2012

Food System Planning in Western Massachusetts: A Community Organization Assessment

Arianna R. G. Thompson
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FOOD SYSTEM PLANNING IN WESTERN MASSACHUSETTS:
A COMMUNITY ORGANIZATION ASSESSMENT

A Thesis Presented
by

ARIANNA R. G. THOMPSON

Submitted to the Graduate School of the University of Massachusetts Amherst in partial fulfillment of the requirements for the degree of

Master of Regional Planning

February 2012

Department of Landscape Architecture and Regional Planning
FOOD SYSTEM PLANNING IN WESTERN MASSACHUSETTS:
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ARIANNA R. G. THOMPSON

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Landscape Architecture and Regional Planning
ACKNOWLEDGEMENTS

I have been blessed throughout my life to have the support of incredible teachers. This project was possible because of the accumulation of educators who have spent effort and energy helping to guide me, and who have encouraged me to think for myself.

I owe much gratitude to the leaders and spokespersons from the twenty-one organizations that spent time talking and brainstorming with me as part of this project. Thank you to the Pioneer Valley Planning Commission for believing in the importance of this work, and particularly to Catherine for making it possible.

Thank you to Lorraine for your critical insight, wisdom, encouragement, and willingness to embrace interdisciplinary efforts.

Thank you to Mark for championing me every step of the way, even through multiple changes in direction. Thank you also to all the UMass LARP faculty and staff for continued support and motivation.

Thank you to Selena for introducing me to an entirely new world of food. Thank you to my parents for patient guidance, for teaching me how to cook, and for encouraging me to follow my dreams.

Most of all, thank you to Ben, for holding my hand.
ABSTRACT

FOOD SYSTEM PLANNING IN WESTERN MASSACHUSETTS:
A COMMUNITY ORGANIZATION ASSESSMENT
FEBRUARY 2012
ARIANNA THOMPSON, B.A., WESLEYAN UNIVERSITY
M.R.P., UNIVERSITY OF MASSACHUSETTS AMHERST
Directed by: Mark Hamin

Comprehensive planning for regional food systems is a relatively new focus in the planning field. Heightened national awareness of the economic, environmental and equity implications of our current food system has magnified the importance of planning engagement on food-system issues. While addressing food system concepts is relatively new to planners, community-based organizations have been historic players in the development of food-system programs and critical food-system policy, particularly with regard to food access and local food production.

This thesis reviews the status of the regional food system in the Pioneer Valley of Western Massachusetts through an assessment of the efforts of food-related community-based organizations working in the region. The data results provide a knowledge platform for the regional planning agency that supports collaboration with community-based organizations, builds upon current assets and opportunities for improvement, and facilitates strategies to address food-system barriers, in order to develop and sustain a viable food system for the Pioneer Valley region. This research intends to support two central conceptual objectives: first, providing
evidence to support the key role of planning practice in food-system efforts; and second, highlighting the importance of planning and community-organization collaborations to achieve greater systemic impact. Finally, this research aims to expand available information regarding the role of collaborative planning and community organization partnerships in the food-system change process, so as to highlight assets and strengthen the integration of efforts towards building comprehensive and sustainable regional food system networks.
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CHAPTER 1

INTRODUCTION & RESEARCH DESIGN

1.1 Goals, Objectives and Project Scope

This research study provides a detailed assessment of the efforts currently taking place to develop and enhance the regional food system in the Pioneer Valley of Western Massachusetts. The Pioneer Valley includes the three counties of Hampden, Hampshire and Franklin, and supports a population of roughly 700,000 people. The Pioneer Valley provides an excellent site for this research because it encompasses a variety of rural, urban, suburban and small-town areas. Further, the Pioneer Valley contains an abundance of community-based organizations working to confront barriers in all aspects of the local/regional food system, addressing topics that span the support of small-scale farming and food processing centers, the implementation of urban farming sites and community gardens, food access and affordability concerns, and the promotion of healthy food preparation and consumption education.

This thesis reviews the current state of the Pioneer Valley food system through a comprehensive assessment of the work of food-related, community-based organizations practicing in the region. The data results provide a knowledge platform for the regional planning agency to most appropriately support collaboration with community-based organizations in order to build upon current
assets and opportunities for improvement, and to facilitate strategies to address food-system barriers, with the goal of developing and sustaining a viable food system for the Pioneer Valley region. At the core of this research endeavor is the concept that, while planners are relatively recent arrivals to the wider recognition of food-system concerns, community-based organizations have long been historic players in food-system programs and in the development of critical food-system policies, particularly in regard to food access and local food production. This research intends to support two central conceptual objectives: first, providing evidence to support the key role for planning practice in food-system efforts; and second, highlighting the importance of planning and community-organization collaborations to achieve greater systemic impact.

The assessment survey described here provides a comprehensive outline of the components needed to develop and sustain a viable regional food system. The assessment process collects data from community-based organizations focused on food-system program implementation and policy change across the Pioneer Valley region. The data analysis seeks to uncover the core programmatic, legislative and data needs of agencies working to strengthen the regional food system, as well as to determine appropriate strategies for productive, comprehensive collaboration. Building upon the data analysis, this research project further examines the role of collaborative planning and community-organization partnerships in the food-system development process of the Pioneer Valley, highlighting core organizational assets. In sum, this study seeks to support the integration of efforts across agencies
in facilitating a comprehensive and sustainable regional food-system network. Key research objectives are outlined in more detail below.

1.1.1 Research Objectives
• Complete a comprehensive assessment of the current state of food-system planning in the Pioneer Valley region to determine regional assets, barriers, and opportunities for improvement.
• Explore the role of planning practice in sustaining and supporting comprehensive regional food systems.
• Examine the role of collaboration efforts between planning agencies and community-based organizations to draw conclusions about the role of collaborative processes in food-system development.

To achieve these objectives, this project seeks to address the following key points through the assessment survey and data analysis process. Core research questions and current hypotheses are listed below.

1.1.2 Key Research Questions
• What is the current state of the regional food system in the Pioneer Valley?
  o What programmatic and policy efforts have community-based organizations in the Pioneer Valley addressed?
  o What are these organizations’ data capacities and needs relating to regional food-system development?
• How can planning agencies better build upon and integrate the efforts currently taking place?
  o What facilitative or collaborative role can regional planning agencies take when newly entering a food-system process sustained by informal networks of community-based organizations?
• What role do planning and community-organization collaborations play in strengthening and sustaining a comprehensive regional food system?
  o What are the strengths or limitations to these collaborations?

1.1.3 Hypotheses
• A facilitating body, such as a regional planning agency, is critical to achieving regional food-system cohesion because of the variety and complexity of food-system strategic and organizational needs. The absence of a food-system facilitating body results in disjointed information flow and disparate strategic goals across the region.
• Regional planning agencies represent ideal coordinators for food-system planning because of the alignment of food-system planning strategies with many other regional planning objectives.

1.2 Research Outline
The theoretical foundation of this thesis relies on the integration of public health and planning theories, and provides an interdisciplinary, asset-based approach to food-system change models. This research project is also based in a social-justice
framework that highlights the importance of community engagement in the planning process, and the development of collaborative community-planning partnerships. The overarching aim of this work is to assess the current state of food-system change in the Pioneer Valley region of Western Massachusetts, while identifying existing patterns, partnerships and potential opportunities for collaboration. This research aims to increase general knowledge regarding the implications of the current food system, while acknowledging the importance of food production and distribution as part of an integrated system, and striving to increase the information available to practitioners and policy-change agents regarding potential alternative system models. An overview of the research scope and study area is presented in Chapter One.

The second chapter of this thesis provides a comprehensive literature review, synthesizing the historical and theoretical convergence of public health and planning objectives within the food-system research. The literature review includes an in-depth examination of public health and planning methodologies regarding food-system initiatives, as well as the historic legacy of community engagement practices. This section incorporates an examination of the importance of community participation in planning, and reflects both historical contexts and current community participation methods and strategies. The literature review concludes with evidence supporting the importance of community and planning collaborations in developing long-lasting, inclusive, and sustainable food-system change.
Chapter Three outlines the research methodology, providing information on the development of the survey assessment tool as well as the data collection process and data analysis. The data collected include information about all components of the food system, including food production, processing and transformation, distribution, acquisition, consumption and the disposal of food waste. For each segment of the food system, questions are asked that pertain to food-system program implementation and policy advocacy, as well as to organizational data collection and information needs.

Chapter Four presents the data analysis. An overview of the general state of the food system of the Pioneer Valley is provided. In addition, the current state of programmatic and policy efforts for each food-system component are explored in order to determine areas of regional success, opportunities for improvement, and systemic barriers. Chapter Four also presents information on organizational data collection and utilization. Food-system data needs are aggregated by categories including environmental impact assessment, economic assessment, food-related resource location and mapping, and health and hunger-related data assessment.

Chapter Five summarizes the data results and provides core recommendations for the Pioneer Valley planning agency’s regional food security and sustainability planning process. In addition, Chapter Five explores the implications of this research study for broad food-system planning efforts, including a discussion of the importance of regional planning in bridging the urban and rural divide. Chapter
Five also presents opportunities for improvement of the survey assessment tool, and suggests future research opportunities.

1.3 Regional Context: The Pioneer Valley

The Pioneer Valley region of Western Massachusetts is defined in this research study as containing Hampden, Hampshire and Franklin Counties (Figure 1.3-1). The region is bordered to the South by the state of Connecticut, to the North by Vermont, by Berkshire County on the West, and by Worcester County to the East. In sum, the Pioneer Valley occupies approximately 1,850 square miles, and contains roughly 700,000 residents living in varied urban, suburban, small town, and rural areas.

*Figure 1.3-1 Hampden, Hampshire and Franklin Counties of MA. (U.S. Census Bureau 2000)*
The Connecticut River runs through the three counties, providing the geographic valley referenced by the Pioneer Valley name. Mineral-rich soil, a historic remnant of glacial lake sediment deposits, provides prime soil conditions for farmland production in the region. By 2011 the Pioneer Valley region could boast of having over 300 farms, restaurants, food retailers and other food-related businesses actively supporting the production and marketing of local food (CISA 2010). In stark contrast, over 10% of the Pioneer Valley population reported being food-insecure in the year 2010 (Feeding America 2011). Thus, like much of the United States today, the Pioneer Valley region is one of variety and disparity. While the three Pioneer Valley Counties share some demographic similarities, there are also substantial differences in population demographics, economic bases and income generation across each county. The following sections provide a brief overview of each county in order to better highlight trends and differences among the three. For a more detailed view of population density by county, see Figure 1.3-2, and for further statistical cross-comparison see Table 1.3-1.
Table 1.3-1 Hampden, Hampshire & Franklin County Data (Census Bureau 2010)

<table>
<thead>
<tr>
<th></th>
<th>Hampden</th>
<th>Hampshire</th>
<th>Franklin</th>
<th>MA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Population density (per Square Mile)</td>
<td>749</td>
<td>529</td>
<td>101</td>
<td>835</td>
</tr>
<tr>
<td>% Population under 18</td>
<td>23.6%</td>
<td>17.1%</td>
<td>19.3%</td>
<td>21.7%</td>
</tr>
<tr>
<td>% Population over 65</td>
<td>14%</td>
<td>12.8%</td>
<td>15.2%</td>
<td>13.6%</td>
</tr>
<tr>
<td>% Population White</td>
<td>76.5%</td>
<td>88.7%</td>
<td>94.2%</td>
<td>80.4%</td>
</tr>
<tr>
<td>% Population Hispanic</td>
<td>20.9%</td>
<td>4.7%</td>
<td>3.2%</td>
<td>9.6%</td>
</tr>
<tr>
<td>% Completed high school</td>
<td>83%</td>
<td>92%</td>
<td>91%</td>
<td>88.4%</td>
</tr>
<tr>
<td>% Living below poverty</td>
<td>17.2%</td>
<td>11.3%</td>
<td>12.8%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Median Household Income</td>
<td>$46,646</td>
<td>$56,263</td>
<td>$48,993</td>
<td>$64,057</td>
</tr>
<tr>
<td>% Change in County employment (2000-08)</td>
<td>-6.2%</td>
<td>+14.8%</td>
<td>-10.9%</td>
<td>-0.4%</td>
</tr>
</tbody>
</table>

Figure 1.3-2 Pioneer Valley Population Density (U.S. Census Bureau 2010)
1.3.1 Hampden County

Hampden County is 618 square miles with an average population density of 749 people per square mile (*Figure 1.3-2*). On April 1, 2010 the decennial census counted 463,490 people living in Hampden County. Almost a quarter of the population (23.6%) is recorded to be under 18 years old, while 14% of the population is 65 years old or older. The majority of the population self-identify as White at 76.5%, with 9% of the population identifying as Black or African American, 0.4% identifying as American Indian or Alaskan Native, 2% identifying as Asian, 0.1% identifying as Native Hawaiian or Other Pacific Islander, and 2.9% of the population identifying as two or more races. One-fifth of the Hampden County Population (20.9%) identify as ethnically Hispanic or Latino; and of those who self-identify as Hispanic or Latino, 86% identify as Puerto Rican (Census Bureau 2010).

According to the U.S. Census Bureau American Community Survey (ACS), between 2005 and 2009, 22% of Hampden County residents spoke a language other than English in the home; of those, the majority spoke Spanish. The 2005-2009 ACS also shows that 83% of Hampden County residents aged 25 years and over had completed high school, while 24% of the population had obtained a bachelor's degree or higher (Census Bureau 2005-2009). According to the U.S. Census Bureau 2009 Small Area Income and Poverty Estimates, 17.2% of Hampden County residents (78,142 people) live below the poverty line, including 27% of the population under 18 years old. The 2009 Median Household Income for Hampden
County was $46,646, as compared to the Massachusetts state average of $64,057 (Census Bureau 2009).

92.8% of the current housing in Hampden County is listed as occupied, with 63.6% of the population living in owner-occupied housing and 36.4% of the population living in renter-occupied housing units (Census Bureau 2010). According to American Community Survey data, 54% of renters in Hampden County between 2005 and 2009 spent 30% or more of their income on housing costs (Census Bureau 2005-2009; Census Bureau 2010). In 2009 the leading industries in Hampden County were Educational Services, Health Care, and Social Assistance (27%) and Manufacturing (13%). According to the U.S. Census Bureau 2008 County Business Patterns, in 2008 employers in Hampden County employed 169,954 people, with a decrease in employment between 2000 and 2008 of 6.2% (Census Bureau 2008).

1.3.2 Hampshire County

Hampshire County occupies 529 square miles with an average population density of 298 people per square mile (Figure 1.3-2). On April 1, 2010, the decennial census counted 158,080 people living in Hampshire County. 17.1% of the population is recorded to be under 18 years old, while 12.8% of the population is 65 years old or older. The majority of the population self-identify as White at 88.7%, with 2.5% of the population identifying as Black or African American, 0.2% identifying as American Indian or Alaskan Native, 4.5% identifying as Asian, 0% identifying as
Native Hawaiian or Other Pacific Islander, and 2.5% of the population identifying as two or more races. 4.7% of the Hampshire County population identifies as ethnically Hispanic or Latino (Census Bureau 2010).

According to the U.S. Census Bureau American Community Survey, between 2005 and 2009 11% of Hampshire County residents spoke a language other than English in the home, with a considerable variation of languages identified. The 2005-2009 ACS shows that 92% of Hampshire County residents age 25 and over had graduated high school, and that 41% of the population had obtained a bachelor's degree or higher (Census Bureau 2005-2009). According to the U.S. Census Bureau 2009 Small Area Income and Poverty Estimates, 11.3% of Hampshire County residents (15,471 people) live below the poverty line, including 11.1% of the population under 18 years old. The 2009 Median Household Income for Hampshire County was $56,263, comparable to the Massachusetts state average of $64,057 (Census Bureau 2009).

94.3% of the current housing in Hampshire County is listed as occupied, with 67.9% of the population living in owner-occupied housing and 32.1% of the population living in renter-occupied housing units (Census Bureau 2010). According to American Community Survey data, 55% of Hampshire County residents spent 30% or more of their income on housing costs (Census Bureau 2005-2009; Census Bureau 2010). In 2009 the leading industries in Hampshire County were Educational Services, Health Care, and Social Assistance (38%) and Retail Trade
(11%). According to the U.S. Census Bureau 2008 County Business Patterns, in 2008 employers in Hampshire County employed 52,798 people, with an increase in employment between 2000 and 2008 of 14.8% (Census Bureau 2008).

1.3.3 Franklin County

Franklin County occupies 702 square miles with an average population density of 101 people per square mile (Figure 1.3-2). On April 1, 2010, the decennial census counted 71,372 people living in Franklin County. 19.3% of the population is recorded to be under 18 years old, while 15.2% of the population is 65 years old or older. The majority of the population self-identify as white at 94.2%, with 1.1% of the population identifying as Black or African American, 0.3% identifying as American Indian or Alaskan Native, 1.3% identifying as Asian, 0% identifying as Native Hawaiian or Other Pacific Islander, 1% identifying as “Other,” and 2.1% of the population identifying as two or more races. Only 3.2% of the Franklin County population identifies as ethnically Hispanic or Latino (Census Bureau 2010).

According to the U.S. Census Bureau American Community Survey, between 2005 and 2009 6% of Franklin County residents spoke a language other than English in the home, and of those one-third (31%) spoke Spanish. The 2005-2009 ACS shows that 91% of Franklin County residents age 25 years and over had completed high school, while 32% of the population had obtained a bachelor’s degree or higher (Census Bureau 2005-2009). According to the U.S. Census Bureau 2009 Small Area
Income and Poverty Estimates, 12.8% of Franklin County residents (9,008 people) live below the poverty line, including 16.4% of the population under 18 years old. The 2009 Median Household Income for Franklin County was $48,993, comparable to the Massachusetts state average of $64,057 (Census Bureau 2009).

90.2% of the current housing in Franklin County is listed as occupied, with 68.9% of the population living in owner-occupied housing and 31.1% of the population living in renter-occupied housing units (Census Bureau 2010). According to American Community Survey data, 48% of renters living in Franklin County between 2005 and 2009 spent 30% or more of their income on housing costs (Census Bureau 2005-2009). In 2009 the leading industries in Franklin County were Educational Services, Health Care, and Social Assistance (31%) and Manufacturing (13%). According to the U.S. Census Bureau 2008 County Business Patterns, in 2008 employers in Franklin County employed 22,069 people, with a decrease in employment between 2000 and 2008 of 10.9% (Census Bureau 2008).

1.3.4 Health and Hunger in the Pioneer Valley

The Connecticut River Valley is an area with rich, fertile agricultural land; yet many of the crops produced in this region are grown for export or for specialty processed or ‘boutique’ food markets. Simultaneously, many Pioneer Valley residents face genuine food access challenges. In 2010, over ten percent of the region’s population was considered “food insecure,” as defined by... and in Hampden County
the food insecurity rate reached 14.3% of the total population. The food insecurity rate in Hampshire and Franklin Counties was 10.2% and 11.5% respectively, compared to the rate of 11.2% for Massachusetts as a whole (Table 1.3-2). Food insecurity is defined here as having limited access to nutritionally adequate food for a significant period of time (Feeding America 2011).

Table 1.3-2 Health and Hunger in the Pioneer Valley (Feeding America 2011) (O'Keefe 2007)

<table>
<thead>
<tr>
<th></th>
<th>Hampden</th>
<th>Hampshire</th>
<th>Franklin</th>
<th>MA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL food insecurity rate %</td>
<td>14.3%</td>
<td>10.2%</td>
<td>11.5%</td>
<td>11.2%</td>
</tr>
<tr>
<td>TOTAL food insecurity pop.</td>
<td>66,880</td>
<td>15,780</td>
<td>8,240</td>
<td>727,530</td>
</tr>
<tr>
<td>Food insecurity rate ABOVE SNAP poverty threshold (%)</td>
<td>32%</td>
<td>50%</td>
<td>38%</td>
<td>45%</td>
</tr>
<tr>
<td>CHILD food insecurity rate %</td>
<td>24.3%</td>
<td>16.3%</td>
<td>20.2%</td>
<td>18.1%</td>
</tr>
<tr>
<td>CHILD food insecurity pop.</td>
<td>27,530</td>
<td>4,470</td>
<td>2,910</td>
<td>262,650</td>
</tr>
<tr>
<td>CHILD income-eligible for federal nutrition program (%)</td>
<td>70%</td>
<td>47%</td>
<td>59%</td>
<td>53%</td>
</tr>
<tr>
<td>% Overweight: Male</td>
<td>72.8%</td>
<td>64.5%</td>
<td>67.5%</td>
<td>67.5%</td>
</tr>
<tr>
<td>% Overweight: Female</td>
<td>55.4%</td>
<td>42.5%</td>
<td>50.2%</td>
<td>47.8%</td>
</tr>
<tr>
<td>% Obese: Male</td>
<td>31.7%</td>
<td>23.0%</td>
<td>17.8%</td>
<td>23.8%</td>
</tr>
<tr>
<td>% Obese: Female</td>
<td>26.3%</td>
<td>17.8%</td>
<td>28.8%</td>
<td>19.6%</td>
</tr>
<tr>
<td>&lt; 5 servings of fruit or vegetables/day: Male</td>
<td>79.5%</td>
<td>72.1%</td>
<td>81.7%</td>
<td>78.2%</td>
</tr>
<tr>
<td>&lt; 5 servings of fruit or vegetables/day: Female</td>
<td>70.0%</td>
<td>60.7%</td>
<td>56.2%</td>
<td>67.4%</td>
</tr>
</tbody>
</table>
In addition to issues of food insecurity, Pioneer Valley residents face growing health concerns regarding increasing obesity rates and obesity-related complications such as diabetes and heart disease. National research has linked the rise in obesity to combinations of low physical activity levels and increased consumption of high-calorie and nutrient-poor processed foods. According to a report published by the Massachusetts Department of Public Health in 2007, between 1995 and 2005 the percent of overweight adults in Western Massachusetts (including Hampshire, Hampden, Franklin and Berkshire Counties) grew from 50% to 62% of the total population. Springfield is the largest city in Western Massachusetts, located in southern Hampden County. Between 1995 and 2005 the rate of overweight adults in the city of Springfield grew from 54% to 66%, placing two-thirds of Springfield residents in a health-risk category. In 2005, 23.3% of the adults in Western Massachusetts were obese, compared to 20.7% in the state as a whole (Table 1.3-2) (O'Keefe 2007).

As indicated in the data shown in Table 1.3-2 the Pioneer Valley region follows national trends of growing obesity rates and also food insecurity concerns. Of increasing concern are the high rates of food insecurity impacting children in the Pioneer Valley, and the subsequent implications for population health and economic development outcomes. Rising rates of both food insecurity and obesity, though seemingly disparate from one another, are inextricably linked to the current global food system and the consequences of minimal regulation placed on regional and national food inputs. Further connections between the global food system and
health outcomes can be found in *Chapter 2, Section 2 - (Un)Healthy Eating: Implications of our National Food System.*

Mirroring health disparities seen across the nation and the state, obesity rates in Western Massachusetts are disproportionately high among racial and ethnic minority populations. In 2005, 21.6% of the White population in Western Massachusetts was obese, while 33.7% of the Hispanic population and 47.7% of the Black population were obese (*Table 1.3-3*). Increasing rates of obesity and rising weight concerns in Western Massachusetts are found in similar or more drastic trends across the nation. Rising weight gain is shown to correlate to higher rates of heart disease, hypertension, and diabetes, and to increased instances of hospital visits and higher mortality rates; particularly impacting ethnic and racial minority populations (O'Keefe 2007).

*Table 1.3-3 Obesity by Race and Ethnicity – Western Massachusetts 2005 (O'Keefe 2007)*

<table>
<thead>
<tr>
<th></th>
<th>Western Massachusetts</th>
<th>Massachusetts</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Non-Hispanic</td>
<td>26%</td>
<td>19.9%</td>
</tr>
<tr>
<td>Black Non-Hispanic</td>
<td>47.7%</td>
<td>32.7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>33.7%</td>
<td>27.4%</td>
</tr>
</tbody>
</table>

The Pioneer Valley is an ideal study site for this research. Due to similarities in health outcomes and population statistics with other sites nationwide, the Pioneer Valley region represents a potentially replicable research site. Inequities regarding the current food system have gained widespread media attention, and measures are
increasingly being taken to assess and positively influence our current system at neighborhood, regional and national scales. Residents of the Pioneer Valley live in areas that vary significantly in population density, and are employed across a range of sectors including the agriculture, industry and retail settings. At the same time, the Pioneer Valley region presents several unique characteristics that position the region at the forefront of food-system change. First, the regional planning agency has committed to conducting a multi-year sustainability project, of which food security is a substantial component. Second, the region benefits from numerous powerful community-led organizations that help sustain a growing local and regional food-system network. These organizations provide support on food-system issues spanning local food marketing, agricultural land preservation, financial and technical assistance for small and medium farmers, and the promotion of healthy food access and consumption for all residents. It is this combination of committed regional planning facilitation, and the wealth of organizational efforts and expertise within the region, that delineates the Pioneer Valley as distinctive, and also as advantageous for the study of community and planning food-system collaboration processes and partnerships.
CHAPTER 2
LITERATURE REVIEW

2.1 Core Theories and Concepts: An Interdisciplinary Approach

The theories referred to in this thesis reflect a compilation of interdisciplinary concepts and connections. Central to the research foundation is the premise that, in order to support sustainable and healthy communities, city and regional planners need to work collaboratively with local organizations that encourage healthy and environmentally sustainable food systems. Likewise, greater community food-system integration with local policy and planning developments will allow for broader systemic change, maximize efforts to enhance social equity, and promote positive health outcomes.

The following literature review outlines the historical divergences and convergences of public health and planning ideologies, and demonstrates the value of re-connecting the two disciplines within a community-based collaborative context. This review analyzes the implications of our current global food system, highlights various food-system models, and emphasizes the strengths of community and planning partnerships. The information presented below emphasizes the importance of restructuring our national food system by researching regional assets and building on these advantages in a collaborative model that best helps to develop sustainable regional food systems.
2.1.1 Merging Planning and Public Health: Historic Trends & Future Implications

Before the 1800s the United States consisted of mainly rural areas. The rise of industrialization in the eighteenth and nineteenth centuries increased the urban job market and brought an influx of rural residents and new immigrants into American cities. The rapid growth of urban populations led to higher demands for clean water as well as an increased need for sewage and garbage disposal. Disease epidemics related to poor sanitation in urban areas overwhelmed the nation. In combating these epidemics and gaining control over urban sanitation, the foundations of public health and city planning were formed. Although created with historically linked intentions, the fields of planning and public health diverged when public health practitioners began to focus more strongly on biomedical disease prevention, and planning officials concentrated on issues relating to infrastructure development and urban expansion.

The rise in population obesity and obesity-related illnesses over the last decade has in many ways inspired a re-connection between the planning and public health fields. Public health practitioners and scholars increasingly subscribe to the ecological model of health promotion over the previous individual-based and biomedical models. The ecological model emphasizes the influence of institutions, communities, and public policy on population health outcomes. This systems approach to health highlights the role of infrastructure, organizational arrangements, and community empowerment as essential foundations for positive
health indicators (McLeroy, Bibeau, et. al. 1988). Through utilization of an ecological and systems-based approach, the public health field has expanded to include realms traditionally considered within the umbrella of urban or regional planning.

Similarly, the scope of planning has also broadened, as the planning field continues to embrace the “3E” model of sustainability as central to planning practice and theory. The “3E” model incorporates equal attention to issues of Environmental protection, Economic development, and awareness of social and racial Equity issues within planning frameworks. Under this widely acknowledged model, the planning field is often divided into three major spheres. Planning with an environmental focus tends to consider cities and regions as consumers of resources and producers of waste, measuring the environmental implications of current or planned activities. The economic development framework focuses on the production, consumption, distribution, and innovation of an area, viewing business development and job growth as crucial to regional success. The equity perspective focuses on the distribution of resources, services and opportunities, often applying critical race, feminist and social theoretical perspectives to historic or future planning activities (Campbell 1996). The “3E” model of sustainability, adopted as the focus of most current planning theory and practice, is markedly similar to the public health model of ecological health promotion. In this fashion, the two fields of urban/regional planning and public health are beginning to merge not only in programmatic goals, but in academic theory as well.
2.2 (Un)Healthy Eating: Implications of Our National Food System

The implications of obesity and diet-related health outcomes in the United States are becoming increasingly apparent. In 2008, 68% of the American adult population was overweight, and more than one-third of the total population was considered obese (NIH 2008). Obesity rates are significantly higher in low-income and ethnic minority populations, demonstrating a health disparity likely indicative of deeply rooted social and racial inequities of wealth and power in the United States.

Individuals are considered overweight if they have a Body Mass Index (BMI) of $\geq 25$, and obese with a BMI of $\geq 30$. Research studies find that obese individuals face a significantly increased risk of death, particularly due to cardiovascular concerns. Mortality rates for individuals with obesity indicators, relative to healthy-weight individuals, show an excess per year of 112,000 deaths due to cardiovascular disease, over 15,000 deaths due to cancer, and over 35,000 excess deaths due to non-cancer and non-cardiovascular disease causes (NIH 2008). These deaths are preventable, are directly related to diet, and are linked to food access and consumption limitations imposed by our national food system. Combating obesity is not merely altruistic; it is essential to the economic success of the United States. Rising rates of obesity have been estimated to cost United States taxpayers roughly $139 billion per year in direct costs, including prevention, diagnosis, and treatment services, and in indirect costs, including time absent from employment and the loss of future earnings due to premature death (Finkelstein, Ruhm, et. al. 2005).
While the consequences of the ever-growing obesity epidemic continue to gain national media attention, it is important to remember that many Americans do go hungry, and that many live in households that are consistently food insecure. Household food insecurity is measured by defining affected households as “uncertain of having, or unable to acquire, enough food to meet the needs of all their members because they had insufficient money or other resources for food” (ERS 2010). In 2009 14.7% of US households (17.4 million people) were food insecure. According to the US Department of Agriculture, in 2009 over 50.2 million people lived in food-insecure households, including over 17 million children. Of these food-insecure households, 12.2 million adults and 5.4 million children were classified as facing very low food security, defined by multiple indications of disrupted eating patterns and reduced food intake (ERS 2010). There is a demonstrated correlation between household food insecurity and negative health outcomes, including cognitive developmental deficits, behavioral and psychosocial dysfunction, psychological stresses, malnutrition and overall poor health for adults and children (Cook, Frank, et. al. 2004).

An overview of national obesity and food-insecurity statistics demonstrates the importance of reviewing and addressing the current systems of food distribution and acquisition in the United States. The ecological model of health promotion argues that combating the obesity epidemic requires a cultural shift, a national change in American attitudes towards food purchasing, preparation and
consumption. The ecological model goes as far as addressing food insecurity through a system-based approach, identifying housing and transportation connections to health outcomes (Blas & Kurup 2010). In their insightful article about food and eating environments, Story et al. write that, “Eating behavior is highly complex and results from the interplay of multiple influences across different contexts. An ecological approach is useful to guide research and intervention efforts related to eating behavior because of the emphasis on multilevel linkages, the relationships among the multiple factors that impact health and nutrition, and the focus on the connections between people and their environments,” (Story, Kaphingst, et. al. 2008).

Within a sustainability-planning framework, the 3E’s emphasize different and complementary components of food system processes. Equity planning highlights the systemic differences in obesity and food-insecurity outcomes, prompting planners to question systems of regional food distribution and access as a component of social justice. Economic development planners emphasize the financial implications of an unhealthy workforce, and also the role that food production and purchasing can play in growing local economies. Additionally, increasing concern in the environmental planning field regarding land and resource allocation and toxic food production practices bring environmental planners to the food-system planning table. Viewed through the dual lens of sustainable planning and ecological health, an inter-connected system appears, encompassing the processes of food production and distribution together with the processes of food
purchase, consumption and waste. By using this interdisciplinary lens and combining the contexts of planning and public health, this research attempts to identify the various issues around food as singular components of a deeply interconnected system. Leveraging the demonstrated need to address concerns of the current food system, this research seeks to demonstrate opportunities to adjust and enhance the system to better serve the needs of the United States population.

2.2.1 A Closer Look at Food Production and Food Waste

The basic comprehensive food system should be viewed as a closed and continuous loop. Food production leads to food processing, food distribution, food consumption, and finally to food waste. In an environmentally conscious arena, food waste would be recycled to support the production of new food. In the majority of the United States, however, food waste is not recycled; most food waste is deposited into landfills or burned in incinerators along with other forms of household garbage. The absence of comprehensive food composting nationwide increases landfill use by up to 15%, and simultaneously fails to provide farmers and gardeners with valuable fertilizers (Pothukuchi & Kaufman 2000). Further troubling is the fact that a substantial component of this food “waste” is essentially edible food, the disposal of which represents a complete systemic failure, as food is produced but never eaten. The systems of food production and food waste have been essentially hidden from the general public, creating a powerful disconnect for consumers between the product that they are eating and the origin of where their food comes from. The cultural disconnect between the awareness of food
production, and the nutrients needed to enhance soil for food production, limit consumer understanding of the complete implications of non-composted food waste. This disconnection of food’s production and waste cycles arguably negatively impacts the community’s ability to engage in, or to demand, comprehensive food-system planning measures (Kloppenburg, Hendrickson, and Stevenson 1995).

Large-scale agribusiness farms increasingly monopolize food production practices, and each year growing numbers of farmers are contracted with large agribusiness conglomerates at the expense of small and independent farms. The impact of large-scale farm growth on small and medium size farmers can be seen in sales. In 2001, 72% of all farm sales in the United States came from only 8% of American farms. In addition, present-day farmers receive less compensation for the food that they produce. According to food planning scholar Jerry Kaufman, in 1952 farmers received 40% of the consumer dollars, and in 1997 this ratio halved to only 21% (Kaufman & Jongman 2004). The changing economy of food production, combined with the decreasing attention to food production processes due to the separation of agriculture from urban societies, has led to minimized regulation of farmer activities, and subsequent increases in use of chemical fertilizers, pesticides and genetically modified organisms. In 1999 Pothukuchi and Kaufman raised concerns that the disconnected food system provided a “false sense of security” about food production and food access to most of the American population. More than ten years ago these authors proposed the theory that it is perhaps within the disconnect
between the origin of food and food accessibility that one can find the roots of breakdown in equity, economic and environmental aspects of food systems (Pothukuchi & Kaufman 1999).

Currently, large-scale agricultural policies regulate the production of the majority of the food consumed by the American public. One example that has received mainstream media attention is the federally regulated farming policies and subsidies that have contributed to the overproduction of commodity grain and oilseed crops (corn and soybeans) for the creation of artificial sweeteners such as high fructose corn syrup and hydrogenated vegetable oil (Story, Kaphingst, et. al. 2008). The retail demand for these crops makes it difficult for farmers to produce economically viable produce in the current food market, furthering the production of unhealthy food through subsidies directly financed by American taxpayers. The misalignment between food production and demonstrated public health needs further highlights the deep inadequacy of the current food system. The absence of policies or systems to regulate the production of regional, nutritious and sustainable food is glaringly apparent, and the subsequent connections being made to population health outcomes are frightening. While the New England regional farm economy has been less strongly affected by these agribusiness trends, much of the regional food supply nevertheless comes from agribusinesses outside the region.
2.2.2 Connecting Food Distribution, Food Acquisition and Food Consumption

Nutritious and healthy food is not equally accessible, or available, to all members of the United States population. In fact, accessibility to affordable and healthy foods is substantially lower in low-income and racial and ethnic minority neighborhoods. In addition, health disparities linked to diet-related chronic disease and obesity rates are associated with racial, ethnic and income parameters, disproportionately impacting lower-income and racial minority populations (Story, Kaphingst, et. al. 2008). While the cause of health outcomes is yet debatable, the correlation is clear: low-income communities have relatively limited access to healthy foods, and simultaneously also demonstrate higher rates of diet-related disease.

Limited access to supermarkets and grocery stores decreases opportunities for consumers to purchase healthy or nutritious foods. Chain supermarkets and local grocers continue to leave urban and lower-income areas at rapid rates, replaced by “big box” superstores in suburban or urban edge locations; this concept is historically referred to as “supermarket redlining.” Increasingly, low-income residents with limited access to automobiles or public transit options struggle to access major supermarkets. Without consistent supermarket availability, many low-income residents pay higher prices for lower-quality produce at local convenience stores, or forego the purchase of produce altogether. The plight of urban areas without grocery store access is often referred to as “food deserts,” and the phenomenon as the “grocery gap.”
Compounding the lack of accessible nutritious and healthy foods is the high quantity of unhealthy food choices that are available, particularly regarding low-priced fast food. In the United States today, almost half of American food expenditures are spent eating “out,” and roughly one-fourth of all meals eaten outside the home are fast-food meals. Lower-income “food desert” areas with limited access to large-scale grocery stores often have substantially higher concentration of fast food establishments (Story, Kaphingst, et. al. 2008). According to nutritional economists Drewnowski and Darmon, the average American family spends under $8/day on food and drinks, with low-income families spending under $25/week. The researchers write that Americans have the “lowest cost food supply in the world” due to subsidies for high-caloric processed fats and sweeteners. As a result, the typical American diet derives almost 40% of its energy output from high-processed sugars and fats. Refined foods with added fats and sugars are inexpensive and energy-dense, and thus appealing to low-income consumers. However, according to Drewnowski and Darmon, energy-dense diets have a low satiating power, potentially resulting in passive overeating and subsequent increased weight gain. These energy-dense foods are generally nutrient-poor, and prolonged consumption is correlated with high rates of adverse health outcomes (Drewnowski & Darmon 2005).

2.2.3 Food Sovereignty

Federal agricultural subsidies for high-density food products in the United States, often referred to as “cheap food” policies, are mostly hidden from the general public.
Hidden subsidies promote the deception that population health outcomes are the responsibility merely of the individual consumer. In other words, weight gain is attributed solely to individual consumption behavior. Yet, the current national food system and the subsequent inequities in racial, ethnic and socioeconomic food access and availability, are skewed by large federal agricultural subsidies. Self-defined activist and academic Raj Patel writes that food security is an issue of equity and human rights, and that the “politics of food security is something that requires direct democratic participation.” Patel calls for an end to the use of “food as a weapon of policy,” and instead for “comprehensive agrarian reform, [and] respect for life, seed, and land,” (Patel 2009).

In 2007 over 500 representatives from food-related organizations across the world gathered in Nyéléni Village, Sélingué, Mali, and created the Declaration of Nyéléni, outlining six core pillars of food sovereignty. The six pillars developed at Nyéléni are:

1. **Focus on Food for People:** Everyone has a right to food; food is more than a commodity.
2. **Value Food Providers:** Support sustainable livelihoods for food providers and the right to produce food.
3. **Localize Food Systems:** Bring providers and consumers together for joint-decision making on local food issues and reject inappropriate food aid.
4. **Put Control Locally:** Reject the privatization of natural resources and place regulatory control with local food providers.
5. Build Skills and Knowledge: Cultivate traditional knowledge and ensure food system education for future generations.


While the pillars of food sovereignty developed in Nyéléni were created within an international context, all of the tenets listed in the declaration apply to the United States domestic context as well. The foundation of this thesis research rests on a belief in, and support of, the Nyéléni pillars of food sovereignty.

In 2010 food system researchers Robert Gottlieb and Anupama Joshi published the book *Food Justice*, outlining the implications of the United States food system through a social justice construct. Similar to the food sovereignty framework, Gottlieb and Joshi write of food justice that, “[when] a social-justice-based approach to fair trade and sustainability standards is applied, food justice becomes integrated into the search for an alternative for how food is grown and what food choices can be made... A food justice orientation also provides a way to ensure that the benefits of eating locally and sustainably are shared by all who participate, from the farm to the producer and the laborer to the community, and eventually to the consumer,” (Gottlieb & Joshi 2010).
2.3 Defining Food Systems

2.3.1 The Traditional Food System Model

The traditional food-system model is categorized in five basic sections: food production, food processing, food distribution, food acquisition and food waste. While the model used for the majority of this research is an adaptation of the traditional food-system model, the traditional model serves as a useful basis to review alternate models and other complexities within the food system. The traditional model, in its comprehensive form, includes the following five categories:

- **Production**: Use of natural and human resources to grow edible plants and animals in urban, suburban, or rural settings.
- **Transformation/Processing**: Transformation of raw food to create an end product for consumption.
- **Distribution**: Direct or indirect distribution and transportation of processed and unprocessed foods to wholesalers or retailers.
- **Access and Consumption**: Availability, accessibility and purchase of foods for preparation, ingestion, and digestion.
- **Waste/Resource Recovery**: Disposal of food-related materials, waste and by-products and subsequent disposal, reuse, or recycling.

(Boarnet & Takahashi 2005)
2.3.2 Community Food Systems and Community Food Security

The community food-system model differs from the traditional model in that it emphasizes the importance of food security within the system, and highlights the value of the community as a system facilitator and an essential system asset. This model, based in a social justice, public health and environmental sustainability framework, holds the community as “indispensable” to the creation of a successful food system. Food-planning scholar Kami Pothukuchi writes about the particular role of the community in comprehensive food-system planning, separating the dominant global food system from the “charitable” food security network (Pothukuchi 2004). She cites the community food-system as a unique arrangement, and classifies it as a highly integrated connection of food producers, processors and consumers (Pothukuchi 2004). Pothukuchi explains that supporters of the community food-security movement, “believe that community food systems, developed systematically within the guiding framework of community food security, can strengthen localities and regions in multiple ways, alleviate the problems posed by the three dominant streams, and enhance possibilities for community planning - including community food planning,” (Pothukuchi 2004).

The term community food security (CFS) is defined as a circumstance in which, “all community residents [can] obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice,” (Hamm and Bellows 2003, 37). Community food
security is a broader concept than general food security, as it is intended to connote the key components of social equity, environmental sustainability and local/regional self-reliance not found in traditional definitions of food security. Anderson and Cook outline three umbrella disciplines within the food-security field, and identify the varying foci of the practitioners within each discipline. They identify one category as nutritionists and educators, focusing mainly on food access, food preparation and consumption decision-making. The second category includes agricultural researchers and activists, especially those focusing on practices of food production and environmental sustainability. The third is the staff involved in the anti-hunger movement, those who focus mainly on poverty reduction as related to food justice (Anderson & Cook 1999). The identification of these different types of practitioners, and the variation of focus priorities in this field, shows the importance of interdisciplinary connections in community food system planning ideology.

2.3.3 Local and Alternative Food Systems

The historic de-coupling of the food system from the forefront of city planning can be traced to the loss of connection between urban and rural systems (Kaufman & Jongman 2004). Over time, food production, and subsequently the food system in its entirety, became designated primarily as a “rural issue.” Meanwhile, the growing global food system has led to increased imports of international (i.e., non-regional) food to urban centers. Today, public concern over the obesity epidemic, combined with the upsurge of the rural food “movement,” presents regional policy-makers with a unique opportunity to build connections between urban and rural spaces,
and to support regional economic development by promoting rural-urban producer-consumer linkages through the “local food system” model.

Local food systems emphasize the production side of the food system framework, highlighting the importance of food growers and sellers as essential components to the local economy, and touting local food systems as both healthier and more sustainable in comparison to the “dominant” global food system, in which food products are grown, assembled and sold across far distances, and where the location of food production is often disguised from the food consumer. Local food systems often struggle to compete in the global market, which can often provide food at substantially lower cost to consumers. According to food-system planners Kaufman and Jongman, local food systems are characterized as being more fragile and more diverse than the dominant global food system. In their article, Planning for the Local Food System in the United States, the authors write that local food systems “cannot change the dominant food systems, [but] a stronger planning system can help them to provide a more solid place on the market by filling in the gaps and making use of the movement towards healthy/sustainable food systems,” (Kaufman & Jongman 2004). Kaufman and Jongman write that enhanced local food systems will contribute to healthier eating practices, greater community food self-reliance, increased food security, and greater community control over the foods that they access and consume (Kaufman & Jongman 2004).
One development that has occurred within the food-system sphere is the polarity between the “local” food movement and “anti-hunger” organizations. Gottlieb and Joshi write about the complexity of the “supermarket issue,” noting that while the “grocery gap” is a major barrier to food justice in low-income urban areas, the chain supermarkets that provide affordable produce are components of the globalized food system. Cheap produce at large-scale grocery stores is shipped in large quantities from far distances, supplanting business from regional farms and often failing to provide local food retail options (Gottlieb & Joshi 2010).

The American framework of local and regional food production focuses on the re-investment of capital to small farms, and on the training of consumers about the benefits of local food systems, particularly in terms of supporting environmental preservation, public health, and the local economy. Increasing awareness of the location of food production, encouraged through “buy local” campaigns, has served to build a growing consumer appreciation for alternative food systems. Efforts such as the doubling of WIC or SNAP food coupons further support local food-affordability measures. Additionally, the creation of municipal and state food policy councils across the nation tends to support the collaboration of farmers, environmentalists and anti-hunger organizations in building alternative food-network programs and advocating for policy change. Food geographer Lucy Jarosz argues that “local food systems cannot be assumed to be uniformly ‘good’ or progressive,” and presents instead the Alternative Food Network (AFN) framework (Jarosz 2008). Jarosz defines the AFN similarly to the local food model by
emphasizing shorter distances between food producers and consumers, with added attention to sustainable food production practices and food purchasing affordability and accessibility through the integration of food cooperatives, farmers markets, CSAs and farm-to-institution models (Jarosz 2008).

In support of the value of the AFN model, food system economist and planner Alfonso Morales writes about the unique role that markets (public markets, farmer's markets, etc.) can play in supporting economic development of regional food systems. Morales states that markets and marketplaces are central to the development of American political and economic arenas, and can serve as valuable supports for food-system expansion, place-making, and community-based economic development. He argues that market development increases sales, not only within the domain of the market itself, but also for neighboring businesses through spillover impacts and the growth of a multi-scaled economic environment. Further, markets connect food purchasers to food producers on a direct and personal scale, which encourages citizen advocacy for regional farmland protection and other environmental or land-use policies that support small farms. In addition, while farmers’ markets are often perceived as catering to the upper and middle classes, Morales writes that markets can also potentially serve to counteract the “food imbalance” of inner-city food deserts, thus supporting important food justice and public health goals (Morales 2011).
2.4 Food System Planning

Section three of Chapter Two, *Defining Food Systems*, outlines the ways in which food in the United States is produced, packaged, transported and sold within a politically fragmented system. As the dichotomy between urban and rural areas grows, the relationship between urban dwellers and the origin of their food supply weakens. Thus, addressing the food system on a regional scale can serve to not only strengthen regional food system networks and processes, but can also unite urban and rural populations and areas around shared goals. As increased regional awareness is brought to food within a systemic framework, city and regional planners can move towards increased involvement in the promotion of local, healthy and sustainable community food systems. Across the country, planners are beginning to promote existing or future opportunities for local, regional, urban or rural agriculture policies directly into master plans. Practitioners and academics across the globe are joining forces to support the validity of the emerging focus on food-system planning. Food-system planning can support food retail mapping, and the subsequent advocacy for increased access and transportation to grocery stores that sell produce and other non-processed foods. Food-focused urban and regional planning can support rural agricultural preservation, urban agriculture, and community gardens through comprehensive zoning regulations. Further, when planning for the cycle of food as part of a connected system, large-scale waste disposal regulation can encourage the completion of a closed-loop system within municipal or regional guidelines. In short, as system organizers, planners are
uniquely positioned to help connect the food system across each segment of the system's process and functionality.

University of Wisconsin Professors Pothukuchi and Kaufman were early adopters of the concept of including food systems within planning, and remain leading experts in the field. In their 1999 article, *Placing the Food System on the Urban Agenda*, they outline four major factors leading to the lack of food-system awareness in the planning field. First, their research demonstrates that in the 1990s the food system was generally taken for granted by planners, and that issues of access, availability and affordability were not clearly established as planning concerns. Second, they argue that the historic development of urban expansion in contrast to rural areas has resulted in the common perception that food is a “rural” and not an “urban” issue. Third, they expose the high accessibility of produce in large-scale grocery stores as masking local farmland demise. Fourth, they cite the top-down implications of federal policy distinctions that segregated urban and rural policies and subsequently influenced the planning field (Pothukuchi & Kaufman 1999). Pothukuchi and Kaufman describe the lack of integration within the food system in the 1990s metaphorically, writing that, “knowledge about the city's food system is like the proverbial elephant and the six blind men – each describes the whole by the part they know best” (Pothukuchi & Kaufman 1999).

According to Pothukuchi and Kaufman, planning is an ideal discipline to take on food-system issues because, “planners have the professional expertise and
community-oriented and interdisciplinary perspectives that potentially could strengthen community food systems and food system planning,” (Pothukuchi & Kaufman 1999). They argue that planners could strengthen comprehensive food systems by collecting and mapping preliminary data, supporting public-private partnerships, and linking food issues to other planning concerns such as infrastructure regulation, land-use allocation and water management. In a 2004 article about community food security, Pothukichi outlines seven core justifications for the importance of planners’ engagement in community food systems. Her rationales include the following:

1) Urban planners are trained to work with, and to understand the function of, communities as an entity.

2) Planners are able to analyze the spatial dimensions of community needs and to translate these into spatial and land-use policy suggestions.

3) Planners are trained to conceptualize, collect, organize, and disseminate information about communities to both inform policies and to evaluate their outcomes.

4) Planners can serve as mediators, and are often linked to decision makers and decision arenas spanning public, private, and nonprofit sectors.

5) Planners are trained to lead, facilitate, and manage community-based group processes involving stakeholders, organizational partners, and community residents.
6) Planners are interdisciplinary by training, and have the capacity to identify and analyze community concerns at the intersection of differing disciplines.

7) Planners seek to support overarching goals including healthy communities, sustainability, and improving quality of life. (Pothukuchi 2004)

When Pothukuchi and Kaufman published their first food-system-planning article in 1999, no local planning agency in the United States had comprehensively examined their community's food system. A survey conducted by the pair at that time found seven overarching categories of explanation for minimal planner involvement in food-system issues; categories included a lack of education in the field, a lack of funding, practitioner confusion about potential partners and allies, and an overwhelming perception that food systems were not part of the planning domain.

Twelve years later, much has changed. The importance of food-system planning has been recognized and validated within both the academic and practice areas of planning, spearheaded in part by the American Planning Association (APA). In 2007, with support from Kaufman, the APA published a policy guide on community and regional food-system planning, encouraging municipal and regional planners across the nation to engage in various aspects of food-system planning. In addition, the 2011 national APA conference was crowded with food-system planning panels and workshops encouraging planning students and new and seasoned planners to engage in food-system issues. Simultaneously, the APA is currently in the process of investigating the state of food-system planning practices across the country,
surveying the food-related efforts of municipal and regional planners nationwide. This study is yet to be released.

2.5 Community Planning: Coalitions and Collaborations

At its core, planning is a community-centered field. Yet, the role that community groups, organizations and individuals have played in the development of planning practice is largely contested, and varies greatly throughout history. The major revolution regarding the role of community participation in planning occurred in the 1960s, along with much political change and activism at that time. Sherry Arnstein, chief advisor on citizen participation for the United States Department of Housing and Urban Development 1960s-1970s Model Cities Program, developed the well-known model of the “Ladder of Citizen Participation” (Figure 2.5-1). Arnstein’s ladder of participation defines eight forms of community participation within three sub-categories. According to Arnstein, only the top three forms of community participation demonstrate true collaboration. Arnstien’s 1969 article warned planning and government practitioners against the dangers of excluding or tokenizing citizen participation, positing that citizen participation is an essential component of citizen power as it is “the redistribution of power that enables the have-not citizens, presently excluded from

Figure 2.5-1 Arnstein’s Ladder of Citizen Participation (Arnstein 1969)
the political and economic process, to be deliberately included in the future,” (Arnstein 1969). Overall, the planning world of the 1960s and 1970s retained a high value for community participation and both supported and promoted strong community participatory processes (LeGates & Stout 2003).

The economic recession of the 1980s, however, shifted the focus within the field of planning away from community participation and instead towards economic development trends. In the 1980s the political perception of citizen participation was that it was time-consuming and costly. Many city planners at this time gave token attention to community participation, but the majority found community involvement to be a hindrance, rather than a contribution, to the planning process. Community participation in the 1980s was seen as a disorganized and problematic barrier to the necessary and timely goals of strategic planning and policy change (Day 1997).

The 1990s demonstrated a shift in planning theory towards increased consensus building, with planners serving as political mediators for the public. The later 1990s tended to focus away from community engagement, however, due to the concern that, with increased engagement with the public, planners were losing their credibility, authority and power (Schon 2000). In the new century, the field of city and regional planning is at a crossroads. Traditional community participation methods in planning clearly do not achieve genuine community participation, nor do these processes serve to support outcomes that are necessarily appropriate for the
community. Most significantly, the majority of the public are not involved in the planning processes that will impact their communities; and those who are involved usually are not representative of the entire population (Innes & Booher 2000).

In their article *Public Participation in Planning: New Strategies for the 21st Century* the authors Innes and Booher outline the different forms of community participation in planning. The authors argue that confusion about the role of public participation in planning stems from four different models of planning practice which they distinguish as: the technical/bureaucratic model; the political influence model; the social movement model; and the collaborative model. Each model of planning approaches and utilizes the role of public participation differently (*Figure 2.5-2*). The method of planning highlighted by Innes and Booher that lends itself most appropriately to comprehensive community participation is Collaborative planning. The authors write that the collaborative approach is the “least privileged, the least recognized and the least understood” but that “it is the *only* method of planning and public involvement that is flexible, responsive and adaptive enough to be effective in the uncertain and rapidly changing environment of the turn of the 21st century,” (Innes & Booher, 2000).
2.5.1 Collaborations for Food System Planning

In her 2004 article on Community Food Systems, Pothukuchi writes that the “community,” as an entity in and of itself, serves as a valuable asset in food-system change. She writes that community planning is essential to systematic change and that planners particularly need to heighten their awareness of the possible negative implications of “routine planning practice” on community food security and food-system outcomes. She explains that, “Community food planning is a relatively new field; few shared understandings exist among community members of concepts, analytic frameworks, current states, preferred goals, and conceptions of future states of entire systems,” (Pothukuchi 2004). Pothukuchi outlines the assets found in the collaboration of communities and planning agencies around food-system change. She explains that community and planning collaborations tend to focus more comprehensively on needs of low-income residents, highlighting the equity and social-justice implications of limited food access for residents excluded from the
dominant food system. In addition, Pothukuchi argues that collaborative practices support increased food-system sustainability by closing the gap between food production and consumption and waste disposal within community settings, and also by supporting comprehensive community food-system education (Pothukuchi 2004).

An asset-based and collaborative approach to community food-system planning can connect, modify and improve resources and community capacities. Assets in this scenario may range from tangible goods such as space, equipment and transportation, to system-based features such as existing programs, policy frameworks, organizational capacity, networks and social capital. Community and planning partnerships can be essential to best locate and utilize these resources. Planners can support community groups through comprehensive assessment and resource inventory mapping, such as locating potential gardening space or researching supermarket accessibility. Further, planners can support community groups by facilitating partnerships with local government entities, and by garnering political backing for community food-system advocacy. Yet, planners cannot act in a vacuum. Comprehensive change in local and community food systems requires deep community roots and substantial community participation. Ultimately, community-driven change will have the greatest impacts on system modifications, and planner-community organization collaborations can serve to strengthen and expedite those changes. The largest assets that a regional food system has, in addition to the land and space available to grow food, are the motivations of
community members and community organizations to uphold and maintain their regional food system. This thesis research makes the case that regional planners would be wise to work in sustained partnerships with food-related community organizations in order to develop and preserve a durable and viable regional food system.

2.6 Conclusions

This literature review aims to highlight the current state of the American food system, and the resulting environmental, health and economic consequences. An overview of food-system concepts and connections is provided here to identify possible alternate food system models and potential outcomes. The role of community involvement, community partnerships and planning-community collaboration is emphasized as an essential pathway to the creation of sustainable community-based food-system change. Based upon this review, the remainder of this thesis provides an in-depth examination of the current state of the Pioneer Valley food system and offers suggestions for future collaboration between municipal and regional planning agencies and community-based organizations in order to most deeply assess and influence the current food system. Woven through the remainder of this research is an emphasis on the role of developing community-planning partnerships and establishing long-term, equitable and sustainable regional food-system change with a focus on food-sovereignty and food-justice goals.
CHAPTER 3

THESIS METHODOLOGY

3.1 Institutional Review Board (IRB) Process

On May 9, 2011, an application was submitted to the School of Public Health and Health Sciences Local Human Subjects Review Board for Institutional Review Board (IRB) approval. Particular documents submitted included the project abstract, a certificate of appropriate human subjects training, University of Massachusetts, Amherst Informed Consent documentation, the survey tool and recruitment materials. On May 20, 2011, the University of Massachusetts School of Public Health and Health Sciences Human Subjects Review Committee approved the research after expedited review under 45CFR46.110(b).

3.2 Survey Development Process

The development of the survey tool created for this project reflects a combination of the various models available for public access at the time of this research. Planning models and guideline tools to support the implementation of comprehensive food-system planning began appearing across the nation in the late 2000s, and the survey tool is built on an aggregation of various formats of these models. The survey tool is segmented by food-system component as follows: overall food system; food production; transformation; distribution; acquisition; consumption; and waste. This segmentation served to streamline the interview process, allowing the interviewer
to skip sections not relevant to a particular organization's focus or topic area. The survey was designed to uncover trends and highlights focused on the innovations, barriers and connections of organizations involved in food-system change within the Pioneer Valley region. The creation of the survey relied on insight from across the planning field, encompassing questions related to land use, community development, economic development, transportation, environmental protection and social equity. For each food-system component the survey tool is further subdivided into two sections; information gathering (reviewing the assessments, data gathering, inventories and mapping that have been previously completed or the information that the organization would like to receive); and programs and policy change (examining the various projects, programs or legislative action that the organization has enacted or would like to implement).

3.2.1 Food System Planning Models

The survey tool used was developed through the aggregation of five different models developed across the country. Four of the models are food-system models used in regions across North America over the last five years; the fifth is the American Planning Association's national food-system policy guide. While there is significant overlap in the tools utilized, each model provides insight to the food system through a different lens and approach. The survey created for this research study was designed to support a comprehensive analysis of regional food-system
change by incorporating all of the measures deemed appropriate or applicable to the Pioneer Valley region.

The five models used to develop this survey tool include the Urban Food System model developed for the city of Los Angeles, California (Cassidy & Patterson 2008), the Rural/Agricultural model developed for the state of Iowa (Tagtow & Roberts 2011), the Regional Food System Planning model developed for the Delaware Valley region by the regional planning agency (DVRPC 2010) (DVRPC 2011), the Community Health Food System model developed for the region of Waterloo, Ontario, by the regional department of Public Health (Miedema & Pigott 2007), and the National Policy Guide on Community and Regional Planning published by the American Planning Association in 2007 (APA 2007). These models were chosen as templates because they incorporate both urban and rural systems, and because they represent a cross-section of planning, public health and public policy frameworks. Each model is outlined in further detail below.

**The Urban Food System Model** (Cassidy & Patterson 2008)

The University of Southern California School of Policy, Planning, and Development’s Center for Sustainable Cities developed *The Planner’s Guide to the Urban Food System* in January 2008. This model is based on the basic elements of the traditional food system (production, distribution, acquisition, consumption and waste), and highlights opportunities for improvement and advocacy to encourage the engagement of urban and regional planners in food-system change. The model
examines the inputs and outputs that occur at each segment of the food system, and highlights opportunities to improve entrepreneurial expansion, cultural integrity, access and equity, nutrition education, decreased reliance on fossil fuels, clearer air, water and soil, and a closed-loop waste-cycle.

The Rural/Agricultural Model (Tagtow & Roberts 2011)

The report, *Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities*, was published by the state of Iowa as part of a W. K. Kellogg Foundation food and community grant in February, 2011. This publication provides a “Report Card” for the state of Iowa’s food system and recommends programmatic and policy opportunities for improvement across different food-system sectors including: Production; Transformation; Distribution, Marketing and Retail; Food Access and Consumption; and Waste Management. The publication provides a “blue print” for the state’s food system based on “report card” ratings of four identified domains (the economy; the environment; fair food and farming; and food access and health) within each food-system sector. Based on the ratings outlined above, the publication identifies a composite “grade” for the state’s system, provides crosscutting and sector-specific policy recommendations, and describes program opportunities and potential partnerships and collaborations to strengthen the food system of the state.
The Regional Planning Model (DVRPC 2010) (DVRPC 2011)

In April of 2010 the Delaware Valley Regional Planning Commission (DVRPC) published their Food System Planning Implementation Tool, accompanied less than a year later by their Master Food System Plan for the greater Philadelphia area titled, “Eating Here.” These two documents highlight the DVRPC approach to food-system planning, which emphasizes an informed decision-making process and encourages sustainable food production, improved access to healthy food, support for the local food economy, and minimizing or reducing of food waste. The DVRPC implementation tool provides a variety of strategies for planners to target and improve the food system on a regional scale, and highlights examples of best practices across the country. The greater Philadelphia Food System Plan discusses the application of the implementation tool as it relates specifically to the greater Philadelphia region, based on the following indicators: Farming and Sustainable Agriculture (land production and farming profitability); Ecological Stewardship and Conservation (surface water quality and farmland preservation); Economic Development (food system employment and farmworker conditions); Health (healthy food purchases and health of residents); Fairness (affordability of healthy food and food security); and Collaboration. For each indicator listed above, the Philadelphia Plan outlines various recommendations for policy reform, the expansion of existing efforts, and opportunities for new approaches or innovations that support regional food-system change.
The Community Health Model (Miedema & Pigott 2007)

In April of 2007 the Department of Public Health in Waterloo, Ontario, published a Healthy Community Food System Plan. Distinct from a planning-based model, the Waterloo model highlights the intersection of public health, community food systems and land use planning. While the overall goals and objectives are similar to planning-based models, the process is unique. The Waterloo process focuses on the health outcomes of the food system, and does so using a distinctly community-health focused framework. The Waterloo objectives include: ensuring that all residents can afford to purchase the foods that they need to maintain and sustain health; encouraging the preservation and protection of the region’s agricultural lands; strengthening food-related knowledge and skills among consumers; increasing the availability of healthy foods so that healthy food choices are easier to make; increasing the viability of farms that sell foods to local markets to preserve rural communities and culture; strengthening the food economy; and forging dynamic partnerships to implement the final plan.

The Food System Policy Guide (APA 2007)

In May of 2007, the American Planning Association (APA) published the Policy Guide on Community and Regional Food Planning. This guide was created due to internal political pressure (particularly from faculty at the University of Wisconsin, Madison) to increase the involvement of the planning community in food-system organizing and outcomes. The Policy Guide serves to provide background information and a rationale for the inclusion of food-system efforts in planning practice, as well as
outlining specific policy-based goals and objectives. The APA tool outlines seven general polices for increasing the integration of food into current planning practice and supporting systematic, comprehensive community and regional food planning. The seven umbrella categories identified in the guide include: supporting a comprehensive food planning process at the community and regional level; strengthening the local and regional economy by promoting community and regional food systems; supporting food systems that improve the health of the region's residents; supporting food systems that are ecologically sustainable; supporting food systems that are socially equitable and just; supporting systems that preserve and sustain diverse traditional food cultures of Native American and other ethnic minority communities; and developing state and federal legislation that facilitates community and regional food planning and addresses existing barriers. Each umbrella category is accompanied by additional specific policy recommendations and planning strategies.

3.2.2 Survey Compilation and Review

The final survey tool was created as a compilation of the programs and policies outlined in the models above, and informed by information gathered in the literature review process (see Chapter 2: Literature Review). At the request of the Pioneer Valley Planning Commission's (PVPC's) Clean Water Program, questions regarding local fishing practices were added to address concerns regarding the consumption of fish caught in contaminated waters. Notably, information regarding the production or consumption of food grown in water, as opposed to land, is largely
absent from the mainstream of food-system planning practice, marking further opportunities to improve comprehensive food-system discourse. After further faculty review an additional question was added to capture information relating to hunting, trapping, foraging and other policy measures relating to access to natural foods. The final survey has a total of 8 sections and 42 questions.

The draft survey tool was completed on June 13, 2011, and submitted to the thesis committee faculty and PVPC Food Security Program staff for comments and review. The survey was piloted on June 17, 2011, with staff from a community organization heavily involved in both food-system program planning and policy change efforts within their community as well as across the region. Following the survey pilot the wording of several questions was altered to improve clarification, though no major questions were added or removed. In addition, following the pilot interview the format of the survey tool was improved in order to enhance the clarity of the question flow, and to streamline the interview process. Based on the pilot interview process, an open-ended section was added to the survey to allow space for additional anecdotes, feedback and stories. The remaining interviews took place from mid-July to early August 2011.

3.3 Survey Subject Selection

The focus area for this study is the Pioneer Valley of Western Massachusetts, including Hampden, Hampshire and Franklin Counties. The assessment survey was designed to provide a qualitative analysis of the efforts of community-based
organizations seeking to address and improve the Pioneer Valley food system at all levels. While the information collected is not meant to provide a complete analysis of all organizations involved in food-system change within the region, it is intended to provide a balanced and overarching perspective, with attempts to include as many diverse organizations as possible.

The initial list of potential interviewee organizations was chosen from the contact list of the Pioneer Valley food-system networking organization, PVGrows. PVGrows describes itself as “a collaborative network dedicated to enhancing the ecological and economic sustainability and vitality of the Pioneer Valley food system,” and retains a membership of over 65 different food-related organizations and agencies within the Pioneer Valley region. PVGrows members focus on a wide array of food-system-related issues, spanning local food infrastructure and financing, food access and community health, and agricultural land preservation. Notably, PVGrows is a membership organization, free to join, that promotes itself widely across the region as an inclusive network of organizations and agencies involved in various unique and complementing areas of the local food system. The self-selection of organizational membership to PVGrows offered an ideal baseline from which to select survey recipient organizations for the purposes of this research study.

Organizations were selected from among the PVGrows list based on the criteria that they aim to accomplish program and policy change outcomes impacting local or regional food-system development or food security measures. Notably, not all
PVGrows members are oriented towards policy change; thus, only the relevant organizations were selected. Many of the PVGrows member organizations are small-business independent farms. Due to the policy-focused nature of the research goals, specific farms and farmers were not interviewed, with the intention that interviews with the organizations that assist and support the region’s farms will adequately represent farming perspectives and needs.

A list of 28 organizations with diverse locations, sizes and scopes, was submitted to the PVPC Food Security Advisory Committee for review on June 20, 2011. Based on the suggestions and feedback from the Advisory Board, a final list of 24 organizations (including the pilot organization) was selected for the interview process. Several of the organizations selected additionally serve on the PVPC Food Security Advisory Board, though the majority does not. A total of 21 organizations representing diverse locations and programmatic scopes were interviewed in this research study. The geographic scope of the final list of organizations interviewed includes: New England (1); Massachusetts (3); Western Massachusetts (6); Franklin County (1); Hampshire County (1); and Hampden County (9). The focus areas of the final list of organizations interviewed include: Agriculture & Food Processing (3); Farm-to-School and School Food (2); Farmland Preservation (2); Food Access and Social Justice (6); Sustainable Farming/Gardening (3); Workforce and Community Development (4); and Connecting the Food System (3). Thus, the final list represents a wide array of organizations across the region and serves to increase connectivity among them all.
3.4 Survey Scheduling and Interview Process

With the exception of the pilot organization, which was interviewed in late June, the remaining 23 organizations selected for interviews were contacted by both phone and email during the week of July 4, 2011, to schedule interview meetings. Seven of the 23 organizations responded to the initial outreach, and 13 additional organizations responded after further follow-up communication. A total of 20 out of 23 selected organizations were interviewed between the dates of July 11 and August 9, 2011. With the inclusion of the pilot interview, a total of 21 interviews with 24 people were conducted in June, July and August 2011 for this research project.

All organizations received the survey tool prior to the interview, in order to best prepare and utilize time efficiently. All interviewees signed the IRB consent form prior to beginning the interview. Some on-site photographs were taken, to help support the work of the Pioneer Valley Regional Food Security Initiative, though no individuals were photographed. 18 of 21 interviews were audio recorded, with the three non-recorded interviews occurring as the result of either interviewee preference or technological difficulties. Notes were taken both during and immediately following the non-recorded interviews to best capture the information presented. The audio recordings were stored electronically for data entry.

3.5 Data Entry

The interview data were recorded in a MS Access database created for this purpose. The database contained distinct sectors for each food-system survey segment,
allowing data analysis to focus both across the food system as a whole, as well as within specific food-system sectors. An automated unique identifier was created for each interview, serving to maintain the confidentiality of each organization in the raw data format and to provide organizational consistency across food-system sectors.

All data were entered manually into the MS Access database. Audio-recorded interview data were entered following the survey and interview flow, and while some direct quotes were copied, the entire interview was not transcribed. The data from non-recorded interviews were entered similarly, following the survey and database flow, and based on the previously recorded notes.

All survey questions were categorized as either data-related or program/policy-related questions, with distinct numerically coded responses. Many survey questions contained sub-questions, coded similarly. If an organization’s response to the main question was “No” or “0”, all sub-questions for that specific question were coded as a “99” meaning “Not Applicable” or “Missing.” Data coded as “99” were not included when calculating overall rates and scores. For definitions of the data codes, see Table 3.5-1 below.
### Table 3.5-1 Data Related Data Coding

<table>
<thead>
<tr>
<th>CODE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No, do not have this information and not interested at this time</td>
</tr>
<tr>
<td>1</td>
<td>Yes, have collected or are in the processing of collecting this information</td>
</tr>
<tr>
<td>2</td>
<td>Would like to collect, do not have this information but would like to collect this information in the future</td>
</tr>
<tr>
<td>3</td>
<td>Would like to receive, do not have this information but would like to receive it</td>
</tr>
<tr>
<td>4</td>
<td>Know how to get this information if wanted</td>
</tr>
<tr>
<td>5</td>
<td>Slightly interested in this information, but not a major priority</td>
</tr>
<tr>
<td>97</td>
<td>Other</td>
</tr>
<tr>
<td>98</td>
<td>Don't Know</td>
</tr>
<tr>
<td>99</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

### Table 3.5-2 Program or Policy Related Data Coding

<table>
<thead>
<tr>
<th>CODE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No, not involved in these efforts and not interested at this time</td>
</tr>
<tr>
<td>1</td>
<td>Yes, very much involved in this work or advocacy</td>
</tr>
<tr>
<td>2</td>
<td>Would like to be involved in this work in the future, are unable at this time due to logistical, staffing, financial or other barriers</td>
</tr>
<tr>
<td>3</td>
<td>Peripherally involved in this work or advocacy, but not a major priority at this time</td>
</tr>
<tr>
<td>4</td>
<td>Partner with other agencies or organizations that are involved in these efforts, but outside of the organization mission/scope</td>
</tr>
<tr>
<td>5</td>
<td>Had not previously considered this option, will think about this more for the future</td>
</tr>
<tr>
<td>97</td>
<td>Other</td>
</tr>
<tr>
<td>98</td>
<td>Don't Know</td>
</tr>
<tr>
<td>99</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
In addition, each survey question contained a text field for data entry of meaningful or relevant quotes, and/or other important or explanatory information.

### 3.6 Data Analysis

For data analysis, the data entered in MS Access were transported to SPSS statistical software. Numerous queries were run in SPSS to determine rates of interest across food-system sectors. If more than 50% of organizations were involved in a specific program or policy activity, those were marked as “food system assets” and explored further. If less than 50% of organizations were involved in a specific program or policy activity, those were labeled as “food system barriers” and also explored further. The results and recommendations provided in *Chapter 4: Assessment Results and Discussion* stem directly from this classification and organizational framework.

To develop an overview model of the food system, responses to each question were weighted, and an average overall score for the region was then calculated for each survey question. To determine the weighted score, a response of “1 - Yes, very much involved”, was given a score of “10.” Responses 2 through 4 (“Would like to be involved,” “Peripherally involved,” and “Partner with other agencies who are involved,”) were given a weight of “4”. All other responses (“Had not previously considered this option,” “Other,” and “Don't know,”) were given a weight of “0”. Survey questions with a response of “99 - Not Applicable/Missing” were not included in the averaging process. An average score for each survey question was
developed based on the weighted responses described above. The resulting overview model contains an outline displaying the level of involvement of organizations to improve the Pioneer Valley regional food system by food-system segment.

3.7 Results and Recommendations

Data analysis resulted in the identification of seven key program and policy assets for the region, areas with high levels of organizational support and engagement. Four core program/policy areas were identified as opportunities for improvement, based on medium levels of organizational involvement in combination with high rates of expressed interest in becoming involved with this topic in the future. Four core program/policy areas were identified as current barriers to the cohesion of a local or regional food system in the Pioneer Valley, based on low rates of organizational involvement in combination with a lack of interest in, or knowledge of, the subject area. Two subjects were categorized as requiring follow-up research. The responses to the twelve survey questions relating to data were discovered, in aggregate, to represent a regional barrier regarding food-system data awareness and information flow. These results are discussed further in Chapter 4: Assessment Results and Discussion.

Based on the results listed above, four recommendations were developed for the region to strengthen and enhance the current local/regional food system relying on the greatest assets identified, the organizations themselves. These results are
presented in *Chapter 5: Recommendations for the Region and Beyond*, along with implications for national planning and organizational food-related collaboration and suggestions for future research.
CHAPTER 4

FOOD SYSTEM ASSESSMENT RESULTS & DISCUSSION

4.1 Overview

An overview of the Pioneer Valley food system was created by a weighted averaging of the responses to the survey assessment questions by food-system segment, providing each segment with an overall rating of low, medium or high (Figure 4.2-1). In general, the agencies working in the Pioneer Valley are engaged in all of the major regional food efforts outlined in the assessment survey. In some sections, such as “Food Production ~ Urban” and “Food Distribution,” the average degree of involvement was quite high. In other sections, such as “Food Production ~ Other” which examines alternative food production (fishing or hunting), the degree of involvement is relatively low. Yet, an impression based on averages can be misleading. The average score for the “Food Production ~ Rural” segment provides an example of this finding. While the organizations interviewed scored extremely high on questions regarding rural food production programs and policies, the lack of involvement on the question relating to farm labor services and support resulted in a lower average score for the section as a whole. Thus, while an overview is an important component of the Pioneer Valley food-system narrative, further explanation is required to provide a comprehensive analysis in each system section.
4.1.1 Survey Results: Assets, Opportunities & Barriers

Across the Pioneer Valley, a variety of organizations are engaged in supporting different aspects of the local and regional food system, providing a wealth of assets and resources that strengthen the food system at each layer. The following section outlines the level of organizational engagement at each component of the food system including food production, transformation, distribution, acquisition, consumption, waste and overall system interconnectedness. Areas with high rates of organizational involvement are identified as core food-system assets for the region. Areas with a combination of mid-level organizational involvement and an
expressed interest in future engagement are identified as key regional opportunities for improvement. Areas with low rates of organizational involvement, and low levels of expressed interest in future involvement, are identified as core barriers to comprehensive regional food-system development. Recommendations to address these barriers are explored further in Chapter 5: Recommendations for the Region and Beyond. In addition, two areas are cited as requiring further research and analysis before conclusions can be drawn about these topics.

***Author’s Note: To complement the quantitative survey data, quotations from the interview process are shared within each of the following food system sections. Due to confidentiality measures, the source of the quotation must remain anonymous.

4.2 Survey Outcomes for Program & Policy Change

4.2.1 Food Production ~ Rural

"Is paying more for your produce than what you could get it for from a non-organic, non-local source, is that secure? I don’t know. It’s secure for the region. And it creates a farmer-consumer connection. And it keeps our beautiful valley productive and open, and if you could get on a bus you could see it. But is it food security? That’s what the guys in the Mid-West would say, and their answer would be ‘no.’ ‘We should be pouring more money into irrigation systems and drilling deeper wells and putting more money into the breadbasket,’ that’s what they would say. And I can’t disagree with them on a big scale. Unfortunately, I think this climate change thing is going to kick in, and those places, you can’t grow anything without water. So, right now we’re at the crossroads of the ‘feel good’ part of local agriculture, which has really taken us a long way in the last five years. A lot more people know more about their food, even in places like Holyoke and food desert areas. They can’t get it, but they know about it. So, to that extent, awareness is a good thing. But when it actually comes to that sustainable market connection between local production and local consumption, right now it’s based on value-added and boutique stuff. And it’s going to be really challenging to change the gears and get the prices down to where it competes.”
Table 4.2-1 Involvement in Programs or Policies Relating to Rural Food Production

<table>
<thead>
<tr>
<th></th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmland Preservation</td>
<td>33.3% (7)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>52.3% (11)</td>
</tr>
<tr>
<td>Environmental Protection Effort</td>
<td>33.3% (7)</td>
<td>9.5% (2)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>57.1% (12)</td>
</tr>
<tr>
<td>Farm Labor Support/Services</td>
<td>4.8% (1)</td>
<td>19.0% (4)</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>66.7% (14)</td>
</tr>
<tr>
<td>Farm Visibility Support/Services</td>
<td>23.8% (5)</td>
<td>14.3% (3)</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>52.3% (11)</td>
</tr>
<tr>
<td>Local Food Production Edu/Networking</td>
<td>66.7% (14)</td>
<td>23.8% (5)</td>
<td>0%</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>4.8% (1)</td>
</tr>
</tbody>
</table>

In general, the organizations interviewed display a moderate level of engagement in programs and policies relating to rural food production. Due to the variation of urban and rural food production needs, food-oriented organizations tend to focus their programmatic scope on either rural or urban production, though not both. Consequently, it is not surprising to find one-fifth to one-third of organizations engaged in various aspects of rural food production such as farmland preservation, environmental protection, and farm visibility support or services. The two major points of interest in this section are the high rate of organizational involvement in local food production education and networking, and the extremely low rate of involvement in issues relating to farm labor support or services.
"I would like to see better relationships with the urban areas with the rural, local farms. I think we could take better advantage of the farmer's markets, getting the vendors and residents involved. And doing bus trips. Not just with children but with adults. Go see. Go see where some of this food comes from."

4.2.1.1 Local Food Production

Over 90% of the organizations interviewed were involved in local food production education or networking, determined by combining the percent of organizations that are both highly and peripherally involved in these activities (Table 4.2-1). A high rate of involvement in local food production efforts is not overly surprising, as local food networking represents a component of the identification used to select the organizations interviewed. However, the depth of agency participation in local food production education and networking provides an important and solid platform upon which to sustain and promote the entire regional food system of the Pioneer Valley. Based on this assessment, a high rate of organizational engagement in local food production education and networking forms one of the core Pioneer Valley food-system assets.

4.2.1.2 Farm Labor Support or Services

"[What] we and other people have found is that the needs of food-based businesses that are dedicated to working on local foods in a seasonal climate face a lot of needs that traditional lenders are not used to seeing. Their business models will look different than what traditional lenders are used to seeing. So, they'll have a big seasonal labor demand and managing with that. Or the challenge of how to store product year round that's primarily being produced in a certain season. So, there are some intricacies that people need to be aware of those in order to assess the economic viability of this."
Over two-thirds of the organizations interviewed are not involved, and *do not want to be involved*, in issues of farm labor protection or services (*Table 4.2-2*). The Pioneer Valley has a substantial migrant farm worker population that faces significant health, housing and environmental hazard concerns. While there may be organizations in this region that do address these issues, the agencies interviewed were not engaged in this topic, nor did they partner with agencies that are. Providing adequate farm worker support and services is an extremely important component of a regional food system, and is notably absent from the Pioneer Valley framework. In addition to the gap that this represents in terms of food production, the uncertain legal status of farm workers often places them in positions where they face increased risks of poverty and food insecurity (Gottlieb & Joshi 2010), positioning this topic as a significant gap in food access and consumption measures as well. Thus, the lack of comprehensive farm labor support or services in the Pioneer Valley results in a major barrier for the development of an inclusive regional food system.

4.2.2 Food Production ~ Urban

"*When I started looking for land, it was hard to find land in Hampden County. I mean, there were people in Hampshire and Franklin and Berkshire County offering us land, but that is too far. And some of the land that got offered was not optimal. So, we really lucked out at this new site. It’s a beautiful, prime farmland piece, and it’s like the only one left in West Springfield. But, because of that, also, he can ask the going rate, and it’s higher in Hampden County for rent. So, in general Hampden County needs more advocacy for farmland, for farmers, and for buying local. I mean it’s coming, it’s definitely here, but it’s lagging behind.*"
Analysis of the assessment data shows high degrees of involvement and/or organizational support for efforts relating to urban agriculture and community gardens. Local food-production education and networking, discussed previously in the rural food production section, is also listed as an urban food concept because local food networking spans rural and urban areas. Notably, very few organizations are engaged in programmatic, legislative, or zoning issues relating to regulations on residential livestock (Table 4.2-2).

“Our primary goal is not just to provide people food, but to provide them with the tools to grow their own food: the inspiration, the plots of land for developing community gardens, and educational workshops that take place on our farmers land.”

Table 4.2-2 Involvement in Programs or Policies Relating to Urban Food Production

<table>
<thead>
<tr>
<th></th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Urban Agriculture</td>
<td>38.0% (8)</td>
<td>23.8% (5)</td>
<td>0%</td>
<td>9.5% (2)</td>
<td>0%</td>
<td>28.6% (6)</td>
</tr>
<tr>
<td>Support Comm. Gardens</td>
<td>47.6% (10)</td>
<td>14.3% (3)</td>
<td>0%</td>
<td>9.5% (2)</td>
<td>0%</td>
<td>28.6% (6)</td>
</tr>
<tr>
<td>Residential Livestock Ord.</td>
<td>14.3% (3)</td>
<td>14.3% (3)</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>57.1% (12)</td>
</tr>
<tr>
<td>Local Food Production Education &amp; Networking</td>
<td>66.7% (14)</td>
<td>23.8% (5)</td>
<td>0%</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>4.8% (1)</td>
</tr>
</tbody>
</table>
4.2.2.1 Community Gardens and Urban Agriculture

"One thing that we're trying to do is to get the city council to pass an ordinance that we look at vacant land and promote community gardens. Of course we need to make sure that they're not a brownfield and make sure that they're clean. And the other thing that I would like to see put in there is that the city puts resources towards helping it be maintained. Because it is one thing to say 'oh sure, you can have a community garden' and it's another to help that garden be maintained."

Over 70% of organizations interviewed are either actively involved, peripherally involved, or partnering with other organizations who are involved in creating, maintaining and supporting community gardens. Similarly, over 60% of organizations interviewed were either actively or peripherally involved in supporting urban agriculture (Table 4.2-2). The efforts to provide and promote community gardens in urban and semi-urban areas across the region not only provide food for gardeners and small-scale farmers, they also help to impart the message to the community that food can be grown in a variety of locations. Increased exposure to spaces where food is being grown helps to build connections for food consumers about the origins of food and the distinctions between produce and highly processed food products. High levels of support for urban agriculture and community gardens demonstrated by organizations across the region provide a core food-system asset for the Pioneer Valley.

4.2.2.2 Residential Livestock

Very few organizations are engaged in programmatic, legislative, or zoning issues relating to regulations on residential livestock (Table 4.2-2). Many organizations
interviewed expressed concerns that this subject was too complex to pursue, or that they weren’t fully educated on the health implications or other potential hazards of residential livestock. Thus, follow-up research and education on this topic is recommended to further explore options for implementation of this subject.

4.2.3 Food Production ~ Other

Table 4.2-3 Involvement in Programs/Policies Relating to Alternative Food Production

<table>
<thead>
<tr>
<th></th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishing Advocacy or Education</td>
<td>19.0% (4)</td>
<td>9.5% (2)</td>
<td>0%</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>61.9% (13)</td>
<td>0%</td>
</tr>
<tr>
<td>Alternative Food Production</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>0%</td>
<td>9.5% (2)</td>
<td>71.4% (15)</td>
<td>4.8% (1)</td>
</tr>
</tbody>
</table>

In the majority of food-system contexts, food production is considered to include products that are grown, on purpose, in soil. When considering alternate forms of food production, such as fishing, hunting, trapping or foraging for food, most organizations interviewed found these concepts to be outside of their organizational scope. While the peripheral nature of alternative food options may be inherent to the lack or organizational involvement, it is important that alternative food production implications not be ignored. Thus, in order to promote a truly
comprehensive regional food system, a conceptual shift broadening the definition of food production should include alternative forms of collecting food.

4.2.3.1 Fishing Advocacy or Education

"Fish is a free source of protein for folks locally, so right now the Connecticut River is not a sustainable source of food - in fact it's poisoning people. So, by trying to shut down Mt. Tom we're trying to clean up the Connecticut River and make that once again a source for people to fish from, and give them a free source of protein."

In addition to hunting, trapping, and foraging for food, fishing is a particularly important topic to the Pioneer Valley region due to the proximity of the Connecticut River. Local fish can provide a valuable source of protein, as fish is a food resource that is both plentiful and free. However, the Connecticut River contains fish that are not edible due to contamination by E. coli, Methyl Mercury, and other toxic chemicals. In this way, the act of fishing transitions from a food-system asset as a form of free protein, into a public health hazard. Addressing environmental advocacy and public health education regarding fish is an important component of strengthening the Pioneer Valley regional food system. Yet, the majority of organizations (61.9%) are not involved, and not interested in becoming involved, in efforts of fishing advocacy or education (Table 4.2-3). Thus, attention to issues of fishing demonstrates a core barrier in the development of a comprehensive food system in the Pioneer Valley.
4.2.4 Food Processing

"The [pickle] company was bought by a big mid-western pickle manufacturer, that was going to close the plant, because they've got plenty of capacity in the mid-west to grow this stuff. The key growers in the area, who had bought very expensive equipment to grow this stuff, to grow large enough crops to supply that plant, and for whom that plant was 90% of their market. Four or five of them got together and said - let's see if we can buy this facility, and we will own the facility and we will process our own product, we already know how to grow it and we will preserve our production market. And they did do that; they pulled it together with a lot of money from the state and others, loans and a lot of grants. Unfortunately, they had to sign a non-compete clause, and the non-compete stated that they couldn't do any retail packaging, because the company had retained the Cains brand. So, they could only do five-gallon pails and food service size packaging of the products. Virtually, at the same time that they bought the company, the economic climate started to fade - they bought it at the top of the market - and the thing that hit the hardest was food service, and they went out of business and that plant has since been torn down. And it's a big vacant lot in the middle of South Deerfield, I'm sure you don't even know it's there. But those of us who grew up around here or lived around here for a long time can remember that any where within ten miles of that plant in the fall it smelled like pickles. And it's gone now. The town is going to try to redevelop that property, but not for agricultural process."

"There is not a slaughterhouse in this area, and it's really difficult for us to travel four hours for us to bring the animals that we have on our farm to get slaughtered, so there definitely needs to be a slaughterhouse."

Table 4.2-4 Involvement in Programs/Policies Relating to Local Food Processing

<table>
<thead>
<tr>
<th></th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Small-Scale Local Food Processors</td>
<td>42.9% (9)</td>
<td>9.5% (2)</td>
<td>33.3% (7)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>9.5% (2)</td>
</tr>
</tbody>
</table>
One major opportunity for improvement identified in the data analysis is the support and promotion of the efforts of small-scale local food processing or transformation centers. While half of the organizations interviewed are currently involved in these efforts (Table 4.2-4, Figure 4.2-1 shown in light and dark green), a third of organizations interviewed expressed interest in either planning or wanting to get more involved in this area (Table 4.2-4, Figure 4.2-1 shown in tan). Of all the questions included in the food-system assessment survey, this question had the largest response in the “not currently involved, but want to get involved for the future” response category.

These results additionally indicate the importance of further research about the infrastructure needed to improve local food processing abilities. While some of that research is currently taking place, a pre-determined conduit of information would
help to provide research results to the organizations and agencies engaged in food-system efforts on the ground, particularly those that would like to get involved in these efforts in the future but may not know how best to do so. The high degree of organizational intention for future involvement demonstrates the need for increased education to support the agencies that are interested in becoming more involved, either by helping them to address food safety requirements and the ways that these regulatory barriers impact small-scale food processing, by providing or improving programs on food preservation, or by helping to further connect local food processing efforts with local food producers.

4.2.5 Food Distribution

"[We need to be] figuring out how to support better local distribution systems. Particularly, the restaurants and institutions have a fixed interest in this. And there certainly are plenty of restaurants that are buying local food and getting it delivered and that is working just fine for them. But, particularly there are restaurants that are interested in local food, but they're not buying a lot or making relationships with the farmers, and the question is how do you meet those demands? This is a need and an opportunity, but it's not at all clear about how this would be viable."
Table 4.2-5 Involvement in Programs/Policies Relating to Local Food Distribution

<table>
<thead>
<tr>
<th></th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Promote Local Food Distribution</em></td>
<td>76.2% (16)</td>
<td>14.3% (3)</td>
<td>0%</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>0%</td>
</tr>
<tr>
<td><em>Economic Development Programs/Incent.</em></td>
<td>52.3% (11)</td>
<td>14.3% (3)</td>
<td>14.3% (3)</td>
<td>0%</td>
<td>0%</td>
<td>19.0% (4)</td>
</tr>
</tbody>
</table>

The survey results demonstrate a high rate (over 90%) of organizational involvement in the support and/or promotion of local food distribution. The majority of organizations interviewed were involved in some aspect of promoting local food distribution including efforts such as “buy local” campaigning, local food labeling, supporting direct farm retail, and strengthening regional production and distribution networks (Table 4.2-5). Thus, promotion of local food distribution represents a core asset in the current Pioneer Valley food system that should be leveraged to further cultivate and strengthen food-system interconnectivity.

4.2.6 Food Access

“This is the third Saturday of the market so far, and so far there are more vendors, more people, more EBT use and more profit than in previous years. The vendors track all that they sell and report to [us] weekly … The need [for the market] arose due to a lack of food access in the area, because there was no full grocery store available, instead residents needed to take two buses to get there, one downtown and another up again. And it’s very difficult to travel with food, groceries, kids, etc. The residents wanted to have more choices for places to purchase fresh fruit and vegetables.”
Table 4.2-6 Involvement in Programs/Policies Relating to Healthy Food Access

<table>
<thead>
<tr>
<th>Incentive for Healthy Food Retail</th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>42.9% (9)</td>
<td>19.0% (4)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>0%</td>
<td>33.3% (7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Improve Healthy Food Access or Affordability</th>
<th>61.9% (13)</th>
<th>14.3% (3)</th>
<th>4.8% (1)</th>
<th>0%</th>
<th>0%</th>
<th>19.0% (4)</th>
</tr>
</thead>
</table>

| Food Assistance/Emergency Food | 19.0% (4) | 4.8% (1) | 9.5% (2) | 14.3% (3) | 0% | 52.3% (11) |

Over half of organizations interviewed are involved at some level in improving access to healthy food, addressing issues of healthy food affordability, or promoting incentives at a neighborhood, municipal or regional scale for the promotion and sustainability of healthy food retail options. Only one quarter of organizations interviewed, however, addressed issues of food assistance or emergency food (Table 4.2-6). The gap between improving access and affordability to food on a long-term scale and addressing short-term emergency food issues needs to be addressed as part of greater connectivity across the food system. The systemic disconnect regarding emergency food is discussed further in Section 4.2.9 – “System Interconnectedness.”
4.2.6.1 Healthy Food Accessibility and Affordability

75% of organizations interviewed demonstrated active involvement in improving healthy food accessibility and affordability (Table 4.2-6). These efforts include improving access to culturally appropriate foods, supporting WIC or SNAP coupon acceptance at Farmers Markets, addressing transportation barriers, and promoting local farm to institution purchasing legislation. Thus, efforts to address healthy food affordability and accessibility represent a core asset to the Pioneer Valley regional food system.

4.2.7 Food Consumption

"Everything we do, we look at the social determinants of health and the impacts that it has from a racial standpoint. So, how do we change policy? How do we change these systems that are so integrated that we don't even know we are perpetuating these issues? I think that more people of color need to be encouraged to enter into these fields from a racial standpoint. I can't find a black dietitian. We live in a world where people want to hear from someone who looks like them. It makes a difference. We need to get more people of color, Latina and Black, and we need start channeling those people into these fields, where they can make a difference."

Two-thirds of organizations interviewed are highly involved with healthy food preparation education or training, with almost 80% involved at some level, or planning to become involved (Table 4.2-7). Notably, over fifty percent of organizations focus on youth-specific food or nutrition programs (Table 4.2-7). Regrettably in retrospect, the survey did not include a question specific to programs for elderly populations. Several organizations interviewed do provide food-related programs targeted for the elderly population, although unfortunately the rate of
elder-focused program participation has not been captured in this study. Additional food consumption data analysis found that a minority of organizations interviewed was actively engaged in addressing unhealthy food media or in promoting drinking water (Table 4.2-7).

Table 4.2-7 Involvement in Programs/Policies Relating to Healthy Food Consumption

<table>
<thead>
<tr>
<th></th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Food Preparation</td>
<td>66.7% (14)</td>
<td>4.8% (1)</td>
<td>9.5% (2)</td>
<td>0%</td>
<td>0%</td>
<td>19.0% (4)</td>
<td>0%</td>
</tr>
<tr>
<td>Education/Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Youth-specific Food or</td>
<td>52.3% (11)</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>28.6% (6)</td>
<td>0%</td>
</tr>
<tr>
<td>Nutrition Programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address “Unhealthy” Food</td>
<td>23.8% (5)</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>61.9% (13)</td>
<td>0%</td>
</tr>
<tr>
<td>Media/Advertising</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promote Drinking Water</td>
<td>38.0% (8)</td>
<td>14.3% (3)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>42.9% (9)</td>
<td>4.8%</td>
</tr>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

80
4.2.7.1 Healthy Food Consumption and Preparation Education

"We don’t allow youth to bring sugar drinks into the garden space, and we provide them with water. We also don’t allow extra snacks. We don’t tell them not to eat it ever, just not to eat when they are in the space. And over time the youth develop a different relationship to food anyway, as a result of seeing how food is growing, and tasting it, and enjoying it. We don’t tell them what to do but let them arrive at their own decisions. They ‘get it’ when presented with the opportunity to develop their own opinions."

Over 70% of organizations interviewed provide or support healthy food preparation and consumption education (*Table 4.2-7*). These efforts include providing community-cooking classes, offering healthy food purchasing education, and conducting menu-literacy trainings. In addition, 9.5% of organizations interviewed plan or want to be involved in these efforts in the future (*Table 4.2-7*), demonstrating a clear opportunity for continued growth and development of healthy food consumption and preparation education within the Pioneer Valley food system. In this way, programs and policy-change efforts related to healthy food consumption and preparation education in the Pioneer Valley represent both regional food-system assets and continued opportunities for improvement.

4.2.7.2 Healthy Food Media

"This is social media. We’re getting across the healthy message. We provide cooking demos and food samples, all fresh and local, with an emphasis on culturally competent food, so that people can continue to eat what they like to eat, but can learn how to cook it in a healthier way."

Over 50% of organizations interviewed are not engaged in addressing unhealthy food media or advertising (*Table 4.2-7*). Pioneer Valley residents, particularly youth,
are surrounded every day with advertisements supporting a food mentality that is completely disconnected from an awareness about where food comes from, what it’s made out of, and how it impacts health. If an emphasis is not placed on education about the environmental and health impacts of the current global food system, the important message of local food promotion and education is going to be overshadowed. Thus, a lack of comprehensive efforts to address (un)healthy food media and advertising represents a major barrier in the development of the Pioneer Valley food system.

4.2.7.3 Promoting Drinking Water

"Also, [the tap] water doesn’t taste good. We need to do an assessment. Why does the water taste bad? Is it safe to drink? Are there ways to make it more palatable for people? Or to do education campaigns, you know – ‘drinking water is good for you, and good for the environment. And free. Save your money.’"

Over fifty percent of organizations interviewed are engaged on some level with the promotion of drinking water and expressed concern regarding access to clean and safe drinking water in their organizational target areas (Table 4.2-7). Suggestions to address and to improve rates of drinking water included regional and municipal tap water assessments and drinking water educational campaigns. Thus, while the promotion of drinking water is being addressed by some organizations interviewed in this study, further research is needed in order to support broad drinking water advocacy and to promote increased clean water legislation.
4.2.8 Food Waste

“I am so convinced that every community needs a small composting operation. If anything came out of this process, if it was to help every community establish a composting operation. It is so critical. We are transforming the waste of a community into the fertile soil that we need to grow food.”

The third major identified opportunity for improvement falls in the arena of food waste. Many of the organizations interviewed had not previously considered food waste as integral to the food system. Importantly, while a majority of organizations expressed support of small-scale or household composting programs, organizations interviewed were less interested in addressing large-scale municipal or regional composting programs. In addition, over fifty percent of organizations interviewed are networking or making connections regarding the re-use of edible food (Table 4.2-8). Notably, a question specifically related to food gleaning (the collection of crops from fields that have been previously harvested and would otherwise be wasted) was absent from the survey but discussed with enthusiasm by several interviewees.
Table 4.2-8 Involvement in Programs/Policies Relating to Food Waste Disposal

<table>
<thead>
<tr>
<th></th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Composting Programs</td>
<td>38.0% (8)</td>
<td>14.3% (3)</td>
<td>14.3% (3)</td>
<td>4.8% (1)</td>
<td>9.5% (2)</td>
<td>19.0% (4)</td>
</tr>
<tr>
<td>Food Re-use Connections/Networking</td>
<td>33.3% (7)</td>
<td>14.3% (3)</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>42.9% (9)</td>
</tr>
</tbody>
</table>

4.2.8.1 Composting

"Composting is also a good job opportunity. I mean, that is a green job right there. And you could do it with a bike, a bike and a trailer - just go around collecting from restaurants, or municipally. But it does have a big education shift. For building owners, it saves them money to have less trash. So there are multiple incentives to composting, and there are some business opportunities there."

Of the organizations interviewed, 50% reported active involvement in composting programs and/or policy efforts (Table 4.2-8, Figure 4.2-2 shown in light and dark green). An additional 14% of organizations interviewed are not currently involved, but would like to be involved in composting in the future (Table 4.2-8, Figure 4.2-2 shown in tan). The organizations that are not currently involved in these efforts, but who plan or want to become involved, represent the core groups that should be targeted with increased comprehensive education in order to support the development of enhanced program and advocacy opportunities on this topic. In addition, almost 10% of organizations interviewed "had not previously considered
this option, but will consider it for the future,” (Table 4.2-8, Figure 4.2-2 shown in purple). This piece of information demonstrates the value of the continued replication of the interconnected food-system message, indicating an added knowledge gain from the conduction of the food-system survey assessment itself. The high rate of organizations that are considering or planning to engage in composting in the future signifies a clear opportunity to promote activities such as improving household or business composting facilities and trainings, as well as advocating for regional or municipal composting facilities and pickup.

Figure 4.2-2 Involved in Supporting Food Waste Composting Programs or Projects
4.2.9 System Interconnectedness

"People feel that they should be buying local food, because they vaguely know that this is the right thing to do. And then there are people who are really passionate about it, but the vast majority of people feel like it's what they should be doing. And the train keeps going on, and they keep trying to stay on board and 'do the right thing,' but they don't really know why. So, because the movement is moving along in such a forceful and strong way, we forget about all the people who are barely hanging on, but who aren't really sure why they are doing this. So, I try to take a step back and ask them, 'do you know why you should be buying local, let me tell you a little bit about this. You are part of something really great, for the whole community.' We forget that people don't get it, because it seems like common sense to us."

Table 4.2-9 Involvement in Programs Supporting Food System Interconnectedness

<table>
<thead>
<tr>
<th>Program</th>
<th>Yes, very involved</th>
<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Will consider for the future</th>
<th>No, not involved</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food System Master Plan</td>
<td>38.0%</td>
<td>14.3%</td>
<td>9.5%</td>
<td>0%</td>
<td>0%</td>
<td>23.8%</td>
<td>14.3%</td>
</tr>
<tr>
<td></td>
<td>(8)</td>
<td>(3)</td>
<td>(2)</td>
<td>(0)</td>
<td>(0)</td>
<td>(5)</td>
<td>(3)</td>
</tr>
<tr>
<td>Food Policy Council or Coalition</td>
<td>71.4%</td>
<td>4.8%</td>
<td>9.5%</td>
<td>0%</td>
<td>0%</td>
<td>14.3%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>(15)</td>
<td>(1)</td>
<td>(2)</td>
<td>(0)</td>
<td>(0)</td>
<td>(3)</td>
<td>(0)</td>
</tr>
<tr>
<td>Food Resource Guide</td>
<td>33.3%</td>
<td>4.8%</td>
<td>9.5%</td>
<td>23.8%</td>
<td>0%</td>
<td>23.8%</td>
<td>4.8%</td>
</tr>
<tr>
<td></td>
<td>(7)</td>
<td>(1)</td>
<td>(2)</td>
<td>(5)</td>
<td>(0)</td>
<td>(5)</td>
<td>(1)</td>
</tr>
<tr>
<td>Emergency Food Preparation Planning</td>
<td>4.8%</td>
<td>0%</td>
<td>4.8%</td>
<td>0%</td>
<td>0%</td>
<td>90.4%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(0)</td>
<td>(1)</td>
<td>(0)</td>
<td>(0)</td>
<td>(19)</td>
<td>(0)</td>
</tr>
<tr>
<td>Farm-to-Institution Programs</td>
<td>61.9%</td>
<td>4.8%</td>
<td>4.8%</td>
<td>14.3%</td>
<td>0%</td>
<td>14.3%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>(13)</td>
<td>(1)</td>
<td>(1)</td>
<td>(3)</td>
<td>(0)</td>
<td>(3)</td>
<td>(0)</td>
</tr>
</tbody>
</table>
One of the major goals of this thesis project was to help to sustain conceptual linkages across food-system sectors by strengthening the importance of food as part of an interconnected system. Each previous section represents an important component of the regional food system. In addition to researching specific food-system components, the survey attempted to capture the efforts of organizations in the Pioneer Valley that are striving to sustain an integrated regional food model.

One key aspect of developing an integrated food system is the creation of a food-system master plan. Over sixty percent (61.8%) of organizations interviewed were either currently involved in, or wanted to be involved in, the creation of a food-system master plan for their organizational focus area or region (Table 4.2-9). Even more impressively, over four-fifths of organizations interviewed (85.7%) were current members or leaders of food policy councils or coalitions (Table 4.2-9), including the Holyoke Food and Fitness Policy Council, the Springfield Food Policy Council, and the Massachusetts Food Policy Alliance. The high rate of engagement in food system planning and food policy councils demonstrates a deep level of understanding in the region of the importance of perceiving and addressing food issues as part of an interconnected system, providing a critical asset to the development of the Pioneer Valley’s regional food system.
"The biggest challenge was for my students to eat it. Because you're roasting a medley of turnip and vegetables that they don't have commonly at home ... So, having different kinds of fresh vegetables, because their favorite ones are corn, potatoes and French fries, and green beans. We did sampling and sampling with them, trying different recipes. And we now have a butternut squash soup with chicken in it, and even my elementary schools, they like it. You've got to keep on playing with recipes until you find something ... After a while we keep on repeating it, and after about fourteen or fifteen times, they eat it."

Farm-to-institution programs represent one of the strongest cross-sector programs outlined in the assessment survey tool. Farm-to-institution programs address multiple components of the regional food system, including food production, processing, distribution and consumption. Bulk purchasing for farm-to-institution programs guarantees high-volume seasonal orders for local food producers, providing guaranteed funding support for local farmers. Further, farm-to-institution programs rely heavily on, and therefore strengthen, regional food processing and distribution capacities. Farm-to-school programs help to provide nutritious meals to youth. Notably, due to guaranteed state and federal funding support, farm-to-school programs are most effective in the schools with high numbers of students accepting free or reduced lunch, thus providing nutritious meals to low-income youth and addressing issues of economic-related food justice and food access inequities. Farm-to-institution connections have the potential to create institution-to-farm models as well, providing large-scale food waste composting opportunities for institutions and closing the food-system loop. Finally, farm-to-school programs that provide young people with local food exposes them to
the appreciation of local food variety and provides healthy food advertising to
consumers at a young age. Many of the organizations interviewed either directly or
indirectly support farm-to-institution programs, with 85% of organizations
interviewed either actively involved, partnering, or wanting to be involved with
some aspect of farm-to-institution support (Table 4.2-9). Farm-to-institution
program and advocacy efforts represent key opportunities for improving the
Pioneer Valley food system, and thus serve as both a Pioneer Valley food-system
asset, as well as an opportunity for improvement.

4.2.9.2 Emergency Food

"One thing that we work hard to do is to make sure that Emergency Food isn't
seen as separate from the food system as a whole. It's a huge part of our food
system, as I said, we see ourselves really as food system recyclers. So, we can
capture a lot of stuff that would otherwise go to waste. And we're serving a
huge portion of our population, sadly. A much bigger portion than I would like
to be serving. So, we all really fight against the idea that there is food and then
there's emergency food, and those things need to be integrated. Often times
the local "foodie" movement is very much geared towards upper-middle class
folks, to the exclusion often of lower-income people. Or they at least they feel
excluded. And I would like to see those two worlds bridged more. And it is
happening, with subsidized CSA shares and mobile farmers markets. Things
like that are happening, but I would like to see that happen even more so that
those class distinctions aren't as great, and poor people can also benefit from
eating local healthy food. I mean, we live in a bread basket, so let's all benefit
from it."

While specific organizations in the region are doing incredible work to promote
food assistance and to provide emergency food options, over 90% of organizations
interviewed are not involved and do not plan or want to be involved with food
assistance or emergency food efforts (Table 4.2-9). In general, organizations
interviewed were very clear that they felt that the concept of emergency food fell
outside of their organizational scope. Directly countering these opinions, the emergency food-focused organizations clearly articulated the need for greater inclusion within the regional food-system network. The lack of integration of emergency food with the regional food system demonstrates a major barrier in the development of the Pioneer Valley food system. Concentrated efforts should be made to shift regional perceptions of emergency food, so that it is seen as not separate from the rest of the regional food system, but as an integral piece of the comprehensive system.

4.2.9.3 Food Justice and Inequalities

“We teach about food systems in general, we teach about agri-business, teach about local foods and teach about racism in the food system. We bring all the youth up to speed about racism and the broad system impacts, especially on the ways that structures of inequality impact food equity... We teach about how racism is impacting the current state of the food system in the area where they live.”

A crucial component of the historic legacy of our food system and food politics is the current inequity in food access and the consequential concentration of racial and ethnic health disparities. The assessment survey did not include a targeted question about efforts to address racial food injustices, as those efforts were intended to be addressed within other survey questions. However, survey questions relating to issues of culturally appropriate food acquisition and access to affordable food did not capture the concrete inequalities of food justice inherent across the food system. The stated mission and objectives of several organizations interviewed include direct intentions to combat food injustice and address racial, ethnic and socio-
economic food inequalities. Unfortunately, the rate at which organizations address these issues cannot be directly measured in this data analysis because the necessary questions were not specifically asked within the assessment survey. A further omission relevant to injustice within the food system is the role of workforce development and job creation support as part of the development of a regional food system. Some information regarding workforce development was captured through questions relating to economic development, and several organizations interviewed are actively engaged in support of equitable workforce development programs. The responses on this topic were not measurable in the data analysis, however, due to limitations of the survey assessment tool.

4.2.9.4 Language

"I'm very happy to use the phrase food security, but the more that I think about and practice this work, the more I question that language and its meaning. I'm tending to use the phrase food resiliency, for a couple of reasons. Food security is widely used in the world of hunger, and hunger relief. It's also widely used in biotechnology - food becomes secure when it's radiated and protected from terrorists. But in both of those realms sometimes it relates more to someone else doing something to bring food and to a community, rather than a community developing strength and resiliency and self-determination around food on their own. So, I feel like food resiliency connotes something more vibrant and active and almost always coming from within the community rather than outside of the community. So, it just feels like a more dynamic process that's about thrivability rather than sustainability to me. The other phrase I like is food sovereignty, which has more global and social movement implications. But I think that food resilience automatically has more meanings to more people, especially in communities of people who are more marginalized and institutionally oppressed, with racism, classism, and things like that. The whole idea of being resilient is very familiar to a lot of people, because they've had to be resilient to survive."
The language used by organizations to discuss various aspects of food-system programs or practices differed widely. Some interviewees used multiple different vocabulary words to discuss the same concept, while others asked for repeated definitions of language used in the assessment survey tool. The absence of a common language to discuss food-system programs and policies demonstrates a major barrier in the creation of a comprehensive regional food system. Interdisciplinary agreement about a common food-system language is essential for organizations with diverse missions and different focus populations to come together under one umbrella and address large-scale systematic change.

4.3 Data Results & Implications

Each section of the assessment survey was designed to include one set of questions relating to program and policy implications and another on data collection and organizational information needs. Roughly one-third of the total survey questions relate to organizational data needs, the responses of which are aggregated and described in more detail below. Strikingly, the majority of organizations interviewed reported that for the majority of data-related questions they do not have and do not want the data described. The lack of interest in both data collection and data receipt has meaningful implications for the capacity of the region to collect critical information. That information is needed to guide the development of new or current programs, or for food-system-related funding and grant applications. A cross-tabulation of these results indicates that, across the assessment, the same few
organizations expressed interest in either having or wanting specific data, and those organizations are particularly data savvy. The other organizations demonstrate a regional food-system barrier because they do not have the resources to collect data, or do not have the training to know how to use it. The questions pertaining to data collection and use are grouped in four categories including environmental information, economic information, resource mapping, and population health and hunger information.

4.3.1 Food Related Environmental Impact Information

Three environmentally related questions were listed in the survey assessment tool. The majority of the survey responses for all three environmental data questions demonstrate an overwhelming lack of interest in this subject matter. While one-fourth of organizations said that they have access to, or expressed interest in having, information related to land use (including farm land conservation), the majority of organizations interviewed were not interested in collecting or receiving data related to the environmental impact of food production. In addition, over seventy percent (71.4%) of organizations interviewed expressed disinterest in information related to the environmental impact of food waste disposal. (Table 4.3-1, Figure 4.3-1)
Table 4.3-1 Interest or Access to Environmental Data and Information

<table>
<thead>
<tr>
<th></th>
<th>Have access to this data</th>
<th>Want to collect this data</th>
<th>Want to receive this data</th>
<th>Know how to get this data</th>
<th>Slightly interested in this data</th>
<th>Not interested in this data</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environ. Impact Assessment</td>
<td>9.5% (2)</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>9.5% (2)</td>
<td>14.3% (3)</td>
<td>52.4% (11)</td>
<td>0%</td>
</tr>
<tr>
<td>Land Use Impact Assessment</td>
<td>23.8% (5)</td>
<td>0%</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>9.5% (2)</td>
<td>61.9% (13)</td>
<td>0%</td>
</tr>
<tr>
<td>Food Waste Impact Assessment</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>0%</td>
<td>0%</td>
<td>9.5% (2)</td>
<td>71.4% (15)</td>
<td>4.8% (1)</td>
</tr>
</tbody>
</table>

**Figure 4.3-1 Interest or Access to Environmental Data and Information**
4.3.2 Food System Economic Data

“Something that is missing is adequate information on the economic impact of food production, particularly growing food, as a statewide need. There is some, and some resource economics faculty is researching this. Evidence of the burgeoning economy of farms, even though we’re not an agriculture state, there is huge information to get regarding the economic impact of farming and food processing.”

Table 4.3-2 Interest or Access to Economic Data and Information

<table>
<thead>
<tr>
<th></th>
<th>Have access to this data</th>
<th>Want to collect this data</th>
<th>Want to receive this data</th>
<th>Know how to get this data</th>
<th>Slightly interested in this data</th>
<th>Not interested in this data</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Impact Assessment</td>
<td>28.6% (6)</td>
<td>4.8% (1)</td>
<td>14.3% (3)</td>
<td>0%</td>
<td>14.3% (3)</td>
<td>28.6% (6)</td>
<td>9.5% (2)</td>
</tr>
<tr>
<td>Small-Scale Food Processing</td>
<td>28.6% (6)</td>
<td>0%</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>9.5% (2)</td>
<td>47.6% (10)</td>
<td>0%</td>
</tr>
<tr>
<td>Impact Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Organizations interviewed were more interested in economic food system data and information than in many of the other data options listed in the assessment survey. 62% of organizations interviewed noted that they have access to, or some degree of interest in, economic impact assessment data (Table 4.3-2, Figure 4.4-2, calculated by combining the organizations that “have access,” “want to collect,” “want to receive” or are “slightly interested” in this data). 28.6% of organizations interviewed noted that they have economic impact data, while 19.1% expressed interest in collecting or
receiving this information (*Table 4.3-2, Figure 4.4-2*). Similarly, 28.6% of organizations interviewed noted that they have access to small-scale food processing data, while 14.3% expressed interest in either collecting or receiving this information in the future (*Table 4.3-2, Figure 4.4-2, calculated by combining the “want to collect” and “want to receive” categories*). The relatively high interest in economic-related data demonstrates a common focus across the region to develop and sustain increased numbers of food-related businesses. Further research regarding economic impact data is recommended to better address organizational needs. Economic data, particularly related to the development of small-scale food processing centers, represents a core opportunity for improvement in the Pioneer Valley food system.

*Figure 4.3-2 Interest or Access to Economic Impact Data and Information*
"One of the questions I get a lot from the new farmers is 'what can I grow that’s going to sell? What do Americans want to buy and what will they pay for it?’ So, knowing what kinds of crops have a glut in the market versus what people want, is always hard to get at. ... If I could tell a farmer to grow this many tomatoes and this will sell, that will be super. So, that would be great, just knowing what the market will support. They have some insight into their own markets and what people will buy."

4.3.3 Food Related Resource Mapping and Locating

<table>
<thead>
<tr>
<th>Table 4.3-3 Interest or Access to Food System Asset Mapping and Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have access to this data</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Production Land Inventory</td>
</tr>
<tr>
<td>Location of Food Assets</td>
</tr>
<tr>
<td>Food Retail Location &amp; Accessibility</td>
</tr>
</tbody>
</table>

Intuitively, information regarding farmland productivity and food retail might seem categorically similar to regional economic assessment data. The data questions were grouped in this format, however, because organizations interviewed were substantially less interested in spatially oriented data, or resource mapping. Over one-third of organizations interviewed (38.1%) were not interested in data relating to a food production land inventory, including examples such as lists or maps of existing or potential sites for community gardens, farms, or fisheries (Table 4.3-3,
Similarly, one-third of organizations interviewed (33.3%) were not interested in data regarding lists or mapping of food assets such as grocery stores, community gardens or food assistance programs (Table 4.3-3, Figure 4.3-3). Over half of organizations interviewed, 52.4%, were not interested in data relating to food retail access (Table 4.3-3, Figure 4.3-3). Such data could include listings or maps of fast-food or food-mart locations, transportation systems connecting consumers to venues of food retail, or feasibility data related to alternative food retail options such as mobile markets. The fraction of organizations interviewed that expressed an interest in implementing programs or policy change related to the information listed in this section is higher than the ratio of organizations that expressed interest in collecting relevant data or information. This disconnect between the expressed interest in program implementation and the expressed interest in data collection suggests the need for increased education about the benefits and importance of data to support program development and policy change.
4.3.4 Food Security, Hunger or Health Information or Assessment Data

Table 4.3-4 Interest or Access to Hunger/Health Related Data and Information

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Have access data</th>
<th>Want to collect data</th>
<th>Want to receive data</th>
<th>Know how to get data</th>
<th>Slightly interested in data</th>
<th>Not interested in data</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Needs Assessment</td>
<td>42.9% (9)</td>
<td>9.5% (2)</td>
<td>19.0% (4)</td>
<td>0%</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>14.3% (3)</td>
</tr>
<tr>
<td>Emergency Food Assessment</td>
<td>9.5% (2)</td>
<td>0%</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>4.8% (1)</td>
<td>76.2% (16)</td>
<td>0%</td>
</tr>
<tr>
<td>Health Outcome Assessment</td>
<td>9.5% (2)</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>9.5% (2)</td>
<td>4.8% (1)</td>
<td>57.1% (12)</td>
<td>4.8% (1)</td>
</tr>
<tr>
<td>Food Insecurity Assessment</td>
<td>14.3% (3)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>4.8% (1)</td>
<td>80.9% (17)</td>
<td>0%</td>
</tr>
</tbody>
</table>

Figure 4.3-3 Interest or Access to Environmental Data and Information
The data-related survey question that displayed the highest rate of organizational interest was the Community Needs Assessment. The majority of organizations interviewed expressed interest in either having or wanting to have community needs assessment data (demonstrated in Table 4.3-4 through a combined “have and want” total of 70%, shown in Figure 4.3-4 by the combination of the green and yellow bars). Similar to previous trends distinguishing emergency food efforts from the majority foci of food-related organizations, the majority of organizations interviewed (76%) were not interested in data relating to either municipal or neighborhood emergency food needs or use, or in information about population-based hunger (81%) (Table 4.3-4, Figure 4.3-4). In a corresponding fashion, while 38% of organizations were somewhat interested in diet-related health outcome data, the majority of organizations interviewed (67%) were not (Table 4.3-4, Figure 4.3-4). The lack of organizational interest in diet-related information is surprising given that current funding streams for organizations interested in food-system change are often targeted to, and contingent on, health outcome results.

While it is reassuring that organizations are aware of, and interested in, community needs assessment information, the organizational response to this question represents a further disconnect in the food-system data web. The survey showed that 43% of organizations interviewed already possess or have access to community-needs-assessment information. A further 29% of organizations working on similar projects within the same region would like to collect or receive this information (Table 4.3-4, Figure 4.3-4) but are apparently unaware that the
information is available. While it is possible that some of the community needs assessment data are collected in specific communities that may not be useful or relevant to organizations working in different locations, it is also probable that organizations are not aware that the information has been collected or how to access it. This disconnect between information holders and information seekers represents a food-system barrier throughout the data results section of this report, suggesting the need for broad continued research and education on this topic.

Figure 4.3-4 Interest or Access to Hunger/Health Related Data and Information

4.4 Results Summary

The survey assessment results are presented in two categories: food-system program and policy measures; and food-related data collection and use. Within each category, food-system assets, barriers, and opportunities for improvement and future research are identified.
Regarding food system-related program implementation and policy efforts, seven core food-system assets for the Pioneer Valley region are described. The program and policy assets identified include: supporting local food production education and networking; supporting the development and maintenance of community gardens and the development of urban agriculture; engagement in strengthening local food distribution networks; seeking to improve issues of healthy food access and affordability; providing healthy food consumption and preparation education; supporting the efforts of municipal, regional, or statewide food policy councils; and providing farm-to-institution programmatic and legislative support.

Four major program and/or policy barriers to the development of a comprehensive food system in the Pioneer Valley were identified. These barriers include: providing farm labor support or services; addressing (un)healthy food media and advertising; integrating emergency food within the food system structure; and promoting the development of a common food-system language. Four key program and policy opportunities for improvement were described: support for small-scale food processing centers and programs; increased food consumption and preparation education; increased education and support for household, municipal and regional composting facilities; and increased support for farm-to-institution programs and legislation. In addition, two subjects were categorized as requiring follow-up information or research: increased research on the benefits and hazards of
residential livestock; and the assessment of tap water drinkability in order to promote increased rates of drinking water.

The assessment survey questions relating to data utilization and collection were similarly analyzed to determine regional assets, barriers and opportunities for improvement. High rates of organizational Community Needs Assessment data collection were identified as a core regional asset. Organizational interest in economic assessment data and information was identified as an opportunity for improvement, because several organizations wanted, but did not have access to, this information. Organizational disinterest in environmental and ecological-related data represents a barrier to the development of a comprehensive food system in the Pioneer Valley. Further, the disconnect between stated program objectives and interest in relevant data, along with the disconnect between the data possessed by some organizations and desired by others, presents two additional data-related food-system barriers in the region.
5.1 Recommendations for Pioneer Valley

Based on the data analysis, four overarching recommendations were developed to enhance and promote the regional food system of the Pioneer Valley. The four recommendations are:

1. *To provide technical assistance and training on data collection and data use.*
2. *To increase outreach and education about the interconnected food-system model and its implications.*
3. *To further address specific program and policy gaps and opportunities.*
4. *To strengthen connectivity across regional food-system programs and objectives.*

5.1.1 Data Collection and Utilization

Based on the data analysis, three core recommendations were developed with specific foci on data collection and utilization in the Pioneer Valley region. The first recommendation is to provide training and education about data collection and use, through forums such as classes, manuals, or on-line tutorials. The second recommendation is to provide technical assistance for organizational data-related technological needs, so that if data-utilization barriers stem from technical rather than educational issues these can be addressed. Finally, with the intention of
acknowledging the importance of improving data and knowledge flow across the region, the third recommendation is the creation of an Electronic Data Hub. An Electronic Data Hub could provide a platform to house current data, as well as space for organizations to list additional data that they already have and data they would like to have. In this way, the Electronic Data Hub could serve as a valuable and accessible food-system data library for the Pioneer Valley region.

5.1.2 Regional Food System Model

The development of a clear and consistent regional food-system model is essential to enhance programmatic and policy efforts on a systematic scale. Several aspects of the development of a consistent regional model in the Pioneer Valley need to be addressed further. First, it is crucial to develop a common language for food-system programs and concepts. Phrases such as “food security,” “emergency food,” “food processing” and even “food system,” have a multitude of different meanings for different people. For example, for some the phrase “food security” implies that a household has enough to eat, for others that a region can grow enough food to feed itself. One organization interviewed preferred to use the language of “food resiliency,” because to them resiliency implies a more community-developed and active relationship with food. Regardless of which words are chosen and how they are defined, it is essential to for the Pioneer Valley region to create, and disseminate, a common food-system language so that agencies working across the field are able to communicate with and understand one another.
When the development of a common language is underway, the following recommendation is to increase education and media outreach outlining the complexity and importance of the regional food system and its implications. An additional task should be to create a comprehensive, regional food-system master plan with clearly stated timelines that connect to goals and objectives. Such a master plan is imperative if there is to be cohesive development of a Pioneer Valley food system. The master plan can contain a set of municipal guidelines about food, so that when an area or municipality is considering zoning or institutional food purchasing, for example, they can look to these guidelines for suggestions and best practices to follow.

5.1.3 Targeted Opportunities

The second umbrella category of recommendations addresses regional gaps in the cohesion of the food system, and outlines potential opportunities for improvement or support. The first major opportunity for improvement in the Pioneer Valley is in addressing small-scale food processing efforts; appropriate tasks include review of regulatory barriers, strengthening of networks, and advocating for legislative support of small-scale slaughterhouses, community kitchens and food-preservation programs. Second, the region is advised to incorporate food waste into food-system plans by supporting municipal, regional, neighborhood and/or household food composting programs. The third recommendation for improvement is the intentional integration of emergency food within systematic food frameworks, and the acknowledgement of regional emergency food distribution networks as critical
to strong regional food-system development. The fourth recommendation for improvement is the integration of alternative food production issues relating to fishing, hunting, trapping and foraging for food within the food-system master plan.

5.1.4 Strengthening the Interconnected System

Developing a comprehensive food system in the Pioneer Valley region depends on the integration of disparate food-system components into a single connected system. Emphasizing cross-cutting programs, such as farm-to-institution strategies, along with the creation of a unified food-system master plan, and continued engagement in municipal, state and regional food-policy councils, would all help to bring the various components of the regional food system to the table. In strengthening the interconnected system, it is imperative to pay attention to the environmental, economic and equity components of the food system and the tenets of food sovereignty. A comprehensive and interconnected food system would support and depend upon environmental preservation and sustainable farming practices. Also, development of a regional food system can support the economic development of the region, and should seek to provide workforce-development opportunities for all residents. Finally, comprehensive regional food-system change should address population inequalities by race, age, language, and income, and should strive to maximize food justice and food sovereignty.
5.2 Conclusions & Implications for Broad Food System Planning

The assessment conducted for this research study provides an overview of organization efforts involved in supporting the current Pioneer Valley regional food system in order to determine regional strengths, barriers, and appropriate opportunities for improvement. The assessment analysis provides information on each of the system segments, as well as on the interconnected system as a whole (assuming the whole as being greater than the sum of its parts). The analysis presents additional information that is intended to distinguish between food-related program and policy implementation and food-related data collection and utilization. Arguably, the information presented in this research study provides insights into regional food-system planning efforts not only in the Pioneer Valley but also for similar regions across the nation. One intention of this research project is to demonstrate the value that community-based organizations play in developing and upholding regional food-system programs and priorities. Similarly, this research intends to support the importance of a regional planning agency (or regional governing body) in facilitating regional food-system cohesion and related organizational collaboration. The methodology of this research project, accompanied by the development of the assessment tool, aims to provide a replicable process for similar regions across the nation, particularly those that contain both rural areas and urban centers.
5.2.1 Addressing the Urban/Rural Divide: The Role of Regional Planning

Tangled deep in the roots of our globalized and fragmented food system is the historic legacy of the urban and rural divide. Historically, the growth of urban centers and major metropolitan areas occurred with little attention to the depletion of adjacent farmland. Simultaneously, there has been a historical lack of regulation addressing the origins of food products imported into urban areas and the locations of food retail outlets within cities. The emphasis on urban growth, and the emerging complexities of planning for high-density areas, has differentiated the aims and processes of urban planning from the major goals and objectives of rural planning, and often from regional planning as well.

Undertaking the task of mapping and coordinating a comprehensive local food system requires planning on the regional scale, thus bridging urban and rural divides. This bridging occurs because addressing food security on a regional scale requires a recognition of the interdependence between rural farmers and urban consumers contained within an integrated regional system (Ashman, De La Vega, et. al. 1993), thus dismantling urban and rural separations. Further, emphasizing the importance of comprehensive food-system collaboration across the region, with the inclusion of rural, urban and suburban representatives, helps to enhance the role and the significance of properly facilitated food-focused efforts within regional planning agencies or similar regional governing bodies.
This research study draws particular attention to the valuable role of a regional planning organization in facilitating and coordinating regional food-system cohesion and strategizing. Regional planning agencies present ideal conveners for food-system planning due to the alignment of such planning with many other regional planning goals. As discussed in Chapter Two: Literature Review, engaging with food security and food-system issues is relatively new to the planning field and to planning agencies, though community-based organizations have historically taken the lead in confronting these issues. As demonstrated in this study, however, due to unique funding streams or organizational goals, most community-based organizations are focused on either distinct spatial areas that do not encompass the entire region, and/or are focused on distinct food-system issues that do not span an integrated food system. Many food production-related organizations focus entirely in rural areas, engaging with topics such as farmland preservation or direct farm marketing. Similarly, food-justice or food-access organizations tend to focus solely in urban areas, promoting community gardens or urban agriculture, or addressing urban food access and affordability concerns. A regional planning agency that is newly entering the food-system arena would be remiss not to engage and collaborate with community-based organizations currently working in the field.

This research study provides an example for baseline outreach to, and assessment of, the efforts of community organizations engaged in food-system change across spatial and systemic boundaries. Ideally, regional planning agencies entering into food-system planning efforts will be inspired to engage in collaborative processes with local food-related organizations, and perhaps use this study to aid in the
assessment of regional strengths and opportunities for improvement, in order to build an integrated food-system plan, bridging rural and urban divides.

5.2.2 Master Plans and Policy Councils

5.2.2.1 Food System Master Plan

Creating a food-system master plan with concrete goals and objectives linked to a timeline with designated deadlines is a crucial strategy for building and maintaining a comprehensive, regional food system. The creation of such a master plan requires careful analysis of regional food productivity and consumption needs. Further, regional food-system master plans must address population concerns such as health disparities and environmental justice. A comprehensive master plan would incorporate components of economic development, community development, environmental sustainability and social equity. The food-system assessment used in this research study (Appendix A) is designed to identify organizational involvement with food-system goals. However, the survey can be additionally utilized to complement research efforts in the crafting of a regional food-system master plan. The questions listed under each section of the survey comprise an aggregated outline of the recommendations across sectors to positively address food-system program, policy and data needs. The survey is designed to address all of the components necessary for a comprehensive food system, and can therefore serve as a valuable tool for the inclusion of cross-sector components in the creation of a regional food-system master plan.
5.2.2.2 Food Policy Councils

"The Food Policy Council represents an innovative mechanism for coordinating and integrating the actions of disparate elements of the food system into a comprehensive whole." (Ashman, De La Vega, et. al. 1993)

Organizations in the Pioneer Valley are engaged in up to three different food policy councils, including two in high-density urban areas, and the statewide food policy alliance. In addition, the region is home to a self-identified “collaborative network” focused on enhancing the ecological and economic components of food security and sustainability. Given the quantity of food policy councils and networks in the region, an additional regional-focused food policy council is not recommended for this area. Regions without structured councils or facilitating bodies working to unite food-focused program or advocacy organizations should, however, consider establishing food policy councils. Such councils or alliances provide a platform for the assembly of food-system voices, spanning efforts to promote farming, food justice, anti-hunger, anti-poverty, public health, nutrition and planning goals. While a food-system master plan promotes the implementation of concrete programs or municipal guidelines to enhance the regional food system, food policy councils serve to unite regional food-system leaders and to address logistical and legislative barriers to food-system cohesion on local, regional and national scales.

5.2.3 Competition versus Collaboration

Common themes reiterated throughout interviews were the concerns of over-broadening organizational focus, and the resulting competitive territorialism
regarding program scope. Compounding these concerns is the perception of competition for limited food-related funding opportunities. Many survey responses by organizations that were not involved in particular programs or activities indicated that hesitation to engage was often the result of an understanding that a different organization was handling those topics. Not surprisingly, many of the alternate organizations mentioned were also on the survey list. Though not directly recorded (suggesting a possible amendment to the survey for future use), anecdotal evidence points to a divergence between the perception that an organization is covering or addressing a topic and the reality of that organization’s particular process or scope. Similarly misunderstood is the perception of organizational partnership barriers. In some circumstances, organizations welcome partnerships and collaboration, and in other situations organizations feel protective of their project scope and often have legitimate concerns regarding program funding. Due to confidentiality constraints, names of organizations interviewed, and their partners, were not recorded for this study. Information regarding survey modifications to collect and analyze data on organizational partnerships is discussed further in Section 5.3.1.2 - Enhancing Partnership and Collaboration.

Congenial collaboration requires either an absence of, or respect for, competition across organizations. The regional planning agency, or other facilitating body working to addressing comprehensive food-system planning in the region, needs to be mindful of organizational boundaries when promoting cross-system collaboration. Many not-for-profit food- and justice-related organizations rely
heavily on grant funding for survival. Organizational concern regarding the loss of grant funding, particularly for organizations working on similar projects within a shared region, can present a major barrier to successful collaboration and comprehensive food-system development. This research suggests the need for the creation of clear programmatic boundaries when pursuing comprehensive collaboration processes, particularly regarding grant funding opportunities. Simultaneously, collaboration among organizations increases capacities to apply for larger grant funds. In addition, successful collaboration will benefit from a clear outline of potential partnerships. This research recommends seeking answers to specific questions such as: Are organizations seeking partners on specific food-related projects? If so, what form of partnership do they want or need? Are there opportunities where organizations would be willing to partner on specific programs or advocacy projects? The answers to these questions provide critical insight into the complexities of collaboration that a regional planning agency or other facilitating body can, and should, address as part of the collaborative food-system development process.

5.2.4 Targeting Schools and Institutions

“While Farm to School programs meet essential food justice goals around increasing fresh food access, they have also been able to spark a change in the way school meals are defined and in how school food service managers and staff view their role – now as providers of good food in the school system.” (Gottlieb & Joshi 2010)
One major recommendation for the Pioneer Valley regional food system, based on the research conducted in this study, is the provision of targeted support for farm-to-school and farm-to-institution programs. As previously stated, farm-to-institution programs provide special opportunities to strengthen cross-sector components of the food system within a single package. Farm-to-institution programs support local food production, strengthen regional processing and distribution structures, and improve access to healthy food. These programs also have the potential to support a closed-loop system by bringing inedible food waste back to the farm or to an alternate food-composting center. Broad food-system collaboration should contain targeted efforts to include school systems and other institutions such as health centers, hospitals, and prisons, in support of farm-to-institution purchasing, legislative advocacy and education.

5.3 Opportunities for Improvement and Future Research

Continued research is needed to further explore the dynamics of coalition building between municipal/regional planning agencies and community-based organizations. It is imperative to determine whether community-based organizations are representative of the broad community and, when necessary, to obtain a representative sample of regional leaders. The assessment survey employed here is meant to provide a baseline tool for regional planning agencies (or other regional governing or food-system facilitating bodies) to help determine the level of organized engagement in the development and maintenance of the regional
food system. The survey is designed to provide information on both current and future program and policy opportunities, as well as information on data collection and utilization measures to uphold programmatic and legislative change. As with the development of any survey tool, there is room for future improvement to best capture the necessary information in future surveys.

5.3.1 Opportunities for Improvement for the Survey Assessment Tool

To streamline the interview process, the survey tool could be re-formatted to accommodate multiple-choice, rather than open-ended, response answers. The open-ended format does allow for optimal information gathering due to the resulting interview discussion format. A multiple-choice survey tool would, however, yield benefits including an increase in data scope that allows a more robust cross-analysis of sub-question components. For example, two organizations may be engaged with improving food access, though one is targeting transportation opportunities and the other healthy food retail locations. The current survey format groups these two hypothetical organizations together without a more accurate account of the type of program method used by each organization. Currently, potential multiple-choice question options are listed below each survey question in the format of key words, used to begin or promote dialogue on each survey question.
5.3.1.1 The Missing Questions

In sum, the assessment survey used in this research project presents a comprehensive outline of the components needed to develop and sustain a viable regional food system. With some exceptions, the list of questions covers much of the work being accomplished by the organizations interviewed. One major programmatic example absent from the survey was a question in the food waste section related to food gleaning. Food gleaning is the collection of unwanted crops from fields that have been previously harvested which would otherwise be left to rot or be tilled back into the soil. Gleaning of previously harvested fields is often completed by school or youth groups as a form of community service, and donated to programs in the emergency food network system. In this way, gleaning presents an additional interconnected program in the food system, linking emergency food efforts with education on food production and also a decrease in food waste.

Additionally absent from the survey is a clear focus on targeted population programs or a clear population-based policy emphasis. The survey does include one question focusing on youth populations, but neglects to address other populations impacted by inequities in the current food system. One population group that is not specifically addressed in the assessment survey is the elderly. Many elderly residents in the Pioneer Valley have difficulty accessing fresh and healthy food, often related to economic and transportation barriers. Several organizations interviewed conduct programs specific to supporting access to food for elderly residents.
populations. Unfortunately, this information cannot be properly categorized in the data analysis, as it was not listed as a formal survey question and thus was not addressed in all interviews.

A further omission in the assessment survey is a question specifically related to race or ethnicity. Racial and ethnic minority populations in the Pioneer Valley face distinct social, environmental, and food-justice barriers, particularly relating to issues of food access. Consequently, racial and ethnic minority groups across the region face higher levels of obesity and obesity-related health disparities. It is important to note that the intention of the survey was not explicitly to address social, environmental and economic disparities of race across the food system. However, the absence of a finite question focused on racial disparities in the food system means that the data results and analysis do not capture the important efforts of organizations working to specifically address racial and ethnic food-system concerns and targeted programs and the development of policy advocacy. Future survey versions should include a question with the direct intention to highlight and address the importance of organizational efforts to combat racial injustices within the current food-system structure.

Additional sectors of the population that face unique struggles with current food-system structures, such as low-income populations, non-English speakers, female farmers, and recently resettled refugees, should also be addressed in the assessment survey. A re-organization of the survey for future use suggests adding a segment in
the “Overall” section that includes the existing questions on youth-specific and migrant-farm worker needs, as well as adding questions specific to the needs of other minority or disadvantaged population groups. A re-analysis of the current interviews might be able to capture additional information on these topics, but an analysis of that kind is not feasible within the current project scope.

5.3.1.2 Enhancing Partnership and Collaboration

Due to constraints imposed by compliance to Institutional Review Board (IRB) guidelines and respect for interviewee confidentiality, the names of the organizations interviewed, and their partners, remain undisclosed. For the purpose of a non-academic and more practically focused assessment, the names and contact information of all organizations interviewed, along with any partners or other organizations mentioned in the interview, should be listed and formatted as a community resource tool. In a practice-oriented approach the original survey model could be amended to incorporate targeted questions regarding current or future organizational partnerships, as well as willingness to partner with others. This amended survey component could lead to the spatial and logistical mapping of organizational partnerships, and could thus provide additional benchmarking to support the measurement of collaborative success. In addition, a mapping of partners could demonstrate the potential disparities between perceived and organized organizational activities. In other words, mapping and recording organizational partner information could strengthen regional awareness about the
reality of organizational activities within the region, and also provide insight into how well organizations within the region understand the efforts and activities of one another.

5.3.1.3 Documenting Improvement

One important component of a regional food-system assessment is the documentation of improvement. For various reasons this survey tool did not include a numerical rating of engagement or participation of food-system activities. Had the survey included a rating system, subsequent surveys could be administered to determine quantitative rates of improvement. Alternate methods of measuring improvement could be determined through the transformation of the survey results into a regional food-system master plan with designated deadlines for project goals and objectives. The benefit of the transformation from assessment to planning models is the emphasis on constructive change, and subsequent documentation of improvements should feed into continued reorganizing of the regional food-system plan. Benefits of reformatting the assessment survey to provide numerical rating for each food-system activity allow for calculated measurement of improvement, and subsequent comparative data analysis.

5.3.2 Suggestions for Future Research

This research project focused on the efforts of community-based organizations to develop and strengthen the Pioneer Valley regional food system, and also explored
opportunities for regional planning agencies to partner and collaborate with community-based organizations and to facilitate regional systemic cohesion regarding food-system efforts. Future research could replicate this project in various regions across the nation and strive to draw similar, or broader, conclusions regarding best practices for food-system planning and collaboration of community-based organizations on a regional, national, or even global, scale. It would be interesting to compare different assets and barriers for regions of similar land and population sizes with different cultural or geographic compositions.

Future research along a different route could modify this survey assessment to explore the roles of the various players who participate in strengthening regional food-system cohesion. Community-based organizations that work on food-system efforts provide a useful platform upon which to judge the current status of a regional food system, as they are often working to address missing issues or systemic constraints. However, these organizations represent only one of many important groups that form the regional food-system team. A similar survey could interview the efforts of municipal planners or policy makers to determine the efforts taking place to address food-system barriers at executive and legislative levels across the region. Universities and other research institutions could be included in further research studies, particularly regarding their role in the collection and dissemination of food-related data. Similarly, a survey of this kind could focus on the needs of small farmers and other food producers essential to the foundation of the food system. Surveys of this ilk could also focus on schools, health centers and
other institutions within the region, or on the efforts of various food retailers and their role in perpetuating or altering the food system status quo. Finally, a broad survey could be done to examine the role of individual food consumers with the aim of determining how a community might aspire to access, prepare, produce, process and dispose of its food in a different manner, given the opportunity or authority to do so.

5.3.3 Final Thoughts

A well functioning food system represents the voices of all of the constituents who grow, process, distribute and consume food. This thesis research is founded on a basis of food sovereignty, identifying food not as merely a commodity, but as a basic human right. Similarly, this research is founded on the goals of sustainability, seeking to develop a food system that integrates environmental, economic and equity elements. This research provides a tool to support the efforts of regions across the country seeking to develop and strengthen their food systems, primarily through processes of community-organization collaboration. This thesis aims to make the case that in order to obtain systemic programmatic and policy change in the current food system, it is imperative for regions across the nation to promote education and outreach about the regionalization of food, to support the efforts of community-based organizations working to address inequalities in the current food system, and to build opportunities for the development of creative and innovative regional food-system models.
APPENDICES

APPENDIX A

FOOD SYSTEM SURVEY ASSESSMENT

FOOD SYSTEM PLANNING SURVEY
THE PIONEER VALLEY PLANNING COMMISSION FOOD SECURITY PROJECT
JULY 2011

About The Project

This survey is being conducted to further inform the efforts of the Pioneer Valley Planning Commission’s Food Security Project. The intention of this assessment is to provide a knowledge platform to support the creation of a regional food security plan, and to subsequently strengthen food security at the household, municipal and regional scale in the Pioneer Valley. The interview data will be used to comprehensively assess the status of the current food system and to analyze existing partnerships and barriers. The expected outcomes include recommendations for new projects, enhanced collaboration opportunities, and strategies to reduce any identified concerns. This assessment will support and complement the Pioneer Valley Planning Commission’s regional food security initiative by determining the current status of the local/regional food system and the on-going efforts to promote local and regional food system policy change.

The goal of this research study is to produce a comprehensive assessment of the food-system in the Pioneer Valley. While you may not benefit directly from this research, your participation in the study will increase regional awareness of the efforts across the Pioneer Valley working to strengthen and support the regional food network, and will also further help to build collaboration across agencies and disciplines. At the conclusion of this study, the researchers may publish their findings. Your confidentiality will be protected and all information will be presented in summary format. You will not be identified in any publications or presentations.

The survey tool is organized by food system component, including: overall food system, food production, transformation (processing), distribution, acquisition, consumption, and waste. It is divided in this way in order to streamline the interview process by allowing the interviewer to pass over sections that are not relevant to a particular organization. The survey draws insight from across the field, encompassing questions related to land use, community development, economic development, transportation, environmental protection and social equity. For each food system component, the survey tool is further subdivided into two sections: information gathering (i.e., determining the assessments, data gathering,
inventories and mapping that have been previously completed or the information that the organization would like to know) and programs and policy change (the various projects, programs or legislative action that the organization has enacted or would like to enact).

**The Survey**

For each of the following survey segments, please address these core questions:

- Is this effort something that you are **currently working on**, have **previously worked on** or **hope to undertake** in the future?
- Who are your **major partners** in these efforts?
- What **limitations, barriers or concerns** did you encounter?
- What relevant **data** have you collected and/or would you like to collect or have access to?

---

**Food System Overview**

*Information Gathering*

1. Has your organization conducted a **food-related community needs assessment**?
   Examples of possible assessment information include: data collection on diet-related health outcomes, food availability (stores or farmers’ markets), food access (transportation), food assistance programs and/or food insecurity information.

2. Has your organization conducted an **emergency food (and water) assessment**?
   Including the household, community, neighborhood and/or regional scale.

3. Has your organization conducted a **food-related economic impact assessment**?
   Possible impact data include information on food imports and exports, food-related business information, food-related workforce development, etc.

4. Has your organization conducted an **energy or environmental impact assessment**?
   Examples of possible assessment information include: assessing the energy used in the production, distribution, and consumption of food; researching impacts of the food system on the natural environment, fisheries and wildlife habitats; etc.

**Programs and Policy Change**

5. Does your organization have a **food security or food system master plan**?
   Either a finalized or draft plan versions, either long-term or short-term plans, etc.

6. Is your organization involved with a **food policy council or coalition**?

7. Does your organization offer a local or regional **food resource guide**?

8. Does your organization have an **emergency food (and water) preparedness plan**?
Food Production (Growing and Raising Food)

Information Gathering
1. Has your organization conducted a food production land inventory?
   Examples of relevant information include lists of community gardens, farms, fisheries, and the open-space potential sites for gardens or farms, etc.

2. Has your organization conducted a food-related land use impact assessment?
   Including gathering information on land use trends relating to farmland conversion to other uses, economic and environmental indicators, etc.

Programs and Policy Change ~ Rural
3. Is your organization involved in right-to-farm or farmland preservation efforts?
   Examples of these efforts include: promoting right-to-farm legislation, providing farmer protection against nuisance complaints, supporting agricultural preservation zoning and/or the transfer of development rights (preserving agricultural land from residential development), etc.

4. Is your organization involved in environmental protection efforts?
   Examples of these efforts include: environmental monitoring, land conservation, water quality protection, etc.

5. Is your organization involved in farm labor protection or services?
   Examples of these efforts include: housing support for farm workers (temporary, seasonal or permanent), health care support or services, and environmental hazard protections, etc.

6. Is your organization involved in farm visibility support/services?
   Examples of these efforts include: support for small farm financing, business planning, marketing, and local food production incentives.

Programs and Policy Change ~ Urban
7. Is your organization involved in supporting urban agriculture?
   Examples of these efforts include: advocacy for urban agriculture zoning, addressing urban agriculture standards (including signage, parking, walkways, fencing, composting, etc.), and permitting or regulations for the existence of urban farms.

8. Is your organization involved in supporting community gardens?
   Examples include addressing land access, water use, composting, etc.

9. Is your organization involved in promoting residential livestock ordinances?
   This legislation allows urban residents to raise livestock ranging from examples such as bees, chickens or ducks, to goats, etc.

10. Is your organization involved in local food production education or networking?
    Examples of these efforts include personal or community gardening education, landshares (connecting landowners with growers/producers), etc.
Programs and Policy Change ~ Other

11. Is your organization involved in fishing advocacy or education?
   Examples of these efforts include support for either commercial fishing (efforts involving fishing licensure or regulations) and/or recreational fishing for food (including water quality protection information or advocacy), as well as efforts to address dam removal, fish ladders or hydropower, etc.

12. Does your organization address issues around hunting, trapping or other access to “natural” foods?
   Examples of these efforts include addressing issues regarding foraging on protected lands, regulations and policies to promote public health and safety, etc.

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Food Transformation (Processing Food)

Information Gathering

1. Does your organization have a food transformation/processing impact assessment?
   Examples of these efforts include small-scale food processing mapping, assessment of barriers to small-scale food processing, implications for local food distribution and farm-to-institution regulations, etc.

Programs and Policy Change

2. Is your organization involved in supporting the efforts of small-scale local food processors (including slaughterhouses, preparing produce for farm to school programs, etc.)?
   Examples of these efforts include addressing food safety requirements, reviewing regulatory barriers, community programs on food preservation, education on food processing implications, networking or connecting local food processing plants with local food producers, etc.

---

Food Distribution (Moving and Allocating Food)

Information Gathering

1. Has your organization gathered information on the location of food assets?
   Examples of relevant information include the location of: grocery stores, community gardens, food assistance programs (governmental, religious, or other) and community food-partner organizations.

Programs and Policy Change

2. Is your organization involved in efforts to support the promotion of local food?
   Examples of these efforts include “Buy Local” campaigning, local food labeling, supporting direct farm distribution (via addressing setbacks, accessory use, signage, etc.) supporting regional production-distribution networks, etc.
3. Is your organization involved in efforts to support food-related economic development programs or incentives?
   Examples of these efforts include: food-related enterprise development, increased job creation or development, workforce development and training, etc.

4. Is your organization involved in efforts to support farm-to-institution programs or legislation?
   Examples of these efforts include addressing local food requirements or laws, connecting food producers with institutional food distributors, etc.

---

**Food Acquisition (Purchasing and Obtaining Food)**

*Information Gathering*

1. Does your organization have information about food retail locations and accessibility?
   Examples of this information include: mapping the locations of fast-food or food “marts”, mapping public transportation options to grocery stores or other food markets, mobile market feasibility studies, stakeholder assessments (to support healthy food retail business development), etc.

*Programs and Policy Change*

2. Is your organization involved in supporting incentives for healthy food retail?
   Examples of these incentives include: fast food zoning regulations (particularly around school areas), conditional use zoning (including healthy food requirements for new businesses), farmer’s market permitting or exemptions, “Feedability guides” connecting consumers with healthy food resources, fast food nutrition labeling or education, the banning or soda or trans-fats, or other state or municipal legislation.

3. Is your organization involved in efforts to support improving healthy food accessibility/affordability?
   Examples of these incentives include: improving accessibility/affordability of culturally appropriate food; supporting the acceptance of WIC or SNAP at farmer’s markets or other healthy food venues; addressing transportation opportunities or programs to improve access to healthy food retail; institutional purchasing requirements for recipients of local, regional, or state public funding; increasing healthy food availability to low-income and other food insecure places; etc.

4. Is your organization involved in providing food assistance or emergency food?
   Examples of these efforts include: providing information about emergency food programs or options, coordinating food assistance programs such as food pantries, soup kitchens, etc.

---

**Food Consumption (Eating Food)**

*Information Gathering*

1. Has your organization conducted a diet-related health outcome assessment?
2. Has your organization collected information related to food insecurity mapping and/or assessment?
   Examples of this information include: collecting the number or location of food insecure households or families, food insecure communities or neighborhoods; gathering information regarding utilization of free or reduced school breakfast or lunch programs (as well as nutritional assessment of school food); etc.

Programs and Policy Change
3. Is your organization involved in healthy food preparation education or training?
   Examples of these efforts include community-cooking classes, healthy food purchasing education, menu-label literacy trainings, etc.

4. Is your organization involved in school or youth-specific food nutrition programs?
   Examples of these programs or projects include: school food nutrition or environmental education; addressing the nutritional value of school lunch and breakfast; school gardens or edible school-yards; after-school gardening or snack programs; youth-specific food preparation or cooking classes; restrictions on vending machines or junk food in schools; etc.

5. Is your organization involved in addressing “unhealthy” food media/advertising?
   Examples of these efforts include: addressing low nutrient and fast food marketing (billboards, etc.) particularly targeted to youth.

6. Is your organization involved in promoting drinking water?
   Examples of these efforts include involvement in drinking water education or campaigns (replacing soda or other sugary beverages with water), addressing drinking water quality and standards, etc.

---

Food Waste (Disposal of Food and Food By-Products)

Information Gathering
1. Has your organization conducted a food-waste impact assessment?
   Examples of potential data collection include local or regional landfill impact assessment, pollution/runoff assessment, etc.

Programs and Policy Change
2. Is your organization involved in supporting composting programs or projects?
   Examples of these efforts include: household composting training or support; encouraging municipal composting facilities and composting pickup; encouraging the development of food waste to farm programs; etc.
3. Is your organization involved in supporting **food re-use connections or networking programs**?
   Examples of these efforts include: connecting food sources (restaurants, grocery stores, farmers, etc.) with emergency food distribution services to minimize disposal of eatable food, recycle/reuse food packaging programs, etc.

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**Other (Space for Stories or Any Other Additional Information)**

1. Is there any other information relevant to your organization’s efforts to improve food security and the food system of the Pioneer Valley?
   For example, is there information that you would like us to know and record that this survey might not have covered? What further efforts regarding information gathering, programs and/or policy change would be useful to you?

2. Do you have any additional feedback or comments on this research process or the PVPC regional food security initiative?

3. Is there anything else that you would like to share?

---

**Thank you for taking the time to share your insight and experiences.**
**Your efforts and energy are greatly appreciated.**
## APPENDIX B

### PROGRAM AND POLICY DATA COMPLETE TABLE

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<th>Program/Policy Area</th>
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<th>Periph. involved</th>
<th>Plan to become involved</th>
<th>Partner orgs involved</th>
<th>Maybe for the future</th>
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| Address Unhealthy Food Media/Ad          | 23.8% (5)          | 4.8% (1)        | 4.8% (1)                | 0%                   | 61.9% (13)          | 0%             |       |

| Promote Drinking Water                   | 38.0% (8)          | 14.3% (3)       | 0%                      | 0%                   | 42.9% (9)           | 4.8% (1)       |       |

| Support Compost Programs                 | 38.0% (8)          | 14.3% (3)       | 14.3% (3)               | 4.8% (1)             | 9.5% (2)            | 19.0% (4)      | 0%    |

| Food Re-use Connect / Network            | 33.3% (7)          | 14.3% (3)       | 4.8% (1)                | 4.8% (1)             | 0%                   | 42.9% (9)      | 0%    |
## APPENDIX C
### DATA INFORMATION COMPLETE TABLE

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RESOURCES


