattle, hay, grains, and oilseeds, instead of fruits and vegetables.

Table 1: NASS 2007 Data Summary

<table>
<thead>
<tr>
<th>County</th>
<th>Land in Farms (acres)</th>
<th>Number of Farms</th>
<th>Avg Size of Farms (acres)</th>
<th>Vegetable Farms</th>
<th>Vegetable Acres (acres)</th>
<th>Organic Farms</th>
<th>Organic Acres (acres)</th>
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</thead>
<tbody>
<tr>
<td>OHIO</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Butler</td>
<td>127,194</td>
<td>949</td>
<td>134</td>
<td>38</td>
<td>137</td>
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<td>Clermont</td>
<td>104,691</td>
<td>898</td>
<td>117</td>
<td>45</td>
<td>186</td>
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<td>49</td>
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<tr>
<td>Hamilton</td>
<td>21,290</td>
<td>291</td>
<td>73</td>
<td>31</td>
<td>251</td>
<td>8</td>
<td>25</td>
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<tr>
<td>Warren</td>
<td>94,348</td>
<td>896</td>
<td>105</td>
<td>56</td>
<td>260</td>
<td>8</td>
<td>189</td>
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<tr>
<td>KENTUCKY</td>
<td></td>
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<tr>
<td>Boone</td>
<td>74,750</td>
<td>682</td>
<td>110</td>
<td>48</td>
<td>271</td>
<td>4</td>
<td>8</td>
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<tr>
<td>Campbell</td>
<td>47,335</td>
<td>535</td>
<td>88</td>
<td>7</td>
<td>D</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Kenton</td>
<td>42,544</td>
<td>481</td>
<td>88</td>
<td>13</td>
<td>31</td>
<td>2</td>
<td>D</td>
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<tr>
<td>INDIANA</td>
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<tr>
<td>Dearborn</td>
<td>65,830</td>
<td>564</td>
<td>117</td>
<td>13</td>
<td>19</td>
<td>1</td>
<td>D</td>
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<tr>
<td>Franklin</td>
<td>126,322</td>
<td>723</td>
<td>175</td>
<td>19</td>
<td>29</td>
<td>1</td>
<td>D</td>
</tr>
<tr>
<td>TOTAL/AVG</td>
<td>704,304</td>
<td>6,019</td>
<td>111.89</td>
<td>270</td>
<td>1,184</td>
<td>35</td>
<td>297</td>
</tr>
</tbody>
</table>

D=Data withheld to avoid disclosing data for individual farms

The CORV Guide is updated annually and includes growers located within a 50-mile radius of downtown Cincinnati, or within a 100-mile radius of downtown Cincinnati, as long as they also regularly sell within the 50-mile radius (it also includes listings of farmers’ markets, honey suppliers, restaurants sourcing local food, CSAs, and wineries) (CORV, 2013). The 79 farms listed in the 2013 CORV Guide represent only 29% of the vegetable farms counted by the USDA for the 2007 Census of Agriculture. This discrepancy is likely due to the fact that submissions to the CORV Guide are voluntary and dependent on a given producer’s interest in being listed; however, as the region’s only consistent and annually-updated source of producer information, the CORV Guide is used as a basis for area mapping, identification, and research. See Figure 1, Figure 2, and Figure 3 for examples of recent local food production mapping efforts.

Figure 1: Local Foods Action Team Regional Map by Human Nature, Inc. (2012)
Figure 2: City of Cincinnati Food Production Land and CHEF Project Sites (2011)

Source: Ng, 2012

Figure 3: Organized Urban Agriculture Sites Within the City of Cincinnati (2011)

Source: Ng, 2012

Ability to Meet Demand

In 2012, a UC Community Design Center graduate student compared USDA data on the market value of crops produced in the region to per capita consumption rates. This was done to determine the percentage of local consumption that could possibly be met by current rates of production (within the Cincinnati-Middletown Metropolitan Statistical Area (MSA)), before any importing or exporting occurred. The percentage of total consumption produced in the MSA at the time of this study was found to be 12.84% (Ng, 2012). The percentages for individual food categories were, for the most part, found to be quite small (see Figure 4). The “grains, oilseeds, dry beans, dry peas” and “other animals and animal products” (which includes honey) categories were the highest, at over 30%; however, this percentage
does not account for any processing that occurs outside the MSA (Ng, 2012). This data reveals that the potential demand for local food products is substantial and currently far outweighs production levels, thus creating a significant opportunity for growth.

Figure 4: Maximum Percentage of Local Food (Cincinnati MSA)

URBAN AGRICULTURE

During the 2009 growing season, The Corporation for Findlay Market began training apprentice farmers to grow market gardens with the support of a USDA NIFA Community Food Projects grant. In its current iteration, Findlay Market Farms! farmers are learning how to grow commercially on less than an acre and how to market their products through Tuesday and Sunday farmers’ markets at Findlay Market. The growers are currently growing on a total of about three acres of vacant land in the city, and they keep the income they make from the produce they sell.

The Cincinnati Health Department Urban Farming Program operates six urban gardens in Cincinnati. The program, in operation since 2009, has gardens at non-profits, recreation centers, and faith-based institutions. Twenty to thirty volunteers help keep each site running. While growing food was the initial goal of the program, developing and supporting the individuals within each of the communities has been an important outcome. Knowledge and experiences are shared between generations, and yields from the gardens are open to the community.

Cincinnati’s Urban Agriculture Program, administered by the Office of Environment & Sustainability, was formed in 2009. This program was created to allow community members to utilize vacant, city-owned parcels of land for agricultural use. Initially, the pilot program used six sites, but over the past several years, has expanded to include 12. The program has provided growers with resources for site improvements, training, and agricultural products.

Permaganic offers an Eco Garden Youth Internship Program, where teens receive job-readiness training while serving their community. They also operate a Needy Family CSA program to help provide fruits and vegetables to community members with limited access.

Other urban farms include Urban Greens and Enright Ridge Urban Eco-Village, both of which offer Community Supported Agriculture Programs.

Current Sales

Within the region, agricultural producers sell their products through a variety of channels. Of the 294 fruit and vegetable growers who responded to the Kentucky Produce Planting and Marketing Intentions Survey in 2012, 41.2% sell at farmers’ markets and 40.5% sell through on-farm markets, with other marketing channels receiving much less focus (see Table 2) (Woods, 2012).
Similarly, the 45 Ohio and Indiana growers interviewed by OSU Extension Agents in 2012, as part of a food hub feasibility study, also sell predominantly through farmers’ markets and on-farm markets (see Figure 5) (OSU South Centers, 2012). According to the 2013 CORV Guide, the Central Ohio River Valley is currently home to 38 farmers’ markets and 29 CSA programs (CORV, 2013).

Thirteen percent of the Kentucky growers (statewide) surveyed sell directly to wholesale markets, and 16% directly to retail (Woods, 2012). Of the Ohio and Indiana growers surveyed within 150 miles of Cincinnati, 5% sell to brokers/distributors and 6% sell directly to retail stores (OSU South Centers, 2012).

In all, 78.5% of the Kentucky growers and 72% of the Ohio and Indiana growers interviewed made less than $50,000 in gross sales in 2011 (Woods, 2012; OSU South Centers, 2012).

Table 2: Kentucky Marketing Channels

<table>
<thead>
<tr>
<th>Market Channels</th>
<th>Percent of farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers’ markets</td>
<td>41.2%</td>
</tr>
<tr>
<td>On-farm markets (U-pick, on-farm store/stand)</td>
<td>40.5%</td>
</tr>
<tr>
<td>Auction</td>
<td>17.3%</td>
</tr>
<tr>
<td>Direct to retail</td>
<td>16.0%</td>
</tr>
<tr>
<td>Non co-op wholesale</td>
<td>13.6%</td>
</tr>
<tr>
<td>Direct to restaurant</td>
<td>7.1%</td>
</tr>
<tr>
<td>CSA</td>
<td>3.1%</td>
</tr>
<tr>
<td>Cooperatives</td>
<td>2.7%</td>
</tr>
<tr>
<td>Farm-to-school</td>
<td>1.4%</td>
</tr>
</tbody>
</table>


Figure 5: Ohio and Indiana Marketing Channels
SUSTAINABILITY OF CURRENT PRODUCTION

An Aging Farmer Population

The average farmer in the United States is 57 years old (USDA NASS, 2007). Though the majority of farm operators are currently between the ages of 45 and 65, the fastest growing group of farm operators are those 65 years or older (USDA NASS, 2007). This aging of the national farmer population has implications for farmland preservation, farm transition, and the sustainability of current agricultural production levels, since as farmers age and face retirement, the potential for farmland sales and development also increases. This has direct implications for the future production of locally grown food.

Farmland Preservation

Despite a variety of farmland preservation options, the region continues to lose vital farmland. According to American Farmland Trust, in 1997, Ohio, Indiana, and Kentucky all ranked among the top twenty states in the nation in terms of losing prime farmland to development (American Farmland Trust, 1997). The Northern Kentucky Counties of Boone, Kenton, and Campbell have paid particularly close attention to this issue, each conducting surveys of their landowners and farmers in order to better understand these landowners’ future plans for their land. These studies have found that while Kentucky landowners are interested in maintaining the agricultural character of their counties, and in keeping their land in agriculture as long as they are alive, they are not yet willing to commit to maintaining their land as farmland in perpetuity. Most plan to pass their land on to family, but don’t know what those family members will choose to do with it. The risk, then, is that these farms will cycle out of production or be developed, and that the potential agricultural use of that land will be lost forever.

In 2004, the Kenton County Farmland Working Group found that despite a precipitous drop in the tobacco economy, a significant amount of farmland remained in production – a stability the group attributed to the Current Agricultural Use Value (CAUV) program, which assesses farmland at its current use value instead of its potential development value, making it advantageous to keep land in agricultural production. At that time, the authors found 174 farmers...
owning 17,270 acres, many of whom planned to farm “as long as I am able” (American Farmland Trust, 2004).

In 2010, Boone County conducted a survey of 340 agricultural landowners and found that the average age of respondents was 62 (higher than the national average), most of whom were married men. Most respondents were employed off the farm, with a small portion of their income coming from agriculture (Boone County, 2010). Most respondents planned to pass their land on to family members, though they did not know what their family would choose to do with it. They expressed strong interest in maintaining agriculture in Boone County, whether or not they wanted their own land to be farmed in perpetuity (Boone County, 2010).

Campbell County surveyed landowners engaged in agricultural production, as well as local teens, about the future of farming in the county. Survey respondents owned a total of 18,950 acres, and most landowners anticipated keeping their land in agricultural production for the rest of their lives. The survey found that “approximately 68% of the landowners would consider options for protecting their land if tax benefits were available. Local tax relief would be considered an incentive” (Campbell County Conservation District, 2004). Twenty-eight percent of teens surveyed indicated that they lived on a farm. Only 4.6% of those who responded planned to farm full-time in the future and 24.1% planned to farm part-time and hold a full-time job off the farm. Seventy-nine percent indicated that it was important that their family farm remains a farm, 30% said the family farm would be passed on to them, and 94% said that if it was, they would want to keep it as a farm (Campbell County Conservation District (Teen), 2004). While these Kentucky landowners expressed favorable sentiments towards keeping property within their families and maintaining it with an agricultural focus, in order to fulfill that desire, certain challenges will have to be addressed and positive farmland policies implemented.

**CHALLENGES FACING PRODUCERS**

*Season Extension*

Year-round production of fruits and vegetables in the Central Ohio River Valley is limited by the climate. In order to sustain and/or increase regional agricultural production levels, and to provide produce to markets on a year-round basis, some methods to extend the natural growing season need to be employed. As part of this report and analysis, a separate study looked at the current challenges faced by farmers when trying to extend their growing season. The complete Season Extension Report can be found in Appendix E.

An online producer survey and in-person interviews with producers and key stakeholders revealed that the following key challenges limit the ability of local growers to extend the growing season of local produce (Gangwer, 2013):

- **Funding limitations**: Funding was one of the key limitations described by growers, as high tunnels often cost upwards of $8,000 (though this amount may of course vary). Multiple farmers interviewed had taken advantage of cost sharing from the USDA Natural Resources Conservation Service (NRCS) Environmental Quality Incentives (EQIP) Program to pay for the initial purchase of their high tunnels. Without this assistance, many said they would not have been able to undertake season extension measures at that scale.

- **Finding and keeping quality labor**: Finding good labor and minimizing turnover are struggles for local growers at any point, but these challenges only increase with year-round or increased growing. Seventy percent of growers who responded to the online survey indicated that labor was a key
challenge, making it the most-frequently selected choice.

- **Grower education:** Many of the farmers interviewed were new to high tunnel growing and discussed the learning curve that comes with growing under plastic (timing of planting, crop selection, etc.). Numerous producers and stakeholders discussed an interest in season extension-related workshops, knowledge-sharing, and/or case studies for existing growers, as well as sharing of online resources and webinars.

- **Inadequate local markets:** Growers and stakeholders surveyed see a need for greater development of markets for local produce. Farmers reported a lack of adequate year-round outlets, as farmers’ markets are too small and distribution to restaurants can be inefficient.

- **A desire to maintain current scale:** Interviewees indicated limited interest in growth and increased season extension among small farmers, often because this means hiring outside labor.

**Scale**

When asked about the barriers to scaling up production in order to sell to wholesale markets, growers in Ohio and Indiana identified investment capital, cash flow, and labor as the most significant challenges (OSU South Centers, 2012). Additionally, many specialty crop growers currently produce at a small scale and have expressed limited interest in substantially increasing production (Gangwer, 2013; key informant interviews).

**Food Safety Regulations**

Good Agricultural Practices (GAP) are methods for growing, packing, handling, and storing fruits and vegetables that minimize risk of food safety hazards. GAP certification represents a major hurdle, especially for smaller-scale farmers who wish to aggregate their product and sell to a distributor. Independent GAP audits to review on-farm food safety practices are not currently mandated by the USDA, but are required by an increasing number of large-scale fruit and vegetable buyers/distributors. Ninety-six percent of the Ohio and Indiana growers surveyed by OSU in 2012 have no certification or only Level I GAP certification (education), while four percent have Level II certification (self-audit), and none reported Level III (independent, third-party certification) (OSU South Centers, 2012). Key informants raised concerns about these changing food-safety regulations and the effect they will have on the food system, as more buyers start to require Level III GAP certification. One producer feels that “insufficient attention has been paid to this issue,” which could eventually limit the outlets he and other local producers are able to sell to.

**Markets**

Key informants and farmer panelists at the 2011 Food Congress event described the following market-related challenges:

- Year-round markets for local produce are limited.
- The farmers’ market model is inefficient, because farmers must be present and sales are not guaranteed.
- Customers need education on price, products, and the value of fresh food, all of which can be time-consuming and energy-draining for individual farmers.
- Distribution to numerous restaurants with small orders is inefficient and time-consuming.
• Multiple income streams and diversified operations are currently necessary to sustain a farm business.

STRATEGIES FOR STRENGTHENING PRODUCTION

Support Existing Producers

In order to address the challenges of scale, season extension, funding, inadequate markets, and food-safety certifications, key informants recommended educational programming for current growers on topics such as: using technology and social media, growing for larger markets, scaling-up operations, adopting intensive growing methods (particularly for growers transitioning from tobacco and other commodities to specialty crops), and sharing available resources on marketing, production, financial planning, business management, and other topics. It was suggested that these educational opportunities come in the form of on-farm workshops, peer learning networks, and mentorship relationships, rather than through traditional “meetings.” This represents a clear message from growers on what kind of education they seek, and stakeholders who potentially can provide these educational opportunities will need to be identified.

Support for growers interested in season extension needs to include raising awareness of local funding resources like the NRCS EQIP program and Local Loans for Local Foods: A Slow Money Group, providing technical assistance for business planning and financial literacy, increasing training for beginning farmers to strengthen the labor pool, developing an intern fund to help subsidize farm internships, forging creative partnerships with non-traditional sources of farm labor, and expanding markets for local food (Gangwer, 2013). Once again, these efforts will require strong partnerships between stakeholders and much coordination in order to maximize the impacts of this work.

Develop New Growers

Key informants see a clear need to support the growth of new local farmers through training, internships, and a potential intern fund. In addition, new farmers who receive training need subsequent support in either finding a job on an existing farm, or finding land and obtaining financial support to start

FUNDING FOR FARMERS

Local Loans for Local Foods (LL4LF) is a Slow Money peer-to-peer lending network. Their purpose is to connect people who have capital available to lend, with local food enterprises that have need for low-interest loans and other funding. LL4LF hosts regular gatherings aimed at creating a community of interested lenders and borrowers.

The OEFFA Investment Fund is a project of the Ohio Ecological Food and Farm Association (OEFFA) working in partnership with the Sustainable Agriculture Fund, LLC. The purpose of the Fund is to promote sustainable agriculture in Ohio by making flexible and affordable capital available to farmers and farm-related businesses. Typically, investments range from $5,000 to $50,000 but requests for lesser amounts (minimum $2,500) and larger amounts (up to $250,000) are also considered.

Kentucky State University’s College of Agriculture, Food Science and Sustainable Systems has grants available for small-scale farmers who are motivated to improve their farming operations or improve the marketability of their products. The grants support three priority areas: certified organic (and transitioning) farming and marketing, value-added enterprise development, and aquaculture farming and marketing.

The Environmental Quality Incentives Program (EQIP) is a voluntary conservation program administered by the USDA Natural Resources Conservation Service (NRCS) reauthorized in the 2008 Farm Bill. Local growers may apply for funding for infrastructure like fencing and irrigation systems, high tunnels for season extension, and organic transition. Historically underserved producers (limited resource farmers/ranchers, beginning farmers/ranchers, socially disadvantaged producers, Tribes) may be eligible for a higher payment rate for the implementation of conservation practices and conservation plans.

The Northern Kentucky Conservation Districts (Boone, Kenton, and Campbell Counties) offer a variety of financial assistance programs, including a dead animal removal program and a farm dump removal assistance program.

Kentucky Proud members can be reimbursed for up to half of their eligible expenses for advertising, marketing, and reaching consumers at the point of purchase to promote Kentucky Proud products with direct Kentucky Farm impact.
their own operations. To this end, key informants suggested not only a fund that could be used to support interns, but one that could also help new farmers expand operations, finance hoop houses, purchase a cooler, etc. Development of a land bank for newly-trained farmers and programs to link new farmers with land opportunities were also suggested by local farmers and stakeholders. Linking new farmers with retiring ones could be one way to provide hard-to-find mentorship and land opportunities for farmers just getting started, and could also facilitate farm transfer, thereby keeping land in production.

**Sustain and/or Increase Production**

Many regional specialty crop growers currently produce at a small scale and have expressed limited interest in substantially increasing production (Gangwer, 2013; key informant interviews). Therefore, key informants suggested working with area growers who currently grow commodity crops in order to assess the feasibility of a switch to specialty crop production. If these farmers were to convert, even partially, to growing fruits and vegetables, it could both increase local production and also help create more mid-scale vegetable producers in the region. Due to the complicated nature of specialty crop production, key informants noted that education, case studies, and **proof of economic success** would be necessary when approaching potential candidates. This type of transition might come about most easily during intergenerational farm transfer or be of interest to individuals who currently lease out their land to commodity growers. To provide the case studies and proof of positive economic gain, more work needs to be done to gather this data and provide a mechanism to share reliable information.

The previously mentioned Kentucky landowner studies also identified ways to sustain and/or increase production, including prioritizing which farmland to protect; educating the public on the values of farmland; piloting a purchase of development rights program (PDR); developing programs that would promote agriculture and bolster the agricultural community; helping keep farmers on the land; and improving the economic viability of agriculture through operational diversification, marketing assistance, increased direct-marketing opportunities, and improved land management (American Farmland Trust, 2004; Boone County, 2010). All of these are ways to potentially keep farmers on the land, thus preserving area farmland and providing sources of local food for consumption.

**Markets**

While several neighborhood farmers markets operate year-round in the region, key informants suggested an additional space for year-round sales of local products, much like the successful Local Roots Co-op in Wooster, Ohio, where producers could display their products for sale without having to actually be there in person. Efforts are underway to develop just such a space at Findlay Market, and other venues feature local produce for sale as part of their regular inventory. Key informants also suggested different models that could address the inefficiency of the current farmers’ market model, including a system for ordering ahead, a food hub, etc.

Finally, while some restaurants currently source from local producers, formal efforts to facilitate connections between producers and restaurant buyers, to educate the two parties on how to best work together, and to streamline the distribution process to restaurants could increase restaurant purchases.

**CURRENT POLICY**

Production-related policy recommendations have been included in numerous city and county plans, including **PLAN Cincinnati** and the **2013 Green Cincinnati Plan**.
"Provide long-term lease options for the use of the identified vacant property for gardening or farming purposes and to protect gardens and farming from development pressure."

The 2013 Green Cincinnati Plan identified eleven recommendations that were pertinent to the City of Cincinnati and, if implemented, would have significant sustainability impacts.

The policy recommendations related to food production included the following:

- "Increase capacity for urban food production through zoning, incentives for food producing land and long-term leases that support community gardens, urban farms, and indoor farms. Provide garden spaces for community residents (rec centers, parks, city-owned parcels)."
- "Promote local sustainable urban farming practices to reduce fossil fuel expenditures (soil, cover crops, etc.)."
- "Create an accessible database of food production capacity in the city to include location, square footage, etc. (Conduct a land inventory of the city to determine properties suitable for food production such as urban farms, community gardens, municipal edible landscapes.)"
- "Support the incorporation of food system features into developer plans to include indoor agriculture, edible forestry, community gardens, etc."

Additionally, Tevis Foreman (2012) surveyed the zoning ordinances and comprehensive plans of North American cities for the Cincinnati Health Department and explored how these cities have implemented food policies within their municipal jurisdictions. Based on this survey, he offered ‘best practices’ that can be employed in Cincinnati in order to help holistically address regional food systems. In terms of production, these were:

- "Land tenure; identify and protect open space that provides food production potential."
- "Develop and implement local urban agriculture businesses through incentives."
- "Clearly identify and expand agriculture and urban agriculture opportunities in the planning process as a component of land-use and food policy."

**PRODUCTION RECOMMENDATIONS**

The ultimate goal of these recommendations, which come out of the previously-discussed research, publications, key informant interviews, and national best practices, is to double the percentage fruits and vegetables sourced and consumed in the region by 2020, thereby preserving local farmland, ensuring viable farms, and building the local economy with new farmers and food businesses.

4. Support Existing Local Growers

*Provide technical assistance to growers*
Topics could include: food safety regulations/GAP inspection, season extension measures, operational expansion or conversion to specialty crops, appropriate cover cropping techniques and soil fertility measures, etc.

**Facilitate new educational opportunities**
- Education could take the form of knowledge-sharing or traditional workshops on: season extension, operational efficiency, training and support for mid-size farmers, new farming methods, small business training, financial literacy, livestock/grazing methods, greenhouse design, value-added products (cheese, etc.), community gardening, and backyard growing
- Support learning networks between urban and rural farmers

**Support land leasing or purchase for expanded production**
- Locate/pool suitable agricultural land for expansion or new operations by connecting strategic partners
- Link new growers with retiring farmers
- Extend lease terms for Urban Ag sites that are publically owned (i.e. by City/County)
- Develop MOU template for lease arrangements with private property owners and farmers/gardeners

**Support new production partnerships**
- Structure formal mentoring programs
- Foster rural-urban collaborations in co-marketing, co-branding, or shared-use facilities
- Match medium-scale producers (10-200 acres) with larger-scale food purchasers
- Identify neighborhood partners to share gardening information, host workshops, and provide resources

**Increase farm labor pool**
- Partner with nontraditional workforce partners: returning citizens, juvenile offenders, developmentally-disabled adults, etc.
- Develop intern fund
- Explore financial incentives for job creation

**Raise awareness about existing financial resources and develop new funding opportunities for growers and food-related businesses**
- Develop mechanisms for short-term financial assistance
- Explore cost-share program for food-safety audits
- Expand awareness of, and better utilize, existing community resources, organizations, and institutions working in this area (NRCS EQUIP program, Slow Money, business development programs, etc.)
- Increase education around financial literacy and business-plan development

**5. Develop New Growers and Other Food Businesses**

**Expand educational programming**
- Support new agricultural programming at area universities
- Expand educational opportunities outside universities, as well
  - Subjects can include: business skills, business plan development, financial resources, technical farming skills, marketing, sales planning, crop planning, season extension, livestock, value-added production, land acquisition strategies and opportunities, and small-scale gardening for back yards and community gardens
- Utilize GU website as a platform for sharing inventory, education, and information

**Support new farmer incubation programs that go beyond internships and/or classroom training**
- Develop new farmer mentorship program

**Strengthen ties to existing business development programs**

**Support land leasing or purchase for beginning production**
- Locate/pool suitable agricultural land for expansion or new operations
- Link new growers with retiring farmers
Develop start-up funding mechanism for new growers
  o Explore new grant-funding opportunities
  o Direct new producers to existing financial resources
Create new community gardens and educate backyard growers

6. Increase Local Food Production at All Levels
Support farm preservation and transfer
  o Match retiring farmers without heirs with aspiring farmers looking for land and provide support throughout that process
  o Promote use of conservation easements or other tools that preserve farmland while simultaneously improving access for new farmers
Explore transition to specialty crops
  o Conduct study of commodity growers to better understand potential interest, concerns, limitations in switching to specialty crop production
  o Develop success case stories for commodity growers interested in transitioning
Support growers interested in extending the growing season or scaling up their operations
  o See “Support Existing Local Growers” for more details
Increase number of community gardens and backyard gardeners
Local fruits and vegetables are distributed throughout the Central Ohio River Valley in a variety of ways, with varying degrees of separation between the farmer and the end consumer. Farmers in the region often sell directly to consumers through farmers’ markets, community supported agriculture (CSA) programs, and farm stands. They also sell to retail stores and restaurants, who then make those products available to the end consumer. And finally, some farmers sell to food distributors, who then re-sell the product to institutions, retailers, and restaurants before it makes its way to the end consumer. Each of these distribution methods plays an important role in the local food system and provides access to local food for different populations in different ways.

While the region enjoys a strong conventional food distribution infrastructure, most large-scale distributors currently do not work with small-scale, local producers, who often lack the quantity and consistency of product that the distributors need. Opportunity exists to increase the amount of local produce that moves through these traditional distribution channels, or to create new channels altogether, but it will take a variety of changes – including aggregation of local product, price flexibility, technical assistance for growers, and improved infrastructure – to significantly increase the distribution of local food.

While many local food efforts focus on farmers who sell their products directly to consumers (through farmers’ markets, farm stands, CSAs, etc.), this type of distribution is limited in comparison to retail purchases in terms of scale. According to the USDA Economic Research Service, “almost 90% of all food for home consumption is acquired from retail venues (such as grocery stores)” (USDA ERS, 2011, in Clark et al, 2011). This suggests that increasing the flow of local foods through existing large-scale distribution and retail channels will be an important strategy for reaching the Green Umbrella Local Food Action Team’s goal of doubling the percentage of local fruits and vegetables sourced consumed in the region by 2020.

### Research Chapter 2: Distribution and Infrastructure

**Distribution**: The process of making a product available for use or consumption. Food distribution includes moving items from one location to another, as well as packing, processing, refrigerating, or storing them. Distribution therefore requires infrastructure, such as roads, vehicles, commercial kitchens, refrigerators, and warehouses.

This chapter will cover the following:

- Current Institutional and Retail Purchasing and Distribution
- Needs of Institutional and Retail Purchasers and Distributors
- Opportunities for Regional Distribution
- Infrastructure Needs
- Current Policy
- Distribution and Infrastructure Recommendations

A full list of research sources referenced in this section is included in Appendix A.
CURRENT INSTITUTIONAL AND RETAIL PURCHASING AND DISTRIBUTION

Current Distribution and Purchasing

In 2011, researchers at The Ohio State University’s Center for Farmland Policy Innovation and the College of Food, Agricultural, and Environmental Science’s Social Responsibility Initiative surveyed Ohio distributors and retail buyers in order to inventory the existing relationships between Ohio’s producers, distributors, and retailers – with the goal of identifying the opportunities, barriers, and needs associated with increasing the flow of Ohio-grown fruits and vegetables to local retailers and consumers. Thirty-nine fruit and vegetable distributors, who employ a total of 753 full-time and 37,620 part-time workers, responded.

In addition to produce, these distributors also often carry dairy and eggs, meat, fish, general line groceries, and frozen products. They primarily supply produce to supermarkets, followed by convenience/corner stores, and greenmarket or specialty produce stores (Clark et al, 2011). In addition to these retail outlets, distributors also serve restaurants, hotels, educational institutions, government agencies, prisons, hospitals, and other institutions (Clark et al, 2011).

In order to better understand barriers to market access, these researchers found it useful to classify Ohio distributors by size:

- **Large distributors** reported selling more than $15 million in the year prior to the survey.
- **Mid-sized distributors** reported selling $5 million – $15 million in the year prior to the survey.
- **Small distributors** reported selling more than $1 million – $5 million in the year prior to the survey.
- **Very-small distributors** reported selling less than $1 million in the year prior to the survey.

Researchers found that large and mid-sized distributors primarily rely on grower-shippers (large producers who distribute their own produce to wholesalers, retailers, food service providers, etc.). Small and very-small distributors more often work directly with smaller-scale farmers and also source from other wholesalers. Purchases of Ohio produce (as a percentage of total produce purchases) decreased as the size of the distributor increased; however, larger distributors purchased a higher volume of Ohio produce overall (Clark et al, 2011).

These distributors surveyed purchased an average of $493,476 of Ohio-grown fruits and vegetables in 2009 (Clark et al, 2011). During the height of the Ohio growing season:

- **Large distributors** source an average of 18% of their produce from local and 22% from regional sources.
- **Mid-size distributors** reported sourcing an average of 34% of their produce from local and 37% from regional sources.
- **Small distributors** purchased an average of $311,333 of Ohio-grown fruits and vegetables in 2009. At the height of the growing season small distributors source an average of 53% of their produce from local and 11% from regional farms.
- **Very-small distributors** purchased an average of $119,166 of Ohio-grown fruits and vegetables. An average of 65% of their inventory was sourced from local and 2% from regional farms.

Additionally, through in-depth interviews with six retail outlets, the OSU researchers found that “as retailers grow in size, distribution becomes increasingly formalized and vertically integrated,” meaning that each step in the supply chain is eventually owned by a single, large retail company. As a result, the...
opportunities for small and medium-sized Ohio farmers to service large-scale retailers are reduced (Clark et al, 2011). Regional and national chains work directly with larger farms, grower-shippers, and co-ops that they have long-term relationships with. These suppliers are able to provide the quantity and quality desired within the stores’ required time frame. **Small and mid-sized retail buyers expressed more flexibility in their purchasing decisions.**

In Cincinnati, a study of the University of Cincinnati’s food system revealed that most of the food distribution on campus occurs through Sysco and Delhi Foods (Rui, 2009). Aramark has been the University of Cincinnati’s contracted food-service provider since 2000, and is thus responsible for day-to-day food operations (food supplying, working with distributors, safe handling, storage and preparation of meals). Depending on the season, the food on campus primarily comes from California, Florida, South Carolina, and Georgia, with some additional products being imported from Mexico, Chile, and India. As a large food distributor, Sysco fits the trends described in the aforementioned OSU study in terms of sourcing, and this relationship between Sysco (distributor) and Aramark (food service provider) is a common one among institutions. In this institutional distribution model, produce flows from large farms, to a large distributor, to a food service provider that has been hired by an institution to manage, prepare, and sell that food to the end consumer (in this case, a university student).

Nine Cincinnati-based buyers were also surveyed for a food hub feasibility study conducted by Our Harvest Cooperative in 2012 and 2013. The buyers ranged in size and scope from universities and food-service providers to produce distributors, faith-based communities, and restaurants. These buyers reported purchasing from a range of sources, including local farmers; local and regional distributors; large, international distributors; and large farms that ship regionally (Our Harvest Cooperative, 2013).

**Distribution Trends**

**DISTRIBUTION**

**Green B.E.A.N.** is a dynamic food company that takes a multifaceted approach to building local food systems. **Tiny Footprint Distribution** aggregates and distributes local and sustainable food products throughout the Midwest. Since 2009, Tiny Footprint Distribution has supplied locally produced products to end retailers through its low-carbon-footprint distribution network. **Green B.E.A.N. Delivery** is an online service that provides fresh produce and groceries to Cincinnati residents. Green B.E.A.N. also operates the EcOhio in Warren County, OH, which supplies some of the produce for customer orders.

**Our Harvest Cooperative** currently farms on 4.25 acres in Cincinnati, trains new farmers, and sells to local restaurants, groceries, farmers’ markets, and a 200-share CSA program. In 2013, OHC will begin partnering with other area growers and food producers to aggregate local products for different markets. The goal of this effort is to provide greater quantity and consistency of supply for institutional and retail buyers.

**Ellenbee Leggett** is a Cincinnati-based distributor of premium foodservice products. The company services the Ohio, Kentucky, Indiana and West Virginia markets. Ellenbee works to source local produce when possible, and has partnered with local food efforts like the Greater Cincinnati Health Council’s Sustainable Produce Initiative.

OSU researchers identified a variety of trends on the rise in Ohio’s distribution industry, including the requirement of **liability insurance, traceability systems to track where produce originated, and third-party certification for on-farm food safety measures.** Distribution of organic food, and **setting packaging and product standards, is also becoming more common.** On the other hand, spot buying, verbal agreements, consignment, and the number of specialty distributors are decreasing (Clark, 2012).
NEEDS OF INSTITUTIONAL AND RETAIL PURCHASERS AND DISTRIBUTORS

All of the Cincinnati buyers questioned during Our Harvest’s aforementioned food hub feasibility study stated that product traceability, liability insurance, HACCP Certification (a management system that addresses food safety), farm food safety plans, and compliance with farm labor requirements are important to their purchasing decisions. All but one respondent stated that GAP Certification (good agricultural practices) is also important (Our Harvest Cooperative, 2013).

These requirements line up with the findings from Clark (2012), who reported that the key factors important to Ohio distributors in their relationships with growers are trace back and third party certification, in addition to the duration/seasonality of product and developing formal contracts specifying future purchases. The need for consistent standards seems to be increasing as well. Large distributors more often require uniform standards, such as contracts, packaging, and PLU coding, and large retailers more often seek formalized certifications, as producers are further removed from end consumers (Clark, 2012).

The primary challenges Clark sees for distributors who work with smaller-scale farmers are the short growing season, insufficient volume at identified times, poor packaging, inconvenience in purchasing, and inadequate pre-cooling. Even among retailers who are committed to purchasing from local growers, the challenge of managing too many vendor accounts can cause frustration and inefficiency. Retailers want to have a relationship with their farmer vendors, but also need consistent and efficient ordering and distribution processes in place.

Local key informants see institutional purchasing of local food as one way to provide healthy, local produce to the community at large, and they recognize the need for a distribution model that includes local food but also meets the needs of large-scale buyers.

OPPORTUNITIES FOR REGIONAL DISTRIBUTION

Demand

Opportunity exists to develop a regional distribution system of local foods. Seventy-one percent of the buyers who responded to the food hub buyer survey (five out seven who answered the question) expressed the highest possible level of interest in purchasing local fruits and vegetables from a local food hub (Our Harvest Cooperative, 2013). And according to Clark, research has demonstrated a high demand for Ohio-grown products by Ohio consumers. The increase in popularity of farmers markets and CSAs across the region further reflects this upswing in popularity for locally-grown produce. Even Kroger markets “locally grown” items in the produce section of their stores, and Walmart has launched a campaign as well. While the definition of local at Kroger (within one day’s drive) is well beyond the immediate region, it does reflect an ever-growing interest and awareness on the part of the consumer.

Existing Infrastructure

Opportunity can also be found in the region’s existing distribution infrastructure. Most of the distributors interviewed by Clark agreed that transportation costs are lowered by using Ohio produce, and many of the surveyed distributors are interested in partnering with growers and agencies to develop infrastructure that would increase the flow of Ohio-grown produce (see Table 3) (Clark et al, 2011).
Table 3: Distributor Reasons for Purchasing Ohio Produce

<table>
<thead>
<tr>
<th>Priority</th>
<th>Large Distributors</th>
<th>Medium Distributors</th>
<th>Small Distributors</th>
<th>Very Small Distributors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transportation costs are lowered by purchasing Ohio produce.</td>
<td>Ohio produce is fresher in season.</td>
<td>Ohio produce is fresher in season.</td>
<td>Ohio produce is fresher in season.</td>
</tr>
<tr>
<td>2</td>
<td>Customers care that produce is raised in Ohio, yet are less likely themselves to believe Ohio produce is inherently a better product.</td>
<td>Ohio produce is less expensive and transportation costs are lowered.</td>
<td>Have a commitment to Ohio growers and transportation costs lower.</td>
<td>Have a commitment to Ohio growers and transportation costs lower.</td>
</tr>
</tbody>
</table>

Source: Clark, 2011

Previous Ohio research found that, due to long-standing relationships and convenience, the majority of retail food buyers in Ohio (83% of restaurants and 90% of retail outlets) actually would prefer to purchase from a food distributor rather than directly from a farmer (Inwood et al, 2009, in Clark et al, 2011). Given this preference, farmers will need better access to traditional distribution networks in order to take advantage of the increased interest and demand for locally grown and produced food. Developing a distribution model that maximizes the benefits of local produce (freshness, lower transportation costs, customer demand) while still supporting and sustaining local farmers will be key to a strong local food system.

Key informants also suggested forming a distribution cooperative or exploring other creative partnerships with entities like Ellenbee Leggett, Pic’s Produce, and the Freestore Foodbank, who are already distributing local products.

Scale

“For small and mid-size distributors searching for ways to differentiate themselves, gaining a foothold in the Ohio-grown produce market can translate into increased and diversified markets” (Clark et al, 2011). And while larger produce growers are already networked into mainstream distribution channels, significant opportunities exist for small and medium volume growers to aggregate produce and access medium and larger-sized markets.

In particular, Jill Clark suggests that an opportunity exists for “agriculture of the middle,” which would include mid-sized farmers and mid-sized processors operating in conjunction at a regional level. Regional mid-size chains and independent grocery stores report a willingness to purchase from local, small and medium-sized farms; this increases when there is a common aggregation point like an auction or distributor who carries local produce (or potentially a food hub). Produce buyers and store managers of regional mid-size chains and independent stores also tend to have more autonomy in their purchasing. At the University of Cincinnati, Ruiz (2009), too, suggested switching to a small food-service company that might be more sustainably oriented and able to offer more environmentally-minded services and more local products.

Aggregation

The primary barriers Clark et al (2011) sees to strong regional distribution are the lack of supply of Ohio-grown produce and lack of aggregation of product. She sees room to develop and grow within the
current system, and a need to facilitate aggregation so that smaller farms can meet the needs of distributors and retail buyers.

Key informants also recommended a centralized aggregation and distribution facility that would streamline distribution of local products and allow farmers to focus on production rather than marketing and product sales. Informants suggested supporting growers interested in scaling up, as well as coordinating a planning meeting among growers who would be interested in sourcing to an aggregator. In Clark's study, regional and mid-size chains and independent retailers interviewed expressed an interest in working with farmers to develop a produce list and planting schedule. "Retailer, distributor, and farmer networking and planning sessions could create new opportunities for Ohio’s small and medium-sized fresh fruit and vegetable farmers” (Clark et al, 2011).

Produce Auction

A 2011 study by the University of Cincinnati Community Design Center and the Corporation for Findlay Market assessed the feasibility of developing a produce auction in Cincinnati, which would provide an opportunity for increased sales of local produce to institutions and other buyers. The study found that with consistent, committed growers and buyers, auctions can become a profitable business model (Ng, 2011). However, though successful auctions exist in other parts of Ohio and Kentucky, the response to this survey, as well as interest in a local auction, was limited. While some growers did express a willingness to grow additional product for an auction, others said they were not interested in a produce auction because they already had sufficient outlets for all of their produce or they had concerns about profit margins. Buyers expressed hesitation based on auction prices and lot sizes (Ng, 2011).

Commercial Kitchens

Findlay Market has completed a draft of a feasibility study for a share-used kitchen incubator/accelerator. An incubator serves new food businesses and an accelerator takes existing value-added food products and helps them ramp up production and sell to larger institutional buyers. This kitchen would serve a mix of tenants, from start-ups to successful businesses looking to scale up. Some of Findlay Market’s current vendors have a need for commissary space, as well. Research has shown that there is demand from both producers and buyers. Primary considerations are the economic feasibility of the model and raising the capital to build the space. Research shows that successful kitchens also have wrap-around services like business planning, bulk purchasing, marketing, etc.

The Ohio Valley Foodshed Project, started by Valerie Taylor, developed plans for a commercially-licensed community kitchen and community cooperative food pantry to be housed in an underserved urban neighborhood. The planned facility also would have included space for education. In addition to planning for a community kitchen, the Ohio Valley Foodshed Project also saw the need for a mobile teaching kitchen, a mobile “farmers’ market”, and a mobile meat-processing unit. Though this project is no longer in operation, the need for these facilities persists.

**INFRASTRUCTURE NEEDS**

Key informants expressed a need for a commercial kitchen space that could support value-added product development and production, food processing for institutional buyers, and cooking education for community members. While certified kitchens currently exist in churches, schools, and other places throughout the community, these facilities often have schedule restrictions and are not designed for food-based businesses. Findlay Market has conducted a feasibility study for a shared-use kitchen incubator/accelerator (an accelerator takes existing value-added food producers and helps them ramp up production and sell to larger institutional buyers), which could also provide commissary space. The study showed that demand exists on both the producer and buyer side; however, the renovation and operating costs would likely be high. Successful certified kitchens also often offer wrap-around services
such as help with business planning, bulk buying, marketing, etc. to enhance sustainability and financial success of the businesses involved.

**CURRENT POLICY**

The 2013 *Green Cincinnati Plan* identified eleven recommendations for the City of Cincinnati that related to food, and, if implemented, would have significant sustainability impacts.

The policy recommendations related to food distribution and infrastructure included the following:

- “Assess, develop and adopt financial incentives for small to midsize food processors, especially local fruits and vegetables.”
- “Develop local purchasing guidelines and incentives for governments, hospitals and institutions.”

Additionally, as mentioned in the previous chapter, Tevis Foreman (2012) surveyed the zoning ordinances and comprehensive plans of North American cities for the Cincinnati Health Department and explored how these cities have implemented food policies within their municipal jurisdictions. Based on this survey, he offered 'best practices' that can be employed in Cincinnati in order to help holistically address the regional food system. In terms of distribution and infrastructure, the best practices included:

- “Establish infrastructure; support local food production and processing, and promote activities and infrastructure that improve healthy food access and security.”
- “Support institutional procurement policies to encourage sourcing of local food.”

**DISTRIBUTION AND INFRASTRUCTURE RECOMMENDATIONS**

The ultimate goal of these recommendations, which come from the previously-discussed research, publications, key informant interviews, and national best practices, is to double the percentage fruits and vegetables sourced and consumed in the region by 2020. As the key link between production and consumption, improved distribution of local foods will help facilitate this goal.

1. **Strengthen Regional Distribution of Local Food**

   - *Increase aggregation of local foods*
     - Support ongoing efforts to aggregate local food for distribution to institutions, restaurants, retail establishments, and individuals
     - Conduct planning sessions with local growers

   - *Build on existing distribution infrastructure*
     - Facilitate partnerships with small/mid-sized distributors looking to create a niche with local foods

   - *Provide technical assistance and education*
     - Provide technical assistance for growers around food-safety regulation compliance
     - Explore opportunities for group GAP certification
     - Educate local growers on how to better meet buyer needs (packing, grading, quality, communication, pre-cooling, etc.)
     - Develop ‘best practices’ educational materials for growers and buyers
2. Increase Institutional, Retail, and Restaurant Purchasing of Local Food

**Facilitate new partnerships**
- Explore new institutional partners (ex: prisons, senior centers)
- Facilitate grower partnerships with small/mid-sized distributors and small/mid-sized retailers
- Develop a feasible distribution model for corner stores

**Develop incentives for local purchasing**
- Develop incentives for institutions and other buyers to purchase local products
- Advocate for local-procurement policies

**Provide technical assistance and education**
- Provide education/develop materials for institutional, retail, and restaurant buyers through case studies, peer learning, etc. that cover best practices for local purchasing
- Host meeting/networking sessions to bring growers and buyers together
- Develop and share local-purchasing guidelines

3. Construct a Certified, Shared-Use Kitchen

**Support current feasibility analysis and planning efforts**

**Provide infrastructure and support for both new businesses and those interested in scaling up**
- Produce processing, meat processing, canning, cooking, milling, packing, flash freezing (for emergency food), business training, and marketing support, as well as community resources like cooking and preservation education, a food resource center, a tool library, a seed bank, meeting space, etc.
**HEALTHY, LOCAL FOOD CONSUMPTION AND ACCESS**

**Healthy, Local Food Consumption and Access:** Access is a measure of how easy or difficult it is for a person to secure food for a healthy diet, which includes fresh fruits and vegetables. Access can be limited by poverty, walking distance, public and private transportation, safety, cost, and other factors. Consumption of fresh fruits and vegetables is not only dependent upon access to those items, but also upon education and the many other factors that influence individual decision-making on a daily basis.

In recent years, there has been concerted effort to reduce the disparities in healthy food consumption and access that exist in the Central Ohio River Valley. Much research has been conducted on healthy food access, and a variety of research methods have been used to identify areas with limited access to fresh fruits and vegetables. Unfortunately, as the data reminds us, areas of low access and poor health are still common in our region. However, an opportunity exists in the many and varied strategies that have been proposed to overcome barriers to healthy food access, and in the energy and attention now being paid to this issue.

The goal of the Green Umbrella Local Food Action Team is to **double the percentage of fruits and vegetables sourced and consumed in the region by 2020**. Key to this goal is the desire to ensure that all members of the community have access to affordable, local, healthy, sustainable food. In order to succeed, efforts must overcome the barriers posed by poverty, the proximity and ease of unhealthy and fast food choices, the lack of fruits and vegetables in corner stores, and the need for increased education around making healthy food choices. Intentional, coordinated efforts to raise awareness and educate the public are needed to build a stronger local food system.

**THIS CHAPTER WILL COVER THE FOLLOWING:**

- **Health Measures**
- **Emergency Food and Federal Programs**
- **Measuring Access**
- **Strategies for Increasing Consumption and Access**
- **Current Policy**
- **Healthy, Local Food Consumption and Access Recommendations**

A full list of research sources referenced in this section is included in Appendix A.

**HEALTHY MEASURES**

Improving access to, and consumption of, local fruits and vegetables is an important way to improve health in the region. In a 2010 Community Health Status Survey, the Health Foundation of Greater Cincinnati (now Interact for Health) found that fewer than one in four adults in Greater Cincinnati met the recommendation of two servings of fruit and three of vegetables per day (Health Foundation, 2010). Adults in Hamilton County’s suburbs met the recommendation at the highest rate in the region (29%), while adults in rural Kentucky counties reported the lowest rate (14%). Over half of Greater Cincinnati residents eat fast food at least once each week (Health Foundation, 2010). Additionally, more than two-thirds of Kentucky adults were found to be overweight or obese in 2009. Childhood obesity rates tripled...
between 1980 and 2009, and a third of the babies born in Kentucky in the year 2000 will develop diabetes in their lifetime (Partnership for a Fit Kentucky, 2009).

**EMERGENCY FOOD AND FEDERAL PROGRAMS**

Poverty is often linked to limited access to fresh fruits and vegetables. In the Central Ohio River Valley, emergency food recipients and participants in federal programs (like the Supplemental Nutrition Access Program (SNAP) and Women and Infant Children (WIC)), in particular, often don’t have the opportunity to purchase healthy food. In Ohio, 17.8% of the population is food insecure. In Kentucky and Indiana, 17.2% and 16.3% of residents, respectively, don’t know where their next meal is coming from. Twenty-five percent of children in Ohio, 22.4% in Kentucky, and 22.7% in Indiana are also food insecure (Feeding America).

In 2010, the Freestore Foodbank provided emergency food for an estimated 174,800 different people. Of those served by the Freestore Foodbank, 35% of households included at least one employed adult; 77% had incomes below the federal poverty level during the previous month; and 19% were homeless (Mabli, 2010). Many clients reported choosing between food and other necessities like utilities (41%), rent or mortgage (42%), medicine or medical care (39%), transportation (44%), and gas for a car (33%). Additionally, 52% of client households served by the Freestore Foodbank were receiving Supplemental Nutrition Assistance Program (SNAP) benefits, though it is likely that more are eligible.

In Kentucky as a whole, as of 2012, 18.2% of residents were living below poverty, and 853,820 people were receiving Supplemental Nutrition Assistance Program (SNAP) benefits (University of Kentucky, 2012). The average SNAP benefit per person in Kentucky in 2012 was $267.52 per month (University of Kentucky, 2012). In 2009, 17,872 low-income families received SNAP benefits in Boone, Campbell, and Kenton Counties. In the same counties in 2007, an average of 5,087 infants and children received WIC benefits (University of Kentucky, 2012). In Hamilton County, between 2007 and 2011, the number of SNAP retailers increased 42%;

### EMERGENCY FOOD

The Freestore Foodbank distributes over 19 million pounds of food annually. In 20 counties in Ohio, Kentucky, and Indiana, they have a trusted network of over 275 local member agencies, which includes soup kitchens and shelters, food pantries, churches, daycare and senior centers, and many other community and social services organizations. In addition to this work, the Freestore Foodbank also operates The Giving Fields, a community farm that helps alleviate hunger in the community by growing fresh produce for Northern Kentucky agencies of the Freestore Foodbank.

The Ohio Agricultural Clearance Program (OACP) directs surplus agricultural products from more than 100 Ohio farmers, growers, and producers to Ohio’s 12 Feeding America foodbanks. The association works with its agricultural partners to purchase surplus commodity products and unmarketable fruits and vegetables, preventing unnecessary waste and reducing losses in the agricultural industry. The association distributes those nutritious items to member foodbanks, who in turn distribute that food to more than 3,300 local emergency food providers.

Similarly, in Kentucky, Farms to Food Banks provides fresh, healthy produce to Kentuckians in need while reducing losses for farmers. The Kentucky Association of Food Banks purchases Kentucky-grown surplus and #2 grade produce (perfectly edible but not saleable on the retail market) and distributes it at no cost to struggling Kentuckians through the food bank network. Individual farmers, produce auctions, and cooperatives can sell to the association.

CAIN-Churches Active in Northside is a non-profit faith-based organization of neighborhood churches in Northside. Each month, nearly 400 vulnerable families rely on CAIN for its emergency food pantry, help with rent and utilities, access to federal benefits assistance, and other services. Last year CAIN provided an estimated 30,000 pounds of fresh produce to its food pantry guests. The produce comes from the Freestore Foodbank, the Northside Farmers Market, and CAIN’s community garden. Items are labeled and often include a recipe or a sample to taste. Additionally, CAIN’s on-site garden provides fresh vegetables for the pantry. CAIN also encourages home gardens, and this past summer they gave out 108 tomato and pepper plants to people in need.
however, most of these new retailers were fringe venues like dollar stores, gas stations, and pharmacies (Gallagher, 2011). In general, SNAP-authorized retailers do not always offer healthy food options.

**MEASURING ACCESS**

Researchers have established a variety of ways to determine who has limited access to fresh fruits and vegetables. At a national level, the USDA offers multiple measures of healthy food access and methods for identifying food deserts. The USDA ERS Food Access Research Atlas provides food access data for populations within census tracts. In the map below, the green areas represent low-income census tracts with a significant portion of the population living further than 1 mile (urban) or 10 miles (rural) from a supermarket. The yellow areas are low-income census tracts with low access to a vehicle. Notably, while many of these areas fall within the city of Cincinnati, many also fall in surrounding counties that are more rural (see Figure 6).

Figure 6: USDA Food Access Map

Local food access mapping efforts lend nuance and specificity to USDA delineations, which often underestimate the seriousness of the food access problem in Hamilton County. As such, at least six different studies have taken six different approaches to identifying food deserts and measuring healthy food access (summarized in Table 4). In using different methodologies, and comparing different data, the studies identified a range of areas with limited access to healthy food in Hamilton and Butler Counties (see Figures 7-11). However, all assert that access to fresh, healthy food is not equal throughout the region, and that limited access is often linked to low income and low vehicle access.

**HEALTHY FOOD ACCESS**

Since 2008, Hamilton County Public Health has received funding from three major grant programs, together branded as the WeTHRIVE! Movement, which has led to the implementation of a variety of strategies to make healthy living easier throughout Hamilton County. One key component of this work is improving the availability of affordable, healthy food choices by: 1) Establishing new/alternative ways to get healthy food to underserved areas, 2) Improving the nutritional quality of food at existing venues where food is sold or consumed, and 3) Ensuring that the most vulnerable people can get to new/alternative and existing food venues. Extensive mapping was also conducted by the UC School of Planning as part of this effort.

Gabriel’s Place is a sustainable community space in the Avondale neighborhood of Cincinnati. They provide a produce marketplace, a community garden, a community kitchen, and culinary training for high school students. The garden and hoop house space are currently being expanded to accommodate more growing.

The mission of The Center for Closing the Health Gap is to lead the efforts to eliminate racial and ethnic health disparities in Greater Cincinnati through advocacy, education, and community outreach. Their programs include church-based community gardens, a nutrition train-the-trainer series, produce markets at churches and community centers, and a healthy corner store initiative.

In February 2012, the expanded City Food Access Task Force was asked to study ways to establish financing mechanisms that would incentivize new retail food establishments that offer healthy and nutritious foods to residents of Cincinnati’s food deserts. For more information, please see their report: “Cincinnati Fresh Food Retail Financing Fund: Proposed Elements.”

-CONT’D PAGE 43-
### Table 4: Food Access Studies, Methods, and Findings

<table>
<thead>
<tr>
<th>Source</th>
<th>Geography</th>
<th>Methods</th>
<th>Outcomes</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>McQueary, 2008</td>
<td>Cincinnati</td>
<td>Correlated neighborhood social character (economic, family, and ethnic characteristic data) and food insecurity. Food deserts were identified by mapping all grocery stores in Cincinnati and determining the percentage of each neighborhood not located within half a mile of a grocery store.</td>
<td>McQueary found a weak and negative correlation between “the social characters of the various neighborhoods and the percentage of residential parcels residing in a food desert.” The lack of correlation could signify that Cincinnati does not reflect national trends, or that the neighborhood is not the ideal unit of analysis.</td>
<td>Didn’t include transportation</td>
</tr>
<tr>
<td>Mann, 2009</td>
<td>Cincinnati</td>
<td>Mapped grocery stores within 500 meters of the Cincinnati incorporated boundary or 500 meters from a bus line and within 3 miles of the incorporated boundary. Drew a 500-meter service area around each of these grocery stores and identified food deserts as those areas outside of the grocery store service areas. Overlaid that GIS data with proposed sites for Cincinnati’s urban agriculture program to see if any overlap existed.</td>
<td>Mann found that in general, “the proposed sites did not overlap with the food deserts found in this study.”</td>
<td>Did not include small groceries, convenience stores, or farmers’ markets.</td>
</tr>
<tr>
<td>Gallagher, 2011</td>
<td>Cincinnati and Hamilton County</td>
<td>Developed a comprehensive food retailer database for Hamilton County (with a 5-mile buffer along the county border to account for individuals living near the county line who might shop across it). Divided retailers into ‘mainstream’ (those that support a healthy diet; i.e., grocery stores) and ‘fringe’ (those selling mainly ready-made foods; i.e., fast-food restaurants, convenience stores, gas stations). Applied a food balance scoring system, whereby the distance from the center of every block to the closest mainstream food venue was divided by the distance from the center of every block to the closest fringe food venue.</td>
<td>Gallagher found that 53% of Hamilton County residents (69% of Cincinnati residents and 37% of non-Cincinnati Hamilton County) live in areas with low healthy food access. In Cincinnati, this means that residents live 1.5 miles or more from a mainstream food venue. In the rest of Hamilton County, this means residents live 2 miles or more from a mainstream food venue. 21.5% of HC residents live in areas that have high food balance scores (closer to fringe venues than mainstream venues). Cincinnati residents must travel 3.5 times further to reach a mainstream grocer than a fringe food venue.</td>
<td></td>
</tr>
<tr>
<td>Auffery, 2012 (for WeThrive!)</td>
<td>Hamilton County</td>
<td>Used a variety of data sources to map areas distant from full-scale grocery stores with high poverty rates, areas distant from full-scale grocery stores with limited vehicle access, areas with a low number of full-scale grocery stores and a high number of corner/convenience stores, and areas with a low number of full-scale grocery stores and a high number of fast-food restaurants.</td>
<td>Auffery found that more than 16% of Hamilton County residents live in 31 critical areas where the walking distance to a grocery store is &gt;1 mile and the poverty rate is high. Nearly 22% live in 7 critical areas where the walking distance to a grocery store is &gt;1 mile, the poverty rate is high, and there is also low motor-vehicle availability.</td>
<td>Cleaning data and keeping it up to date are hurdles for ongoing work of this kind.</td>
</tr>
<tr>
<td>Cincinnati Food Access Task Force, 2012</td>
<td>Cincinnati</td>
<td>Used retail databases, Ohio Department of Health data, data from zillow.com, US Census Data, and American Community Survey to map weekly sales volume for supermarkets, supermarket sales and total population, supermarket sales and income, low supermarket sales and low income, and income and diet-related deaths – ultimately establishing areas with greatest need for supermarkets.</td>
<td>The Food Access Task Force determined that the areas with greatest need for more supermarkets, and which should generally be considered priority areas for the city, include: Avondale, North Avondale, Evanston, Paddock Hills, St. Bernard, Bond Hill, Elmwood Place, Winton Hills, Carthage, Roselawn, South Cumminsville, and South Fairmont, among others.</td>
<td></td>
</tr>
<tr>
<td>Miami University and OSU Extension, 2010</td>
<td>Butler County</td>
<td>Classified Butler County into High Density Urban, Low Density Urban, Suburban, Exurban, and Rural designations for analysis, and argued that suburban food insecurity characteristics differ from those of urban areas. Compared poverty data and automobile availability (2000 Census data) with distance to grocery stores in order to identify food deserts.</td>
<td>Researchers argued for an expansion of the traditional definition of a food desert to fit the more rural and suburban landscape of that county. And though they noted that some food pantries and farmers’ markets are available to offer relief, transportation still poses a hurdle in terms of access to those venues, and fast food ends up being an easier option.</td>
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HEALTHY FOOD ACCESS CONT’D

Numerous entities are working to increase SNAP and WIC redemption at farmers’ markets. One way farmers markets have found to incentivize redemption is through “double-up” or “matching” programs that increase the amount of produce individuals are able to purchase with their benefits. **Findlay Market** has been doing this through their SNAP Plus program since 2007 (funded by the P&G Fund). Recently, **CAIN** (Churches Active in Northside) has also applied for money to offer an incentive program, and the **College Hill Farm Market** has also explored options.

The **Nutrition Council** advances child health through nutrition and education. During the summer of 2013 they piloted a Farm-to-Family program with Hamilton County Educational Service Center, the Hamilton County Farm Bureau, Hamilton County Extension, and Hamilton County Head Start. The program provided fresh fruits and vegetables for 50 families for eight weeks during the summer. In addition to providing produce, educational programming and container gardens were also provided for parents and children.

The **Northern Kentucky Health Department** is working to increase opportunities for people to use SNAP and WIC vouchers on fresh fruits and vegetables, particularly those grown locally. This increased redemption may come from increasing the numbers of farmers’ markets that accept SNAP and WIC, but they are also exploring other methods of distribution that may better meet consumer needs.
Figure 9: Areas Distant from Closest Full-Service Grocery Store and High Poverty

Source: Hamilton County Public Health, 2013

Figure 10: Areas Distant from Closest Full-Service Grocery Store and High No-Vehicle Availability

Source: Hamilton County Public Health, 2013
Regional stakeholders have developed many strategies for increasing access to local fruits and vegetables in the areas identified as having the most need. Recommendations from the Cincinnati Food Access Task Force (2009, 2012), the WeThrive! Food Access Report (2013), a report for the Northern Kentucky Health Department (Fulk, 2010), Mari Gallagher’s (2011) study of food access in Hamilton County, and interviews with key informants have identified the following strategies for improving access:

- **Increase the availability of healthy, local fruits and vegetables in existing outlets**

  Improve access to healthy foods in retail outlets, restaurants, and communities, as well as through public programs, worksites, and government nutrition programs. Implement strategies to increase healthy options in existing venues where food is sold or served. Increase fresh fruits and vegetables at corner stores and traditional retail outlets. Incentivize conventional retailers to locate in low-income areas. Improve compliance with USDA SNAP program standards (i.e., ensure that retailers accepting benefits offer healthy food options).

- **Increase access to healthy, local foods through new outlets**

  Organizations and agencies throughout the community are pursuing a range of innovative markets to increase local produce and access to healthy, local food by all members of the community.

  The City of Cincinnati Office of Environment & Sustainability has started a **Mobile Produce Vending** pilot program, which allows for the vending of produce in 13 zones designated by the city. The program will hopefully create new markets for local producers and increase access to healthy, local fruits and vegetables for Cincinnati residents who might otherwise have limited access. Vendors are granted access on a first-come, first-served basis, with no guaranteed access to a particular location. The thirteen zones available this year are located in Camp Washington, East End, English Woods, Evanston, South Fairmont, Over-The-Rhine, West End, and Winton Hills.

  The goal of the Center for Closing the Health Gap's **Healthy Corner Store Initiative** is to increase the availability and sales of healthy, affordable foods in small-scale corner stores in underserved communities. Currently the Do Right! Healthy Corner Store Network has three stores in Avondale, with plans to expand the network to other stores in Avondale and throughout Cincinnati in the next couple of years. As part of the program, corner stores receive support in introducing healthy items, in-store training, marketing assistance, layout design support, and nutrition education.

  **Findlay Market** is also in the process of determining the feasibility of a year-round, indoor sales space – similar to the popular Local Roots Market & Café in Wooster, OH – where producers would be able to sell their products without having to spend their time manning the space. This type of market would require less time from the farmers (it would be staffed by volunteers) and thus would minimize their transaction costs.

  In the summer of 2013, **Friendly Market of Northern Kentucky** opened an outdoor farmers’ market and an indoor market that will be open year-round. The farmer’s market-style pavilion is open six days a week (closed Monday) and merchants lease spaces over three-day shifts. The interior space will include several local merchants, a section dedicated to Kentucky wineries, bourbons and micro-brewed beers, and a Kentucky Proud General Store.
Implement alternative strategies to get healthy food to residents in critical areas where corner/convenience stores are not located (alternative food distribution; church, school, and community gardens; mobile produce vending, etc.).

- **Improve transportation options**

Provide transportation options for low-income residents with limited access to healthy foods by working with Southwest Ohio Regional Transit Authority (SORTA) and grocery store retailers. Ensure residents in critical areas have transportation to existing full-service grocery stores and corner/convenience stores.

- **Conduct a media campaign**

Raise awareness of the importance of healthy eating through media and social marketing campaigns.

- **Ensure the affordability of local fruits and vegetables**

Find ways to guarantee healthy food options are affordable.

- **Increase use of SNAP/EBT for fruits and vegetables through farmers’ markets and other local-food outlets**

Though SNAP and WIC participants face numerous barriers to redeeming benefits at farmers’ markets, including transportation, restrictive market schedules, timing of benefits, lack of cooking equipment, high prices, and the perceived value of products available, key informants suggested addressing these challenges by offering incentive programs (otherwise known as “double-up” or “matching” programs), by increasing the number of farmers’ markets accepting SNAP and WIC, and by increasing cooking and nutrition education through programs like SNAP-Ed and this summer’s Farm-to-Family program. Other strategies could include exploring the use of SNAP benefits through Community Supported Agriculture programs.

- **Reduce barriers to serving fresh, local fruits and vegetables at childcare centers and schools**

Barriers currently exist to preparing fresh fruits and

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**EDUCATION**

The **Civic Garden Center** is a non-profit horticultural resource center that enriches lives through education, community beautification, and environmental stewardship. The CGC offers a Community Garden Development Training program, operates the Green Learning Station, and provides educational opportunities for children and adults.

The Southwest Ohio Chapter of the Ohio Ecological Food and Farms Association, or **SWOEFFA**, hosts workshops and events related to organic and local growing and eating. Spring 2013 marked the first State of the Plate conference, a smaller version of OEFFA’s popular statewide annual conference. This event included workshops and educational opportunities for growers and consumers alike.

**This-Land** facilitates educational opportunities within the Greater Cincinnati and Midwest region on urban and rural agriculture, ecological design, green building, and permaculture, with the goal of creating a regenerative and resilient bioregion and society for millennia to come.

Area **Cooperative Extension** offices – through Ohio State University, the University of Kentucky, and Purdue – offer a variety of educational programming for growers and consumers in every county. Extension agents in Northern Kentucky offer workshops on marketing, high tunnels, good agricultural practices, fruit, small orchard production, and other education for growers. They also offer SNAP-Ed training, preservation classes, and other education for consumers.

**Gorman Heritage Farm** is a 122-acre working farm and outdoor education center, which invites its visitors to explore and learn the history, methods and values of a working family farm in a natural setting. Gorman Heritage Farm offers educational programming through school field trips, farm camp, farm tours, cooking classes, adult and family classes, and garden workshops.

**Granny’s Garden School** develops, promotes, and supports hands-on learning experiences through school-based garden and nature programs to help children experience nature, the satisfaction of growing their own food, and to appreciate the simple pleasure of picking a flower.

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vegetables in childcare centers; however, Hamilton County WeTHRIVE! and the Northern Kentucky Health Department have worked on improving access and increasing consumption of fresh fruits and vegetables in child care centers. The WeThrive! Physical Activity and Nutrition Resolution for Child Care is aimed at improving the nutritional content of food served in childcare centers, and the Northern Kentucky Health Department has assisted with the implementation of the Nutrition and Physical Activity Assessment in Child Care (NAP SACC), which improves menus in childcare centers.

In 2010, the Northern Kentucky Health Department linked farmers with childcare centers and set up tailgate markets at five centers in conjunction with an educational program. The pilot increased parents’ knowledge and consumption of fruits and vegetables, but participating farmers lost money. Parents reported that they bought and fed more fruits and vegetables to their children after the program. However, they bought those fruits and vegetables from the grocery store, most likely because the grocery stores take SNAP/WIC and debit cards, and the farmers did not.

Hamilton County Health WIC office offered a similar event in 2012 at several WIC offices. Farmers sold out of their produce and made a profit. Since the program had a positive outcome and helped WIC recipients overcome some barriers (transportation issues; education; child care while shopping) the office planned to repeat the event in 2013.

Hamilton County Public Health WeThrive! has also worked with schools to develop and implement competitive food guidelines. Competitive foods are those offered to students outside of the National School Meal Program, including a la carte, vending machines, classroom celebrations, and before and after-school snacks. During a pilot program, health advisory councils were created in two school districts (Lockland and Princeton) to set nutrition standards that must be met for foods if they are to be served during the regular and extended school day. Prior to implementation of these guidelines, in August of 2010, 12.5% of the available products met the guidelines. By the end of the school year, 100% of products met the guidelines and continued to do so at the end of the second year of implementation (May 2012) (Kramer).

• Educate community members of all ages

EDUCATION, CONT’D

Hamilton Urban Garden Systems (HUGS) offers workshops on square-foot gardening while also installing and maintaining urban gardens and greenhouses for Cincinnati area markets, restaurants, residential communities, and homeowners.

The Greenacres Foundation offers a variety of gardening and agriculture-related educational programs for adults (individuals, garden clubs, civic groups, etc.) and children (scout troops, home school programs, etc.).

The Cincinnati Zoo & Botanical Garden has planted three edible gardens (sponsored by Chipotle and the Woodward Family Charitable Foundation), and plans to incorporate more programming around food into their Go Green Garden. They also have a greenhouse under construction. All of these efforts are intended to raise awareness about food among visitors, who are encouraged to pick and eat the food and think about food in the larger sustainability context. The Zoo has also partnered with Green Bean Delivery and Gabriel’s Place and plans to offer educational programming for students on their farm in Warren County (farmed by Green Bean Delivery).

Turner Farm offers experience-based learning opportunities for people of all ages about responsible land stewardship, the benefits of organic foods, and small-scale, low-impact food production. Turner farm offers gardening workshops for the general public, as well as internships for individuals interested in pursuing a career in farming.

Our Harvest Cooperative offers a two-year farmer apprenticeship program in partnership with Ohio State University Extension. The program is accredited through the Ohio Apprenticeship Council, includes both classroom training and on-farm work, and is intended for individuals interested in pursuing a career in farming.

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Education is an important component of increasing the likelihood that people will choose healthier food options when they are available and affordable. Key informants agreed that education will be needed to help the general public better understand the importance of eating locally, the ways to purchase and prepare local fruits and vegetables, the methods for growing their own food, and the realities of eating seasonally. In particular, key informants noted the importance of increasing nutrition and gardening education in schools.

The Supplemental Nutrition Assistance Program Education (SNAP-Ed) program provides nutrition education to SNAP recipients. Participants receive hands-on education and gain basic skills necessary to raise healthy families on limited incomes in a struggling economy. After participating in SNAP-Ed programs in Kentucky in 2012, 99% of participants reported a positive change in food groups consumed, 57% improved their meal planning and comparison shopping, 39% ran out of food less often, 58% then read food labels, and 34% were physically active for 30-60 minutes per day. Participants reported increasing fruit and vegetable intake by 1.2 servings/day (University of Kentucky, 2012).

**CURRENT POLICY**

Access-related policy recommendations have been included in numerous city and county plans, including *PLAN Cincinnati* and the *2013 Green Cincinnati Plan*.

*PLAN Cincinnati’s* (2012) goal of making sustainable access to and use of fresh, healthy food a priority in all neighborhoods included the following access-related recommendations:

- “Expand the current programming for creating, operating, and maintaining community gardens, including an enhanced public education component and partnerships with local food pantries.”
- “Identify additional potential locations in neighborhoods and Neighborhood Business Districts to provide increased access to fresh fruits, vegetables, and whole grains (i.e. farmers markets, corner stores, produce carts).”
- “Adopt an urban agricultural policy that supports food desert remediation.”
- “Revise city codes to allow for redevelopment of existing non-conforming corner stores.”
- “Provide additional incentives to stores selling fresh produce.”
- “Consider a program to regulate the number and nature of fast food establishments in the City.”
- “Provide access to fresh produce within a ½-mile or 15-minute walk, or ride by car or public transit from all residential areas.”
- “Incorporate nutrition education into school and after school curriculums.”
- “Expand health education outreach through community organizations, government agencies, local education providers, and health care providers.”

The *2013 Green Cincinnati Plan* identified eleven recommendations that were pertinent to the City of Cincinnati and, if implemented, would have significant sustainability impacts.
The policy recommendations related to access and consumption included the following:

"Support 10% campaign to encourage eating fresh, local foods in homes and businesses."

"Support policies and programs that increase access to local foods in all neighborhoods through traditional grocery stores and non-traditional channels such as farmers markets, co-ops, corner stores, mobile markets, CSA's, co-locating distribution sites at federal nutrition feeding site, etc."

"Raise awareness around local and plant based food issues through promotion and awareness efforts, including for school aged children."

Additionally, Tevis Foreman (2012) surveyed the zoning ordinances and comprehensive plans of North American cities for the Cincinnati Health Department and explored how these cities have implemented food policies within their municipal jurisdictions. Based on this survey, he offered ‘best practices’ that can be employed in Cincinnati in order to help holistically address regional food systems. In terms of healthy food access, these were:

"Increase healthy food access and purveyors in close proximity to transportation lines."

"Stimulate demand for healthy foods, especially in low-income communities, through collaboration with community-based organizations and institutions."

"Identify incentives for food purveyors to locate in underserved communities."

HEALTHY, LOCAL FOOD ACCESS AND CONSUMPTION RECOMMENDATIONS

The ultimate goal of these recommendations, which come from the previously-discussed research, publications, key informant interviews, and national best practices, is to double the percentage fruits and vegetables sourced and consumed in the region by 2020, thereby increasing the accessibility and consumption of local fruits and vegetables by all community members.

1. Increase SNAP/WIC Purchases of Fresh, Local Fruits and Vegetables
   - Increase SNAP/WIC acceptance at area farmers’ markets
     - Increase staffing support and technical assistance to markets in application process
     - Increase communication among farmers’ market managers in order to facilitate learning and sharing of best practices
   - Increase redemption of benefits at farmers’ markets
     - Promote SNAP usage at farmers’ markets and in surrounding communities
     - Increase number of markets offering “double up” or matching benefits as incentives to shoppers by securing financial backing
     - Offer education for community members or direct participants through SNAP-Ed classes
     - Co-locate farmers’ markets or other sales at federal nutrition feeding sites
   - Facilitate use of SNAP benefits for CSA programs and other creative arrangements
     - Provide technical assistance and financial support to interested programs
   - Increase availability of fresh fruits and vegetables at SNAP-authorized retailers
     - Support ongoing work with corner stores
Minimize transportation barriers
  o Locate markets in areas accessible by public transportation, by bicycle, and on foot
  o Explore alternative delivery methods (e.g., home delivery, etc.)

2. Increase Availability of Local Foods in All Parts of the Community
   Increase year-round markets for local products
     o Strengthen/increase winter farmers’ markets
     o Develop a year-round storefront for local products
   Increase healthy, local produce in corner stores and other ‘fringe’ retailers
     o Support ongoing work with corner stores
   Institute and strengthen innovative markets and strategies
     o Expand mobile produce vending program
   Increase local purchases by existing food buyers (schools, grocery stores, corner stores, etc.)
     o Reduce barriers to serving healthy, local foods in schools and childcare centers
     o Better connect community gardens, urban farms, and school gardens to market points
   Increase provision of healthy, local fruits and vegetables through food pantries and other emergency food providers
   Support ongoing efforts to incentivize healthy food retail in areas of low access
     o Explore options for neighborhood grocery store chain model

3. Enhance Educational Opportunities for Local Consumers
   Provide education at food access points
     o Provide workshops and mini-courses on cooking, preserving, etc.
     o Coordinate education efforts and share resources among organizations already doing this work
   Teach basic growing skills for backyard or community gardening
     o Provide materials like seed, starts, and containers
   Teach basic nutrition and cooking skills
     o Provide cooking utensils
     o Increase participation in SNAP-Ed trainings
   Increase education at schools and childcare centers
     o Provide nutrition and gardening education
     o Implement school gardens

4. Conduct an Outreach Campaign to Increase Consumption of Local Food
   Develop and implement local food media campaign
     o Reach consumers through print, social media, and radio
     o Develop regional branding for local food products
     o Include measures to connect consumers to local farms and farmers (farm tour series, etc.)
   Strengthen support resources for participants
     o Work specifically with three target populations, providing resources specific to the needs of each:
       ▪ Low-income consumers
       ▪ Worksites
       ▪ GU member organizations
     o Provide toolkits and other educational materials for participants
     o Improve distribution of Central Ohio River Valley (CORV) Local Foods Guide and Edible Ohio Valley
     o Develop signage and marketing tools for restaurants and other local businesses
RESEARCH CHAPTER 4: ORGANIZATIONAL CAPACITY

Organizational Capacity: The organization, planning, communication, research, networking, and implementation work that is needed to support efforts to strengthen the local food system. Organizational capacity also includes the personnel, meeting and communication infrastructure, and formal networks that provide a structural backbone for community-wide local food efforts.

Many knowledgeable individuals, organizations, agencies, and universities in the Central Ohio River Valley work diligently on food-related issues and have done so for many years. They conduct research, gather data, and implement programs from a variety of perspectives. Over the past several years, these stakeholders have hosted annual food-system gatherings, presented research findings, worked to implement a food policy council, and developed an ongoing communication and networking structure in the Green Umbrella Local Food Action Team. However, stakeholders continue to seek improved communication, as well as coordination of efforts, to minimize duplication and increase efficiency and efficacy.

In order to reach the Green Umbrella Local Food Action Team’s goal of doubling the percentage of fruits and vegetables sourced and consumed in the region by 2020, continued and improved communication among stakeholders, further data collection and development of a comprehensive, long-term strategic plan, and re-establishment of a food policy council will be key. To successfully implement these efforts and others, a full-time staff person whose job it is to champion and direct local-food initiatives is needed.

THIS CHAPTER WILL COVER THE FOLLOWING:

- Annual Gathering
- Data Collection, Assessment, and Strategic Planning
- Communication and Partnerships
- Food Policy Council
- Staffed Position
- Current Policy
- Organizational Capacity Recommendations

A full list of research sources referenced in this section is included in Appendix A.

ANNUAL GATHERING

From 2009-2011, the UC Community Design Center (UC CDC), under the direction of Frank Russell, convened three Cincinnati Regional Food Congresses. These meetings brought together diverse stakeholders active in the Greater Cincinnati Metro Area food community and served as a forum for discussion of Cincinnati’s local food system. The 2009 Food Congress provided a launching pad for the Cincinnati Regional Food Policy Council and included a presentation of initial efforts to create a food system assessment. Presentations from the 2011 Food Congress focused on healthy food access and the role the City of Cincinnati could play in urban agriculture, and panel discussions covered production, distribution, and waste issues (UC Community Design Center, 2011).

Key informants described the importance of this type of annual forum for brainstorming, planning,
partnered, and moving big ideas forward, and expressed a desire for some entity to take on the planning of a similar event going forward. The Green Umbrella Food Action Team would be an ideal group to foster this idea and provide leadership in its creation.

DATA COLLECTION, ASSESSMENT, AND STRATEGIC PLANNING

Efforts to engage in strategic planning for the local food system are not new. During the 2009 Food Congress, members of the UC Community Design Center presented the case for conducting a community food assessment, as well as the initial assessment work they'd done to develop a database of food-system stakeholders. Most commonly, a community food assessment is seen as “a tool that enables community members to examine food systems at the local, regional, and national level, and determine their level of food security” (UC Community Design Center, 2009). Such assessments have become popular throughout the country as a way to gain a better understanding of the food system, to address food insecurity, to engage the community, and to develop partnerships and action plans in order to resolve and work on these issues.

The Community Design Center’s initial assessment efforts led to the development of records of over 700 food-system stakeholders through internet searches, site visits, government and non-profit agencies, and telephone calls. Stakeholders were divided into primary categories that included anti-hunger groups, public health agencies, conventional food system representatives, community-based organizations, infrastructure/transportation companies, and policy and media entities, among others (UC Community Design Center, 2009). Students suggested that future assessment efforts narrow the geographic scope of inquiry, devise specific research questions to be asked, and gather demographic information for the research area. Some of the stakeholders identified in the database were used as key informants for this report and are listed in Appendix C.

In 2012, the leadership of the Green Umbrella Local Food Action Team received a grant from the Health Foundation of Greater Cincinnati (now known as Interact for Health) to conduct a comprehensive assessment of local-food analyses for the Greater Cincinnati region, to explore issues related to extending the local growing season, and to develop a business plan for promoting local food consumption. Two documents were to be written: The “State of Local Food in the Central Ohio River Valley” (this report) and a Business Plan for a 10% Shift local food campaign.

GATHERINGS

The Cincinnati Regional Food Congress was convened in 2009, 2010, and 2011 by the UC Community Design Center and gathered diverse stakeholders active in food-related issues across Greater Cincinnati. The Congresses focused on a regional food policy council and a community food assessment, among other subjects.

The WeTHRIVE! Food Access Summit was held in March of 2012 with the goal of creating opportunities to learn about barriers to healthy food access, and to identify new, innovative ways to address the issue in Hamilton County. Attendees also participated in a working session to determine steps for moving forward. Keynote speakers included Allison Karpyn of the Food Trust and Chris Auffrey of the UC School of Planning.

EDUCATION, CONT’D – PART 2

In 2013, Cincinnati State Technical and Community College began offering a new Sustainable Agriculture Management certificate for aspiring farmers, cottage industry producers, chefs, landscape designers, and horticulturalists interested in starting their own business and gaining hands-on experience in growing food year-round. Coursework will include crop production, economics, and marketing, among other topics, and hands-on practicum time will take place on local farms.

Xavier University now offers a new Land, Farming and Community degree program. Through a combination of classroom-based and experiential on-site learning; attention to the science and art of agriculture; and focus on both the necessity and benefits of small-scale, sustainable, and diversified food production, Xavier’s Land, Farming and Community degree (LAND) offers students the opportunity to become stewards of healthy, productive soils, communities, and regions through growing, processing and distributing food.
In August, when the State of Local Food report was nearly complete, the team decided it was necessary to develop a third document, a “Strategic Plan for the GU Local Food Action Team for 2014-16” to set and prioritize goals, strategies, and measures for the next three years. This strategic plan for the Green Umbrella Local Food Action Team is based in large part on the recommendations from this report, and while this plan provides a roadmap for the Green Umbrella group, a larger group of regional stakeholders needs to be involved in a more comprehensive, long-term planning process focused on creating a long-term regional food system plan. The preliminary Strategic Plan provides a strong foundation against which the longer-term initiatives, goals, and strategies can be vetted and further developed, with input from the Food Policy Council, local public health departments, higher education institutions, city representatives, the regional Chamber of Commerce, local corporate and commercial food business leaders, and other influential stakeholders. To accomplish this will require additional, specific leadership capacity and funding.

Key informants identified a need for more information about the food system in order to understand the larger context, to move forward strategically, and to measure progress (measuring progress will be covered further in the next chapter). As mentioned in Research Chapter 1, a particular lack of information exists about regional fruit and vegetable farm locations, acreage, crops/products, growing practices, etc. Key informants also are interested in gathering more information about current sales, consumption, distribution, and processing of local foods in order to inform future strategic-planning efforts.

**COMMUNICATION AND PARTNERSHIPS**

According to key informants, strategic partnerships that cross typical boundaries, as well as the collaborative infrastructure to facilitate these relationships, would benefit the local food system. Many important partnerships are already flourishing, but there is a need for stronger partnerships with area extension offices and the faith-based community, and partnerships that cross state/county lines, public and private sectors, racial divides, income divides, and traditional agricultural divides. Key informants want to bridge these divides and make sure diverse voices are being included.

Improved communication among local stakeholders would also facilitate cross-regional collaboration, a sharing of best practices, increased understanding, and identification of priorities for future initiatives, and would minimize redundancy of efforts. A collaborative infrastructure for local foods would provide improved communication and could be facilitated through a listserv, a comprehensive stakeholder

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**COMMUNICATION**

**The Central Ohio River Valley Food (CORV) Guide** helps connect growers, markets, and consumers, and also educates consumers about seasonality, the labor involved in growing and producing food, and the importance of supporting local growers/produces. The guide lists farms, farmers’ markets, and other local food sources in the Greater Cincinnati - Southwest Ohio, Northern Kentucky, and Southeast Indiana - area.

**Edible Ohio Valley** is a quarterly magazine that shares stories about the relationships behind the food that is grown and consumed in our region. It connects consumers to the communities of local food and broader sustainability.

**CinciLocavore** is a listserv dedicated to providing information about local foods to interested consumers. Discussion topics include methods of food preservation, community supported agriculture (CSA) programs, co-ops, u-picks, farmers’ markets, herd shares, sustainable agriculture, family farms, farm stands, the politics of food, restaurants that use local ingredients, local vineyards and wineries, foraging etc.
work to build a more complete and sustainable local food production and distribution system; and as schools, city departments, and community and civic organizations to incorporate policies for healthy local food; advising decision makers in government, business, and community organizations to support efforts to build a more complete and sustainable local food production and distribution system; and working to help create policies that will have public and private land designated for community or

**FOOD POLICY COUNCIL**

The 2009 and 2010 Food Congress events provided development and recruitment opportunities for the (former) Cincinnati Regional Food Policy Council. After much work, the council members eventually adopted the following mission: “To promote a healthy, equitable, and sustainable food system for the Cincinnati Region” (Cincinnati Regional Food Policy Council).

The council established five formal goals:

1. Promote more flexible and stable local and regional food distribution systems
2. Encourage healthy food access for all neighborhoods
3. Promote gardens in all forms
4. Encourage community-based production of value-added food products
5. Promote community development to support local foods and coalitions

They planned to achieve those goals through the following objectives:

1. Create a forum that brings together stakeholders from all segments of the food system to generate new relationships and share best practices.
2. Initiate research and develop policies that increase food security in communities as well as social and economic opportunities for food producers, distributors, and consumers throughout the region.
3. Advocate for a food security and regional food system development agenda at the city, county and regional levels.
4. Serve as a resource to the community to assist in solution-oriented local food system development programs and projects – including those related to health & nutrition, land use, food waste recovery, community food assessment, and local purchasing.

The Cincinnati Regional Food Policy Council has become inactive over the past year due to limited leadership capacity; however, the goals and objectives remain very worthwhile, and a strong need for such a policy council still exists. A re-established food policy council could play a pivotal role by supporting a prioritized action plan that interfaces with Agenda 360, Vision 2015, and other regional plans to incorporate local food initiatives. Other roles could include working with local institutions such as schools, city departments, and community and civic organizations to incorporate policies for healthy local food; advising decision makers in government, business, and community organizations to support efforts to build a more complete and sustainable local food production and distribution system; and working to help create policies that will have public and private land designated for community or

**POLICY**

In 2008, Cincinnati City Council approved the first Cincinnati Green Plan, which eventually led to the creation of the city's **Urban Agriculture Program**. This program was created to allow community members to utilize vacant, city-owned parcels of land for agricultural use. In the process of piloting this program, an **Urban Agriculture Advisory Board** was also created to advise Cincinnati City Council on policy recommendations.

Local food stakeholders then used the 2009 Food Congress to create goals and areas of focus for the Cincinnati Regional Food Policy Council. Led by Michelle Dillingham, the goal of this group was to support access to healthy foods in the region, and focus on issues broader than just urban agriculture in Cincinnati. The food policy council was modeled off of other successful food policy councils from around the country, and though the group is not currently meeting, efforts moving forward can build off of the groundwork that was done.
institutional gardens. Leadership capacity is key to building on past work that was already accomplished and infusing new energy and ability to future efforts.

**STAFFED POSITION**

Key informants expressed the need for a staffed, full-time food system advocate – someone whose job it would be to champion, coordinate and direct local-food initiatives. National best practices show that this has occurred in other cities around the country and can be pivotal in terms of moving initiatives forward in a comprehensive manner. Locally, a staff person would also provide administrative support and guidance for a food policy council (a need that key informants also identified), provide assistance for other communication and partnership improvements, gather data, work to coordinate a regional strategic plan, and provide organization for an annual stakeholder gathering. The Green Umbrella Local Food Action Team members could serve as an advisory team for this position.

Greater Cincinnati lags far behind our neighbors in Northeast Ohio, Columbus, and Louisville, where local food programs and policies have been championed for three to 10 years. Without a dedicated, full-time staff person to help implement the recommendations of this report and the “Strategic Plan for the GU Local Food Action Team for 2014-16”, it is questionable how much can actually be accomplished in the near future. Despite various attempts and great intentions, many efforts over the past several years have not been brought to fruition due to limited leadership capacity. Without a dedicated, full-time staff person, that will not change and success will be limited.

**CURRENT POLICY**

Organizational capacity-related policy recommendations have been included in policies/plans across the country. In Tevis Foreman’s (2012) survey of the zoning ordinances and comprehensive plans of North American cities for the Cincinnati Health Department, he offered ‘best practices’ that can be employed in Cincinnati in order to help holistically address regional food systems. In terms of organizational capacity, these were:

- “Identify specific community assets and needs.”
- “Integrate a food systems analysis in all transportation planning and decisions.”
- “Integrate a food systems analysis in all major land-use decisions; specifically zoning, transportation planning, city’s climate action plan, comprehensive planning, and other policy changes.”

**ORGANIZATIONAL CAPACITY RECOMMENDATIONS**

The ultimate goal of these recommendations, which come from the previously-discussed research, publications, key informant interviews, and national best practices, is to double the percentage of fruits and vegetables sourced and consumed in the region by 2020. This can only happen with a strong organizational backbone (including a full-time food system advocate staff person), increased data collection, an improved communication infrastructure, organization of an annual food system gathering, re-establishment of a food policy council, and creation of a comprehensive, long-range strategic plan involving many stakeholders.

1. **Improve Stakeholder Communication, Information-Sharing, and Partnerships**
   
   *Host an annual gathering of food system stakeholders*
- Facilitate cross-regional collaboration, sharing of best-practices and successful models, and priority-setting for future initiatives
- Work with partners to ensure grower participation
- Build on past success of UC Food Congress events and utilize university resources

**Create a searchable online database of food system stakeholders and assets**
- Develop local food website and resource portal (with mobile capacity) to serve as a definitive source for all things local food
- Include mechanism for communication in site design
- Increase awareness of food system efforts and reduce redundancy
- Partner with CORV to build on existing plans and framework
- Model website off sites in other areas (i.e., localfoodcleveland.org)

**2. Reestablish the Regional Food Policy Council**
- Reinstitute the Cincinnati Regional Food Policy Council and build on prior efforts
- Conduct a food policy audit of Cincinnati and other municipalities
- Bring together county and city representatives, producers, processors, distributors, schools, researchers, nonprofits, public health agencies, anti-hunger advocates, etc.
- Support a staff person to coordinate efforts

**3. Develop a Long-Term Strategic Plan**
**Collect and maintain data and establish and identify additional community assets**
- Partner with local universities
- Conduct research on the following topics where gaps exist:
  - Food production, consumption, processing, distribution, county linkages, etc.
- Use data collection process to develop systems for populating local food system indicators
- Map food system assets using easily-updatable methods
- Use findings to populate online database

**Create actionable strategies, timelines, and partner commitments**

**Develop, implement, and maintain financial support strategies to sustain local food initiatives**

**4. Create a Staffed Local Food System Advocate/Specialist Position**
**Create position responsible for leading local food system activities**
- Responsibilities can include fostering communication, partnerships, and urban/rural connectivity; organizing an annual gathering, media campaign, and web portal; and collecting annual food system metrics
**Measuring Progress**

The Green Umbrella Local Food Action Team recognizes that data must be collected to both establish baseline values and to measure progress towards its goal of doubling the percentage of fruits and vegetables sourced and consumed within the region by 2020.

The table below lists suggested local food system metrics that can be used to measure changes in production, distribution, and consumption of, as well as access to, local food. Suggested metrics are a combination of key informant recommendations, Green Umbrella Data Team proposed metrics, and metrics found in a search of best practices from communities around the country. While some of these metrics are currently able to be measured, others are not. Baseline measures not currently collected will be established in 2014. Data will then continue to be collected on an annual basis.

Challenges inherent to collecting this data include:

- Time necessary for collection
- Need for data cleaning
- Concerns about national data source accuracy
- Limitations created by national data source publication timeframe (i.e., every 5 years vs. annually)
- Limited access to proprietary data

In order to successfully track metrics, and therefore measure progress, these challenges will need to be addressed.
### Table 5: Potential Food System Metrics

<table>
<thead>
<tr>
<th>GU LOCAL FOOD METRIC</th>
<th>DATA SOURCES</th>
<th>AVAILABLE DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Production</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of farms</td>
<td>CORV</td>
<td>N/A</td>
</tr>
<tr>
<td>Number of vegetable farms</td>
<td>USDA NASS (data collected every 5 years)</td>
<td>270 N/A N/A Data to be released in 2014 N/A</td>
</tr>
<tr>
<td>Acreage of farmland in vegetable production</td>
<td>USDA NASS (data collected every 5 years)</td>
<td>1,184 N/A N/A Data to be released in 2014 N/A</td>
</tr>
<tr>
<td>Number of community gardens</td>
<td>Civic Garden Center, Cincinnati Health Department</td>
<td>N/A 68 78 83 78</td>
</tr>
<tr>
<td>Percent of agricultural land producing fruits and vegetables</td>
<td>USDA NASS (data collected every 5 years)</td>
<td>0.0025% N/A N/A Data to be released in 2014 N/A</td>
</tr>
<tr>
<td><strong>Distribution and Infrastructure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of farms with direct sales</td>
<td>USDA NASS/Food Environment Atlas (Data collected every 5 years)</td>
<td>475 N/A N/A Data to be released in 2014 N/A</td>
</tr>
<tr>
<td>Number of farmers' markets</td>
<td>CORV</td>
<td>N/A 40 42 39 38</td>
</tr>
<tr>
<td>Number of farms offering Community Supported Agriculture Programs (CSA)</td>
<td>CORV</td>
<td>N/A 16 23 29 28</td>
</tr>
<tr>
<td><strong>Healthy, Local Food Consumption and Access</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lbs of regional food purchased by restaurants and institutions</td>
<td>Ellenbee Leggett, GCI, Compass, Pic's Produce, Sysco</td>
<td></td>
</tr>
<tr>
<td>Dollars of regional food purchased by restaurants and institutions</td>
<td>Ellenbee Leggett, GCI, Compass, Pic's Produce, Sysco</td>
<td></td>
</tr>
<tr>
<td>Lbs of regional food purchased by retail establishments</td>
<td>Kroger, Remke/Biggs, Wal Mart, Whole Foods</td>
<td></td>
</tr>
<tr>
<td><strong>Baseline to be Established in 2014</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of households with no car and low access to a grocery store</td>
<td>USDA ERS/Food Environment Atlas</td>
<td>N/A 34,586 N/A N/A N/A</td>
</tr>
<tr>
<td>Number community gardens</td>
<td>Civic Garden Center, Cincinnati Health Department</td>
<td>N/A 68 78 83 78</td>
</tr>
<tr>
<td>Number SNAP/WIC authorized stores</td>
<td>USDA ERS/Food Environment Atlas</td>
<td>N/A N/A 1,563 N/A N/A</td>
</tr>
<tr>
<td>Number farmers’ markets accepting SNAP/EBT</td>
<td>CORV</td>
<td>N/A N/A 2 5 11</td>
</tr>
<tr>
<td>Number farmers’ markets accepting WIC</td>
<td>CORV</td>
<td>N/A N/A 1 4 7</td>
</tr>
<tr>
<td>Number people taking 10% Shift challenge</td>
<td>Green Umbrella</td>
<td>N/A N/A N/A 96 219</td>
</tr>
<tr>
<td>Percent of regional population consuming at least 2 servings of fruit AND 3 servings of vegetables per day</td>
<td>Interact for Health (data collected every 3-5 years)</td>
<td>N/A 22% N/A N/A N/A</td>
</tr>
<tr>
<td><strong>Baseline to be Established in 2014</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dollars spent at farmers’ markets</td>
<td>Farmers’ market survey</td>
<td></td>
</tr>
<tr>
<td>Number FM offering SNAP incentive programs</td>
<td>Farmers’ market survey</td>
<td></td>
</tr>
<tr>
<td>% food dollars spent on fruits and vegetables</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>SNAP redemption at farmers’ markets</td>
<td>Farmers’ market survey</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX A: RESEARCH PUBLICATION LIST

Executive Summary Sources


Introduction Sources

Feeding America. State Statistical Brief for Ohio, Kentucky, and Indiana.
http://feedingamerica.org/foodbank-results.aspx

Production Sources

http://www.farmland.org/resources/fote/states/top20.asp


Boone County Conservation District and Boone County Farm Initiative. 2010. “Rural Treasure: The State of Boone County Agriculture.”


http://home.fuse.net/campbellcd/farm/Teen%20Survey%20Summary%20final.pdf


**Distribution and Infrastructure Sources**


Clark, Jill, Shoshanah Inwood, and Jeff S. Sharp. 2011. “Scaling-Up Connections Between Regional Ohio Specialty Crop Producers and Local Markets: Distribution as the Missing Link.” Center for Farmland Policy Innovation and Social Responsibility Initiative, College of Food, Agricultural, and Environmental Sciences, The Ohio State University.


**Healthy Food Consumption and Access Sources**


Feeding America. State Statistical Briefs for Ohio, Kentucky, and Indiana.
http://feedingamerica.org/foodbank-results.aspx


http://www.watchusthrive.org/foodaccess.aspx

Health Foundation of Greater Cincinnati. 2010. “Fruit, Vegetable, and Fast Food Consumption.” Results from the 2010 Greater Cincinnati Community Health Status Survey.”
https://www.interactforhealth.org/docs/Fruit%20Vegetable%20and%20Fast%20Food%20Consumption.pdf

Kramer, Mary Ellen. “Success Stories: Increasing Access to Healthy Foods in Schools with Competitive Food Guidelines.” CDC’s Division of Community Health and Hamilton County Public Health Department.
http://www.hamiltoncountyhealth.org/files/files/WeTHRIVE/Healthy_Foods_Schools.pdf


http://www.uc.edu/cdc/publications/research_papers/david_mann_mcp.pdf


http://www.fitky.org/


**Organizational Capacity Sources**

Cincinnati Regional Food Policy Council. “Bylaws of the Cincinnati Regional Food Policy Council.”


APPENDIX B: KEY INFORMANT LIST

Butler County Cooperative Extension (Ohio)
Butler/Hamilton County Natural Resources Conservation Service (USDA)
Carriage House Farm
Central Ohio River Valley Local Foods Guide (CORV)
Cincinnati Health Department
Cincinnati Office of Environment & Sustainability
Cincinnati Public Schools
Cincinnati Regional Food Policy Council
Cincinnati State and Technical College
Cincinnati Zoo and Botanical Garden
Civic Garden Center
Dearborn County Cooperative Extension (Indiana)
Edible Ohio Valley
Ellenbee Leggett
Findlay Market
Freestore Foodbank
Gabriel’s Place
Hamilton County Public Health Department
Human Nature, Inc.
Kenton County Cooperative Extension (Kentucky)
Lettuce Eat Well Farmers’ Market
Local Loans for Local Foods: A Slow Money Group
McGlasson’s Farm
Northern Kentucky Conservation Districts
Northern Kentucky Health Department
Nutrition Council
Ohio Valley Foodshed Project
Our Harvest Cooperative
Rough Brothers
Running Creek Farm
University of Cincinnati Community Design Center
University of Cincinnati School of Planning
Wooden Shoe Gardens
Xavier University
Other local farmers for season extension report (confidential)
APPENDIX C: FOOD SYSTEM STAKEHOLDER LIST

Non-Profits/Education/General Support
- Gabriel's Place
- Green Umbrella
- Civic Garden Center
- Grailville
- This-Land.Org
- OEFFA/SWOEFFA
- Nutrition Council
- Imago
- Enright Ridge Urban Eco-Village
- Closing The Health Gap
- Keep Cincinnati Beautiful
- Our Harvest Cooperative
- Gorman Heritage Farm
- Turner Farm
- Permaganic
- Green Umbrella
- Greenacres
- Granny's Garden
- Cincinnati Zoo and Botanical Garden
- Farm Bureau
- Woman's City Club And Lower Price Hill Community Garden
- Food And Water Watch
- Cincinnati Union Coop Initiative
- Sustain Brand
- Cincinnati Great Neighborhoods
- Interact for Health
- Sidestreams/Lighthouse School Garden
- Local Loans for Local Foods: A Slow Money Group
- Hamilton Urban Garden Systems (HUGS)

Distribution
- Our Harvest Cooperative
- Green Bean Delivery/Tiny Footprint
- Ellenbee Leggett
- Pic's Produce
- Castellini Group
- Delhi Foods
- Roth Produce Company
- Joe Lasita & Sons

Farmland Preservation
- Northern Kentucky Conservation Districts
- Land Conservancy of Hamilton County
- American Farmland Trust
- Land Trust Alliance
- Tecumseh Land Trust
- Three Valley Conservation Trust
Clean Ohio Fund
Kentucky Department of Agriculture

Communication
- CORV
- Edible Ohio Valley
- CincLocavore

Government Agencies
- City of Cincinnati Office of Environment & Sustainability
- Cincinnati Public Health Department
- Hamilton County Public Health Department
- Northern Kentucky Public Health Department
- Job and Family Services
- Head Start
- NRCS (USDA)
- City and County Park Districts
- Soil And Water Conservation Districts

Planning
- Agenda 360
- Vision 2015
- OKI

Higher Education
- University Of Cincinnati
- Xavier University
- Cincinnati State Community and Technical College
- Ohio State University
- University of Kentucky
- Purdue University
- Northern Kentucky University
- Kentucky State University
- Wilmington College

Cooperative Extension Offices

Institutional Buyers
- Hospitals
- Universities
- Prisons
- Senior centers
- Public school systems and private schools
- Greater Cincinnati Health Council

Production
- Full list of producers in annual CORV Guide

Urban Agriculture
- Findlay Market Farms!
- Cincinnati Health Department Urban Farming Program
- Cincinnati Urban Agriculture Program
- Permaganic

Retail
- Findlay Market
- Pipkin's
- Country Fresh
- Picnic and Pantry
- Friendly Market
- Wise Acres Market
- Park + Vine
- Madison's at Findlay Market
- Kroger
- Whole Foods
- Remke Markets

Restaurants
- Full list in annual CORV guide
- Greater Cincinnati Independents

Farmers Markets
- Full list in annual CORV Guide

Financing
- Local Loans For Local Foods: A Slow Money Group
- Natural Resources Conservation Service (NRCS) (USDA)
- Ohio Ecological Food and Farms Association (OEFFA)
- Kentucky Proud
- Northern Kentucky Conservation Districts
- Kentucky State University
- Local foundations

Waste
- Hamilton County Public Health Waste Management Division
- Marvin's Organic Gardens
- Compost Cincy
- Hamilton County Environmental Services
- Bio Green Choice

Emergency Food Assistance
- Freestore Food Bank
- Churches Active in Northside (CAIN)
- Feeding America network in Ohio, Kentucky, and Indiana

Policy
- Cincinnati Food Access Task Force
- Cincinnati Urban Agriculture Advisory Council
- Cincinnati Regional Food Policy Council (former)
APPENDIX D: KEY INFORMANT QUESTIONNAIRE

Green Umbrella “Local Food Action Plan” Project

Key Informant Questionnaire

The Green Umbrella Local Food Action Team was recently awarded a planning grant from the Health Foundation of Greater Cincinnati. One outcome of this work will be a regional food assessment that synthesizes the current food research in this region and profiles local food-system stakeholders.

Fundamental to this work will be interviews with key informants like yourself -- practitioners and stakeholders from all facets of the local food system. This includes individuals working food production, distribution, consumption, education, access, etc. As such, we are hoping you would be willing to participate in this portion of the research by answering the following questions about your work.

Our goal is to end up with a final report and symposium that not only highlight the challenges and needs faced by our community, but also the strategic ways that we can move forward together. The thoroughness and usefulness of this project is therefore entirely dependent on your support and participation. Thank you for your help!

***************

Questions:

1) Organization name:

2) Organization mission:

3) Who do you reach (geography and demographics)?

4) Key projects and work:
   - Past:
   - Present:
   - Future:
5) What are your biggest organizational accomplishments?

6) What other projects/programs have you been involved with in the past 5 years?

7) Do you collect data or conduce primary research on food or farming (production, consumption, distribution, access, waste)? Do you know of any organizations that do?

8) What information/data about food and farming would help you do your job better?

9) Are there any studies or reports by your organization or other organizations/agencies that Green Umbrella should look at in regards to this project?

10) What are the biggest opportunities/advantages this area has to offer for a strong local food system?

11) The biggest challenges?

12) What are the biggest changes to the local food system that you have witnessed in the past 5-10 years?

13) What organizations do you regularly collaborate or partner with? What specific collaborations are you currently working on, or do you have planned?

14) What needs to be done, what can be done, to make the farming/food system more successful in this area? Recommendations?
15) Are there other organizations or individuals you recommend we speak to about these issues?

16) Is it alright if we use your responses to create an online stakeholder profile on the Green Umbrella website?

10% Shift Questions:

17) What advice and ideas do you have for how to implement 10% Shift Campaign, increase local food consumption, etc.?

18) What is currently being done in your place of work to promote consumption of local fruits and vegetables?

19) How receptive is your workplace, or do you think your workplace would be to the 10% Shift Campaign?
INTRODUCTION

This study is part of a larger local food system study funded through a planning grant from the Health Foundation of Greater Cincinnati (now Interact for Health). The goal of this study was to explore the current state of season extension in the Central Ohio River Valley – what growers are currently doing, what resources exist, and what challenges producers face when wanting to extend their growing season. By extending the growing season of local produce, growers can increase production, develop year-round income, gain new customers and retain existing ones, and better meet the needs of local consumers.

BACKGROUND ON SEASON EXTENSION

Methods for extending the growing season of produce have been utilized for centuries to grow crops earlier in the spring, to grow cool-season crops during the summer, and to maintain production well into the fall and winter. “Time-honored methods include cold frames heated with manure, masonry walls or stone mulch used as heat sinks, and cloches (glass bell jars) used to protect individual plants. More recently, plasticulture (use of plastics in agriculture) has greatly extended the possibilities for year-round production. Plastic film mulches, drip irrigation, row covers, low tunnels, and high tunnels or hoop houses, help to protect crops from the weather” (ATTRA, Season Extension Techniques for Market Gardeners).

The benefits of season extension are many: “Growers able to provide the earliest locally grown fruits and vegetables frequently capture premium prices. The same can be said for those who harvest crops well into fall and winter. A longer production season may place Kentucky growers in a better position to compete with producers to the south. Some season extension techniques can also result in higher yields and improved product quality. Extending the season has the potential of spreading out cash-flow, increasing overall farm profits, and gaining new customers” (UK Cooperative Extension, Season Extension Tools and Techniques).

A number of online resources are available for producers interested in employing season extension techniques (listed at the end of this report). And locally, Cooperative Extension offices in Kentucky, Ohio, and Indiana occasionally offer educational programming for interested growers. Importantly, funding is available for hoop houses through the Natural Resources Conservation Service EQIP program, and numerous local growers have taken advantage of these resources.

EXISTING LOCAL RESEARCH

Prior to this study, Our Harvest Cooperative, with the assistance of the Ohio State University Cooperative Development Center, conducted a feasibility study for a local food hub. Part of their questioning of local
growers included the topic of season extension. The following information was excerpted from that report:

“Of the 45 growers surveyed, twenty-one (47%) are currently using greenhouse, tunnel, and/or hoop house production representing 87,008 square feet of facilities (30.2 units of 30 ft. x 96 ft. = ~ 1.43 units per grower).

Conclusions: On average, with intensive growing practices, $435,040 of annual gross sales could be realized from all products grown with 87,008 square feet of greenhouse/tunnel/hoop house structures. Note: $5/square foot was used as an industry standard estimate for calculations.

Of the 45 growers surveyed, twelve growers (27%) are interested in adding 37,920 square feet of greenhouse, tunnel, and/or hoop house facilities (13.1 units of 30 ft. x 96 ft. or = ~ 1.1 units per grower).

Conclusions: The increase of production should be increasing by approximately 43.5% in the next two years. On average, with intensive growing practices, $189,600 of the increased annual gross sales could be realized from all products grown with 37,920 square feet of greenhouse/tunnel/hoop house structures.”

METHODOLOGY

This study of season extension in the Central Ohio River Valley consisted of three parts: 1) an online survey of local growers, 2) in-person interviews with local growers, and 3) in-person interviews with key stakeholders, including extension agents and other knowledgeable parties.

The online survey was conducted through Survey Monkey, and was completed by 14 area growers. Responses were solicited through emails to growers listed in the Central Ohio River Valley (CORV) Local Foods Guide, through farmers’ market managers, and through posts on the CinciLocavore listserv.

Interviews were conducted over the phone and in person with five growers, three extension agents, one NRCS staff member, and one area greenhouse expert and followed the same line of questioning as the survey. A copy of this questionnaire is included in Appendix F. The 19 total growers who gave feedback for this report represent 24% of the 79 growers listed in the 2013 CORV guide.

RESULTS

Online Producer Survey Feedback

Respondent Overview

Fourteen area growers completed the online survey on season extension. Producers who responded to the online survey exhibited the following characteristics:

- They operate in Hamilton, Butler, Warren, Clermont, Brown, and Preble counties in Ohio, and Campbell County in Kentucky.

- Their operations range in size from 1/8 acre to 50 acres.

- Their operations are run by 1-12 employees in the high season (including the owner/operator). Two employees was the most common response.
• Respondents grow a wide variety of vegetables and herbs. Two also grow berries. One farm’s primary focus is goats and goat milk.

• The most-common growing season listed was March-October, with a few describing a more limited season, and a few describing a longer one (March-December). One farmer hopes to extend her season into January/February with the help of her new greenhouse.

**What is Currently Being Done on Your Farm in Terms of Season Extension?**

In response to an open-ended question about what is already happening in terms of season extension, two said they don’t currently do any season extension (usually busy in winter). The other respondents had the following responses:

• “Cold frames and row cover; and indoor seed-starting.”
• “Just put in a 12x20ft hoop house this year, so will see how much the season can be extended. Also considering row covers for next season.”
• “Yes green house and hoop house.”
• “Yes, use row cover and homemade hoop houses.”
• “Greenhouse.”
• “High tunnels, propagation greenhouse, hotbed-coldframes.”
• “Use of a hoop house.”
• “Yes - we use row cover and hoop houses.”
Respondents were then asked to check a box next to a list of different season extension measures indicating whether they have considered the technique, would consider it, would not consider it, or already do it. The most common season extension methods currently used in the area are "using
transplants” (90% of respondents use) and “cold frames” (81.82%), followed by “floating row covers” (72.73%) and “choosing early maturing varieties” (72.73%). The only measures that respondents indicated they would not consider would be windbreaks, irrigation for frost protection, and cold frames.

**How Much Could, or Does, Season Extension Increase Your Production and Sales?**

Though respondents had a difficult time quantifying the increased sales, those who were able to estimated a 10-25% increase.

- “For me, increasing sales would be directly related to how many extra markets I could attend and consumer awareness during traditionally ‘off season’ months.”
- “We should be able to increase production by 25%.”
- “Do not know.”
- “N/A”
- “I have been doing season extension for over 15 years and I cannot say how much it has increased sales but I know we can easily sell 10 to 11 months a year.”
- “We have been doing season extension for 10 years.”
- “In the second year of management, sales may increase 10-20%.”
- “Extending our growing season last year increased production and sales by 15% in one year.”
- “Add at least 1/4 to 1/2 additional production, then need winter markets.”
- “It totally depends on the weather. Row covers extend the season into December for us, but it seems like the light is so low in Jan and Feb that we don't get much. Everything grows very slowly. If you planned far enough in advance, you could be harvesting during Jan and Feb in a high tunnel.”

**What Are the Challenges to Extending the Growing Season?**

The most common challenge reported by growers was variable weather. Respondents also cited labor as a challenge, particularly in terms of having the time to build structures. Funding was cited as a challenge, as was having ample markets for winter produce. Plastic disposal was mentioned by one producer.

- “Making consumers aware of availability and zoning regulations for residential/urban farms.”
- “Only a 2 man operation, so lack of funding and/or time to purchase, build, etc. For us, finding a way to heat the hoop house in the winter and cool it in the summer.”
- “Weather and location for sales.”
- “There will always be unexpected weather patterns. Diversity is important.”
- “Wind issues, can make crop rotation more complicated, plastic disposal is a huge issue for our farm.”
- “Early winter, wet fall.”
- “Cost of materials, equipment, and structures. Gaining experience in the management required to make season extension cost effective.”
- “Biggest challenge is the unpredictable really cold nights vs. warm sunny dates in late fall and early winter. The inconsistent weather situation for late fall and early winter makes planning difficult.”
- “Erratic weather tempos.”
- “Varying weather, and it is challenging to use the row cover when it is wet and cold.”
After allowing respondents to openly provide thoughts about the challenges they face, they were asked to select from a pre-determined list the challenges that they personally face. Labor received the highest number of votes (70%) followed by lack of funding (60%).

**Ideas for Overcoming Challenges**

Producers did not offer many suggestions for overcoming the challenges outlined in the previous question. Suggestions that were provided included developing recycling for plasticulture, educational resources, and available financial programs.

- “Salvage and save slowly.”
- “Each year we see improvements in the efficiency of how we produce and we are able to choose only one area that we can improve.”
- “No.”
- “We need recycling for greenhouse poly, plastic mulches and drip tapes.”
- “No.”
- “No.”
• “Eliot Coleman’s "Winter Harvest Handbook" has great tips on winter gardening. EQIP offered (and may still) cost share programs for season extension, and everybody needs a vacation so take one!”

Why Extend the Growing Season?

Respondents offered a variety of reasons why they are interested in season extension, including retaining customers, producing more food for themselves and other markets, providing year-round employment, increasing income, and producing higher-quality crops.

• “Increasing availability of fresh, local produce to consumers; increasing productivity of limited space.”
• “Would like to have produce for ourselves and for potential winter markets.”
• “Keeping the same customers.”
• “More good food year-round. I never eat as well in winter as I do in growing season.”
• “Much longer growing season, higher quality crops, protection from weather AND chemical farmers herbicides.”
• “Income.”
• “All the reasons are listed below.”
• “To keep fresh locally grown foods available to GHF supporters and volunteers.”
• “To utilize farm year round; to potentially provide employment year round.”
• “Providing local food year round, farmers needing more money - that extra winter income may keep you afloat for the year and lets you get ahead for the regular season.”
When selecting from a pre-determined list, customer retention was the most-often selected reason for extending the growing season (selected by 90%). Year round income, higher yields, and meeting the demand for local food all received votes from 80% of respondents. Year-round employment for staff was the least popular response, only chosen by 20% of respondents.

What Would Help?

Growers think education, expertise and labor sharing, funding, and access to more/different markets would be helpful.

- “Education on simple ways to extend their season; hoop house co-op.”
- “Funding, expertise or labor assistance.”
- “Access to different markets.”
- “Income.”
- “Education.”
- “I do not know. We do all we can and still cannot grow greens in the winter months.”
- “Larger customer markets, a producer/distributor cooperative.”
- “Offering a single source i.e. phone app maybe like Squid which is used in the restaurant industry where growers can talk and share their experiences immediately.”
Where Do You, or Would You, Try to Sell Early and Late-Season Crops?

Respondents would most-often try to sell early and late-season crops through a community supported agriculture program (CSA) (70%). Sixty percent of respondents would try farmers’ markets and restaurants. Wholesale buyers would be approached by the fewest growers (10%).

Other Difficulties

In addition to issues around season extension, the farmers completing this study listed the following difficulties they face:

- “Limited space; fertility inputs.”
- “Time.”
- “Age.”
- “City ordinances about building codes and livestock.”
- “Neighbors spraying poisons, getting customers, labor, income.”
- “Paperwork for the organic certification program and inexperience inspectors.”
- “Many.”
- “Finding knowledgeable, motivated and hard working employees who have a decent work ethic despite the weather.”
- “Trying to lessen my farming loss--I would love to break even one year!”
• “Mostly keeping the business running in different areas - finances, lack of labor, lack of funds to purchase time-saving machinery (such as a manure spreader), personal business organization.”

**Producer Interview Feedback**

*Subject Overview*

The producers interviewed are located in Ohio, Kentucky, and Indiana, and they grow a variety of vegetables. Some also grow commodity crops and raise cattle. They grow on property ranging from less than an acre to 300 (though not all of that space is allotted to vegetable production). The farmers interviewed will be referred to as Farmers A-E in order to keep their identities private.

*Season Extension Measures*

**Farmer A** currently uses high tunnels and low tunnels, and also selects crops with season extension in mind. He’s very specific about what is grown for season extension and grows some crops outside so they don’t take up valuable real estate. When choosing from a pre-determined list, Farmer A already chooses early-maturing varieties, uses transplants, does multiplecroppings, mulches, and uses floating row covers, low tunnels, and high tunnels. He’s had mixed success with the floating row covers.

Farmer A can’t strategically select planting sites because he doesn’t have that flexibility. He doesn’t use windbreaks because those also have the tendency to be sunbreaks. He is currently experimenting with inter-planting cabbage among rows of garlic, with the idea that the garlic will serve as a bad weather break. Farmer A does not irrigate for frost protection, nor does he use cold frames. This year, Farmer A is experimenting with paper mulch, which is more expensive, but also more sustainable, and if it works, would be worth the extra cost.

Farmer A put up his high tunnel this year with help from the NRCS EQIP program, which covered more than half the cost of the tunnel, meaning he’ll realize the cost on the investment a year sooner. He would buy five more if the same cost-sharing was available.

**Farmer B** just put hoop house up this winter, and his experience growing beyond October is thus far very limited. He’s done small hoops before, but those are fairly temporary. He also uses transplants, multiplecroppings, mulches, and floating row cover. Farmer B purchased his hoop house with help from the EQIP program through the Natural Resource Conservation Service (NRCS).

**Farmer C** uses a heated greenhouse and is thus able to grow year-round. He would consider choosing early-maturing varieties, strategically choosing a planting site, and using transplants.

For years, **Farmer D** had several greenhouses and would do early tomatoes in spring. Over time, though, this became “more hassle than it was worth.” They also used high tunnels for the past couple of years, but not this year, because it just wasn’t worth it, though he does see how it could work for smaller growers. On his farm, they have a range of products that don’t come on until late fall and that they’re able to sell throughout the winter. They don’t focus on winter opportunities, but they do have some side items they’re able to keep going earlier and later than usual.

**Farmer E** has cold frames that she puts plastic across and plants into. Because of this, she’s able to plant lettuce “when it’s still cold and wet outside.”

*How Much More Are You Able to Produce/Sell?*
For Farmer A, springtime extension has allowed him to grow when wouldn't have been able to, so at that time of year it's 100% more. Low tunnel extension usually works until December but then a fierce winter storm ends the season. All in all, he would estimate a 30% increase. This spring he used his high tunnel for transplants and ginger.

Farmer B hopes his production will increase, though he says there is a learning curve, since this is his first year with a high tunnel. He planted some stuff early this year, and it has done well. He’s still figuring out the timing of different plantings. Now he will be able to go to market in April, where he used to start in May, and he will also be able to attend markets into November. He doesn't have a desire to attend markets 12 months out of the year, but he would be happy with 9.5.

This year, Farmer E had tomatoes and lettuce growing early. She also typically can keep kale that is planted in September in the ground until Christmas, and she could do the same with spinach and green onions. Because of this she can go to market early with things and come later; this builds a loyal customer base and also allows her to sell more.

**Challenges**

For Farmer A, "getting more plastic" is the limitation. If every square acre could be under plastic he would do it, because “of changes in weather, with more severe and random weather, you don’t get breaks in rainfall, and then you’ll have a drought period. By introducing plastic or a protected structure, that allows you to smooth out the ups and downs of nature." He sees cost as the main challenge, and labor too. On one hand he needs more labor to cover costs, but he also needs more income to get more labor. This will be a year of learning for the operation, as it is their first year with a high tunnel.

Farmer B knows that there are lots of resources that exist – online and through extension offices – but there’s still a learning curve. “Timing is a big piece of it: what makes sense to plant when.” Farmer B is planting a variety of crops in his hoop house this year to see what grows well. From a financial point of view, he also wants to make the best use of limited real estate.

Farmer B can anticipate challenges around water, because he will have to water more, and heat and pest control could also present challenges. Drainage could present problems, because his land is sloped, and the water runs downhill, so he may end up having to diverting it away from the hoop house.

Farmer B would not have put up his hoop house without assistance from the NRCS; he would have done something, but it would not have been at this scale. The EQIP program requires farmers to build hoop house structures on existing growing space, so for that reason he didn't actually add any growing space, and thus he doesn't anticipate his labor being affected substantially. Heat management is one change, as someone will need to be monitoring the conditions inside the house on a regular basis.

Farmer B doesn't see markets as an issue; he primarily sells at farmers markets and to a few restaurants. Thus far he hasn’t had any trouble selling his produce, and the markets he attends also offer year-round markets.

Plastic disposal is an issue, though he feels that if he can get four years out of it, he can justify it. He uses plastic mulch, because otherwise there is no physical way to keep up with the weeding.

Farmer C could benefit from more season extension; however, he doesn’t think that season extension will help the local food movement, because there aren’t currently adequate outlets for local food. Most farmers' markets in the area are currently too small to support economically-viable farms. Plus, spending time at farmers’ markets takes farmers away from production time.
Farmer D, the primary challenges to extending the growing season are the material costs: the heating costs, the plastic, etc. The decision comes down to whether a farmer is actually going to make a profit off of the effort. Distribution is also an issue: “you get chefs who want to buy stuff, but then they don’t stick with it. Farmers don’t have time to make diverse small orders for restaurants. The demand is there, but how do you connect?”

Farmer E has four cold frames, and that’s as much season extension as she is interested in.

Ways to Overcome

Farmer A suggests NRCS cost-sharing as a way to overcome the need for funding. He would put up five more hoop houses if he was able to receive the same cost sharing arrangement. Classes on how to grow year-round could also be helpful. “Education is ultimately the best thing in the world.” Money should be given to universities for research, and communication between universities should increase. Free labor can present itself, but finding free labor that is worthwhile can be difficult.

Farmer B also suggests EQIP cost-sharing. He suggests knowledge-base sharing, since there are “people who have been doing this a long time.” Webinars and seminars also exist, so knowledge-sharing could take the form of promoting online resources and also hosting local events. Small group or one-on-one sharing could be useful. Farmer B would like access to knowledge about “other things that can be done.” For example, a workshop on hoop bending would be helpful. People could get together and build medium tunnels easily as a group. Knowledge-sharing could happen along with assistance for fellow farmers.

Another way to overcome the challenges would be to strengthen year-round markets. General education of the public would also be useful, so that people better understand the value of “keeping it local and sustainable.” Education could occur through media or other means.

To Farmer C, connecting farmers to markets is the most important piece of the puzzle. “If one arm of the public sector was in charge of making farmer-consumer connections, if they could get 100 consumers per farmer, having those 100 people meet with their farmer and have a conversation, that would be the best way to do it.” The public sector could also get retail and food service involved.

Another thing that would help him would be to have a real wholesale market, like the terminal markets that used to exist in Cincinnati. At that type of market, farmers could show up and sell out in four hours. Farmers need a critical mass of people so they all sell out at market. “If a distribution system isn’t farmer controlled, then it should at least be farmer empowering and influenced. We need to figure out how to make farms economically viable. It’s difficult to run a farm when you’re constantly searching for customers, and you never know when you’re going to lose them.”

What would be very helpful for Farmer D would be a clear plan of action, a report saying, “here’s how you do high tunnels.” “Most folks are resourceful and can scrape together means and labor, but they can’t afford to do something wrong and have it not turn out.”

Getting together in person would help, he said, as would a case study where other farmers can actually see a local farm and see what’s happened. “A case that would prove that it’s worthwhile.” An on-farm demonstration would be better than a meeting. There’s a large gap in how farmers of different generations do things, and newer generations might be more flexible. Convincing farmers to switch to specialty crops could be difficult, as they require a lot of work, specialty equipment, and different schedules. Commodities are simpler. If the model isn’t profitable, though, it would be difficult to convince farmer to switch to growing vegetables. Commodity growers could be convinced if given a viable plan. Every farmer he knows has a second person who works off form to help support the family.
Reasons for Extending the Growing Season

For Farmer B, one reason to extend the growing season is because it’s a way to build the business. With limited ground space he can only do so much, and he could expand ground space, but then the economics of it change. There’s only so much a single farmer can do on his or her own or without adding machinery. By hand, you can’t necessarily add more ground space, so one way to grow is by changing the growing season a little bit. Other benefits include year-round income, access to different markets and new customers, customer retention, higher yields, better quality, and increasing local food supply.

Key Stakeholder Input

Information on the Butler/Hamilton County NRCS EQIP Program:

The very first year the program ran, the Butler/Hamilton County NRCS office had a big turnout, but they didn’t receive funding for any of the applicants. The second year, applicant numbers dwindled, but they still had seven applicants receive funding between the two counties. Applicants have been unsuccessful so far this year.

A number of greenhouse operations in Butler and Hamilton County have been interested, but in order to be accepted or eligible, applicants have to have cropland that has been growing some type of fruit or vegetable. The program doesn’t apply to trees and fruit. The hoop house applied for also has to be put on the same ground as is already being grown on. New farmers who apply have to show that the ground has been previously cultivated. The NRCS has to know that the land is capable of growing crops, and they like to have seen a crop on the land in question for at least one year.

The amount of the NRCS cost-share can be higher if the applicant is a beginning farmer or a limited resource farmer. In Butler/Hamilton counties, if between on and off farm sources you make less than $22,000/year then you are considered limited resource. A beginning farmer is someone who has not farmed 10 years consecutively.

In the beginning, especially if the applicant isn’t already in the government system, there’s quite a bit of paperwork that the NRCS agent can help with. He gives them the standard specification for what’s required and what materials are needed. The program provides recipients a financial incentive that covers up to 2178 square feet. In 2013, the reimbursement rate was $2.70/square foot; in 2012 it was $2.57/square foot. The money received is not a grant; it’s considered income and thus is taxable (recipients will receive a 1099). So for an $8,000 high tunnel, this program would cover 70% of the cost.

Limited funding has been biggest barrier this NRCS agent has seen. Otherwise, he says, “it’s just a matter of physically putting up the structure, putting the plastic on, etc.”

Butler County Extension (Ohio)

This extension agent doesn’t do any season education herself, but she directs growers to the Small Farm College at Wilmington College, and also to Brad Bergefurd’s education sessions for fruit and vegetable growers.

She does receive a number of season extension questions. Weather is the main problem with season extension, as is cost. Starting a farm is difficult, and it’s costly. She knows of people who are interested, but once they find out what’s involved they re-think it. Most producers she works with are long-time producers. She’s also seen the difficulty faced by farmers trying to make a living going to multiple
farmers’ markets. They couldn’t find the people and labor to staff the different markets, which has limited their ability to attend.

**Dearborn County Extension (Indiana)**

This extension agent knows of growers who have been growing in high tunnels. In particular, one who has between seven and nine high tunnels that they’ve been using largely for tomato production. He also knows of another grower who put a number of blackberries and raspberries in a high tunnel last year. Some others have tunnels with lettuce and tomatoes and sell at Findlay Market.

Their season extension education occurs more on a state level. In January they have program in Indianapolis known as the Horticulture Congress, which includes tracks on season extension. Last year, at the very end of February, they also had their first small farms conference in central Indiana, which also included season extension education.

For a lot of the growers, the hurdle is not the growing, it’s the marketing of the produce that they’re able to grow. “Marketing alone takes up a large chunk of time.” Something like the food hub project that is starting in Cincinnati could be helpful in that regard. For many of the growers in his county, farming is a family activity and one person takes care of the marketing aspect of the business.

**Kenton County Extension (Kentucky)**

“There’s definitely demand around high tunnels,” according to this extension agent. She knows of two growers who received funding for tunnels last year. They have high tunnels at the extension office, as well. She knows of farmers that usually grow greens in them to get CSA baskets early, or who put tomatoes in them.

The University of Kentucky has developed its own PVC tunnel, the “UK high tunnel”, which is very inexpensive. Hightunnel.org is an all-inclusive resource for high tunnels nationally. Berrea College also has 6-8 organic high tunnels. Plus, Kentucky State University has beautiful research farm that’s aimed at the small, diverse farmer.

She doesn’t have a lot of growers asking for technical assistance around season extension, but she works to tell them it’s a good idea. Very few of the farmers she works with are full-time farmers. The main people she would suggest them to would be CSA farmers.

Generally, the problem is that this area just doesn’t have enough farmers. Summer farmers are exhausted and don’t want to pick it up. She tells them it’s a great idea, but they’re slow to bite, because they don’t know that they have time.

She did have great turnout for high tunnel workshop – around 100 – but she only knows of the growers that have them. The area needs more farmers!

**Rough Brothers Greenhouse Design**

The biggest problem one expert sees, nine out of 10 times, is the inability for people to get financing, especially on the commercial greenhouse scale. They can have a great idea, but then they don’t get financed. Banks just don’t have any idea about the greenhouse industry.

**KEY THEMES/ACTION PLAN**
As described in survey responses, producer interviews, and key stakeholder interviews, the following key issues limit the willingness and ability of local growers to extend the growing season of local produce. While some support mechanisms exist for local producers who are indeed interested in extending their growing season, increased financial support, education, labor assistance, and markets will be key to increasing the volume of local produce grown year-round.

**Finances:** Funding was one of the key limitations described by growers. Raising awareness of local funding sources, like the NRCS EQIP program, is one easy way to support growers. Additional funding sources could also be developed to complement this program. Local Loans for Local Foods, Cincinnati’s Slow Money chapter, works to connect farmers and food businesses with community members who might be interested in providing low-interest loans. Greater awareness of their events and recruitment of more community members interested in lending money would be beneficial. Support could also take the form of technical assistance around business planning, crowdfunding, and other types of fundraising and financial skills, as well as a loan fund for labor or other expenses.

**Labor:** Finding good labor and minimizing turnover are struggles for local growers at any point, but these challenges only increase with year-round or increased growing. One way to address this issue is to increase the labor pool by providing new training opportunities for beginning farmers. These types of educational opportunities will serve to create a more knowledgeable, and hopefully committed, employee pool for established growers. While new educational programs are starting this year at Cincinnati State and Xavier, there is always room for more education and support for new growers outside of the traditional education system. A group of community members well aware of this need have met to discuss developing an intern loan fund that would help pay the way for interns on local farms. Such a fund would serve the dual purpose of providing paid training opportunities for new growers, as well as the much-needed labor for local farms. Opportunities also exist for creative partnerships between farms and non-traditional sources of farm labor (returning citizens program, etc.).

**Grower Education:** Numerous producers and stakeholders discussed an interest in workshops, knowledge-sharing, and/or case studies for existing growers. This type of effort could be structured as a workshop series, an organized training program (similar to the Civic Garden Center’s community garden trainings), or simply as ad hoc events. In addition to educational programming and farm tours, participants could also provide labor at the different farms they visit. Case study reports on successful specialty crop growers utilizing season extension techniques would be a useful tool. Season extension mentoring relationships could also be an option.

**Markets:** Clearly, many of the growers and stakeholders surveyed see a need for greater development of markets for local produce. This effort could take the form of increasing the aggregation of local foods for sales to wholesale/retail markets or increasing the number and viability of winter farmers’ markets, to the hands-on facilitation of connections between growers and buyers. Other ideas include networking events to connect the two entities, and educational programming explaining best practices for working together. Facilitated planning meetings between the two that take place before the growing season could help, as could one-on-one conversations with local buyers focused on finding ways to increase their local food purchases. Structured matching of local farms with local restaurants could lead to interesting partnerships.

**Scale:** Interviewees indicated limited interest in growth among small farmers. If this is the case, then the key is to identify the growers who would in fact be interested in scaling up and actively support them through that process (business planning, markets, mechanization). Another strategy could be to conduct a study of mid-sized commodity growers and gauge their interest in transitioning to specialty crops. One key inflection point could be during generational farm transfer, which, given the age of the average farmer will likely be happening for many in the near future.
Strong mid-sized farms that employ season extension techniques will be a necessary component of a robust local food system that is able to meet the potential demand for food products grown and produced within the region.

Season Extension Resources:

- *Season Extension Techniques for Market Gardeners, ATTRA*  

- *Season Extension Tools & Techniques, UK Cooperative Extension*  
  http://www.uky.edu/Ag/CCD/introsheets/extension.pdf

- *Extending the Production Season for Vegetables and Small Fruit, Maryland Cooperative Extension Fact Sheet*  

- *Fourteen Ways to Extend Your Growing Season, Mother Earth News*  

- *Introduction to Season Extension in Organic Vegetable Production Systems, eXtension*  
  http://www.extension.org/pages/18366/introduction-to-season-extension-in-organic-vegetable-production-systems#.UsSuhHCS5gI

- *Top Ten Ways to Extend Your Growing Season, Johnny’s Seeds*  

- *Vegetable Gardening and Season Extension, University of Vermont Extension*  
  http://www.uvm.edu/vtvegandberry/VegetableGardeningMG.pdf

- *Season Extension of Vegetable and Small Fruit Crops in West Virginia, West Virginia University Extension*  
  http://www.anr.ext.wvu.edu/lawn_garden/gardening-101/vegetable-gardening-season-extension
APPENDIX F: SEASON EXTENSION QUESTIONNAIRE

Green Umbrella “Local Food Action Plan” Project

Season Extension Questionnaire

The Green Umbrella Local Food Action Team was recently awarded a planning grant from the Health Foundation of Greater Cincinnati. One part of Green Umbrella’s “Local Food Action Plan” Project will be a report on the barriers, challenges, and opportunities facing farmers interested in extending the growing season of local produce in this region.

As such, we are hoping you would be willing to participate in this portion of the research by answering the following questions on the topic of season extension.

The ultimate goal of this research is to lay the groundwork for an action plan -- to identify what needs to be done in terms of extending the growing season and to make a plan for how to address the barriers and challenges we identify. Thank you for your assistance!

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Questions:

1) Name and contact information:
   We will keep this information private, but it would be helpful for us to have in case we want to follow up about any of your answers.

2) How many acres do you currently farm?

3) Farm location (city/state/county):

4) Number of employees (full time, part time, interns, etc.)?

5) What are your primary crops?

6) What is your current growing season?

7) Are you doing anything to extend your growing season at this time?

   If yes, what?
If not, why not?

8) Have you considered, or would you consider, any of the following?

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<td>Floating row covers</td>
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<td>Low tunnels</td>
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<td>Cold frames</td>
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<td>High tunnels/hoop houses</td>
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9) If you started employing season extension measures, how much do you think you could increase production and sales? (For those who already do, how much does it increase your production and sales?)

10) What challenges do you see for farmers interested in extending the growing season?

11) Which of the following do you personally see as challenges? Please circle all that apply.

Knowledge of appropriate practices to implement
Knowledge of climate/microclimate
Knowledge of timing of planting and plant varieties
Irrigation (infrastructure, cost, water access, etc.)
Lack of funding
Labor
Don't have markets for produce
No break in the work season
Plastic disposal
Higher management demands

12) Do you have any suggestions for ways to overcome these challenges?

13) What are the reasons you see for extending the growing season?

14) Which of the following would be reasons you would extend your growing season? Please circle all that apply.

Year-round income
Access to different markets and new customers
Customer retention
Higher prices during "off-season"
Higher yields
Better quality
Meet demand for local food; increase local food supply
Year-round employment for staff
Reduced insect and disease pressure

15) What do you think would help more producers extend the growing season?

16) Where do you, or would you, try to sell early and late-season crops?

17) What are the other challenges you experience in running a sustainable farm business?

18) **10% Shift Question**: Do you already, or are you interested in, accepting SNAP/EBT?