

NORTH AMERICAN FOOD SECTOR, PART ONE:

PROGRAM SCAN & LITERATURE REVIEW



USDN | urban sustainability
directors network

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*Funded by the Innovation Fund of the Urban Sustainability Directors Network,
a Project of the Global Philanthropy Partnership*

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SUGGESTED CITATION

Pansing, Cynthia, John Fisk, Michelle Muldoon, Arlin Wasserman, Stacia Kiraly & Tavia Benjamin. (2013). *North American Food Sector, Part One: Program Scan and Literature Review*. Arlington, VA: Wallace Center at Winrock International.

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PREFACE

This project is a partnership of the City and County of San Francisco and Cities of Minneapolis, Portland, Seattle and Vancouver and is funded through the Innovation Fund of the Urban Sustainability Directors Network, a Project of the Global Philanthropy Partnership, through the support of the Surdna and Summit Foundations. The purpose of this project was to develop a roadmap for cities to create innovative, resilient and productive local and regional food systems that deliver near-term benefits and sustainable value. In mid-2012 the Wallace Center at Winrock International and Changing Tastes were hired by the City and County of San Francisco as consultants to develop this roadmap.

The development of the roadmap was undertaken in two phases. The project team first conducted a comprehensive literature review to survey the sustainable economic development potential of the food sector nationally, and to assemble a set of innovative case studies to complement the national scan. In the second phase, the team drew upon the evidence-based foundation of the literature review and their collective experience and successes to develop the roadmap, focusing upon leverage points in the food system that are within the ability of cities to change. The results of this work are the two companion documents, ***North American Food Sector, Part One: Program Scan and Literature Review*** and ***North American Food Sector, Part Two: Roadmap for City Food Sector Innovation and Investment***.

It is the hope of the project team that these documents will help cities throughout the nation foster innovative food sector investments that would yield sustainable benefits in the form of job creation, higher wages, revenues generated, and increased access to healthy food among all communities. These are now major areas of concern for many metropolitan areas as they become more deeply engaged in food system planning – an increasingly critical need to help create a resilient food system.

As cities use these documents in food sector planning, the project team would welcome any questions, feedback about their utility and ways to improve them in the future. You may contact us about the project at any of the project websites:

City and County of San Francisco Planning Department:

<http://foodsystempolicy.sfplanning.org>

Wallace Center at Winrock International:

<http://www.ngfn.org/cityfoodsector>

Changing Tastes:

<http://changingtastes.net/our-work>

EXECUTIVE SUMMARY

Well into the future, cities will play an increasingly important role in strengthening the food sector, helping to maximize its economic potential and ensure that all residents have access to fresh, healthy food. Filling that role effectively is critically important given that the food sector serves as a linchpin of social, economic, and environmental sustainability and community well-being. And, the food sector also is coming under progressively more strain from potential supply disruptions as a result of increasingly unpredictable weather events.

This active stance is not unique to the food sector. Cities play a unique role in helping to ensure the efficient operation of markets to maximize the public good, including through improving local economies and creating jobs, and in so doing, preventing or redressing market failures, such as waste or pollution. But in parts of the food sector, and particularly for local or sustainable foods, the information available to help cities make informed decisions about the sector's economic benefits is currently fragmented, scattered, and of uneven quality. Nor is there an analytic framework or tool that adequately takes into account and assigns value to the important assets that cities provide.

The purpose of this literature review is to examine an extensive body of the best available research and practices, and to establish a foundation for a roadmap and solid toolkit for cities to spur innovation in the food sector, and thus help improve the adaptability and resilience of communities in the future.

Innovation is critical to meet this latter challenge and also to shift a food sector that is increasingly brittle, failing to deliver essential environmental, economic, public health, and nutritional benefits to urban communities. This study considers innovation in its truest sense: a new way of doing business, a new product or a new service that meets emerging needs, or meets needs that are unknown until it comes to market. New business models and technologies underpin many innovations and the most successful not only succeed as new ventures, but also lead to systemic changes as existing participants change their approaches to remain competitive.

This literature review aims to: a) assemble an objective and credible body of research that cities can use to inform decision-making about where to invest in innovative ventures in the food sector to realize the greatest economic development benefits, particularly through job creation, and b) enhance community access to healthy food. Our team reviewed a broad range of reports, studies, and articles written by researchers in the civic and private sectors and interviewed key individuals to fill gaps in the literature. Some of the literature represents secondary syntheses of relevant material, and in other cases, primary research through direct data collection or direct data supplemented by modeled outcomes. Much of the material we reviewed is relatively recent, having been

“a significant economic driver in terms of growth, job creation, and increasing access to healthy food”

published in the last five to ten years, and we emphasized the last four to five years.

Informed investment guidance comes at a critical time in the economies of metropolitan areas, as the food sector remains both a central element and one that is gaining in importance because of its continuous and stable growth during economic downturns and the need to feed an ever-growing population. Local food revenues also are increasingly significant to the regional economies around major cities, with roughly 80% of the small farms selling food on a local level situated in metropolitan counties or adjacent to them. From both narrow and broader perspectives, cities have an increasingly important role to play in enacting favorable policies and seeding investment in the food sector to catalyze economic opportunity and in helping to create a more sustainable food system that provides access to healthy and nutritious food to all residents.

At the national level, there is comprehensive data about the food sector's economic impacts, including current and projected growth in food sector jobs overall, and by type of food business, and about which supply chain segments offer wages that exceed the national median, and the sector's local multiplier effects. There is also substantive research in the area of the range of expected local economic benefits of food sector investments along the supply chain.

The food sector, from food production through foodservice and retail, remains one of the largest sectors of the economy and one that has continued to grow and create new jobs even through the recent economic downturn. Food sector employment is now growing at about twice the rate of the overall economy. Larger food companies are optimistic about future growth, with 80% of companies forecasting continued growth despite limited ability to raise prices and more than a fifth forecasting growth of 6% or more in coming years, more than twice the rate of growth in the overall economy. Larger food companies also see future growth in the local food market, a belief supported by numerous consumer insights studies, and a plan to invest heavily to meet the growing demand, including acquiring locally owned food companies.

Taken as a whole, the food sector is a favorable one for stimulating economic activity and job creation. Our review found that the food sector has been, and will continue to be, a major source of job creation. But food sector jobs have been and will continue to be of uneven quality, with many at relatively low wages (<\$10/hour) and growth concentrated in certain kinds of businesses, with the greatest growth in foodservice and loss of jobs in food production. Many food businesses create relatively few jobs, with about 91% of all food businesses having fewer than 50 employees.

We found through the literature review evidence suggesting that investing in new ventures within select supply chain segments would generate the greatest local economic benefits in terms of increased local revenues, jobs, wages, and access to healthy food:

- In priority order, processing and retail/consumption (including foodservice) have the greatest economic benefits, depending on the strength of the local infrastructure and related asset base.

- Processing overall has the largest jobs impact with respect to number of jobs created, their stability and potential career paths, and wages (roughly comparable to foodservice on an hourly basis).
- Processing and retail/foodservice provide higher wages overall and have the highest growth potential.
- Food waste reduction and recovery is an area with high potential that may deliver local economic development benefits, particularly in creating/processing value-added products from and stimulating markets for fruit and vegetable “seconds” and for near expiry food.
- Ownership structure (e.g., public/private partnerships or cooperatives) can help spread risk and thereby enhance economic return.

To obtain more on-the-ground, granular information about local economic benefit of food sector investments, as well as the most promising examples for achieving these benefits, our team reviewed a wide variety of innovative food ventures operating in urban areas, with an eye toward highlighting and learning from examples that had the greatest impact on local economic development, job creation, and increasing access to healthy affordable food. They show that there is no one-size-fits-all model when it comes to innovation, and what works for one city may not work for another. The successful innovations identified in this research reveal that the best models are those which are diversified and integrated, in that they have multiple consumer segments, multiple market channels, and diversified for profit/nonprofit revenue streams.

Taken as a whole, the set of innovations and case studies reviewed suggest that the local and regional food sector has both the potential to act as a significant economic driver in terms of growth, job creation, and increasing access to healthy food, and in fact is already beginning to doing so in at least some small ways. From the well-researched work of farmers markets, to the increasingly sophisticated negotiation of food supply and demand of regional food hubs, to the cutting-edge combinations of food business incubators, commercial/community kitchens, and shared processing/training facilities, the local and regional food sector is both slowly building upon mature systems of growth and job creation, and more quickly reconfiguring these systems to better meet increasing demand for healthy affordable food.

There is much variation both between and within these categories of innovation, especially in terms of types and levels of investment needed to support sustained growth. In most categories, there is insufficient data to make broad generalizations about potential return on investment in local food ventures. For example, while food hubs around the country are quickly expanding, the sizes of their operations vary greatly, as do their impacts and relevance to their local food economies. Meanwhile, most investments made in food technology businesses have been private, in the range of \$1-2 million. But there is little data on what the impact of these particular investments has been or broader research on where in the sector investment is most needed.

Nonetheless, it is worth noting that as each kind of innovative business model grows and matures, there is increasingly more information available on what is working and what is not, however informal and inconsistent the information may be. And, as this information grows, the innovation also becomes less novel and more established. This is critical for understanding where, how, and how much to invest or support specific policy or incentive strategies. For example, decades of experience in farmers markets and public markets have yielded much knowledge on characteristics that support sustainability and growth, and the role of policies and investments in this process. Less information exists about newer kinds of innovative food ventures, but some have the potential to deliver more significant benefits until proven otherwise.

Still, our research suggests that right now, some categories of innovations have more potential for investment or policy impact on local and regional economic development and job creation than others:

- **Local/regional food hubs:** These ventures provide a single location dedicated to processing, marketing, and distribution of regionally grown foods. While some may only directly provide around 15 jobs on average, the largest among them contribute to job creation throughout the local food supply chain.
- **Food business technology companies:** These range in size from 7-70 employees, but are a source of high-skill, high-pay jobs, are quickly expanding, and are an important intermediary in meeting fast-growing demand and shaping consumer demand.
- **Food business incubators:** These “businesses that create businesses” provide the local learning infrastructure to decrease the failure rate of new businesses (from 56% to 13%), and bring job training and business ownership opportunities to historically excluded populations.
- **Farm to institution-supporting businesses:** There is tremendous demand from institutions for regional sourcing, but a growing need for intermediaries to manage relationships and logistics; these businesses are bridging this gap, and a growing body of knowledge is helping to understand how to best deliver economic benefit to both buyers and suppliers.

Moving forward, this literature review serves as the foundation for the accompanying document, ***North American Food Sector, Part Two: Roadmap for City Food Sector Innovation and Investment***. This roadmap provides a planning platform and set of tools and strategies for investment that are designed to create resilient and productive local and regionally based food systems that deliver both near-term benefits and create enduring value. Through this work, the team looks to synthesize and refashion proven and valuable tools for guiding investment decisions from both the private and civic sectors, for the benefit of cities and local communities.

SECTION ONE: INTRODUCTION

In this report, we present the results of our literature review of best practices for food sector innovations, documenting their economic development impacts and potential. We have worked inductively, assessing and drawing conclusions from the literature review about the economic development impacts of food sector innovations in urban areas. For the purpose of this work, we define food sector “innovation” as a discrete program, project, or policy that uses a new business model, or delivers new products and services, that either have demonstrated or have the potential for significant socioeconomic, health and nutrition, and environmental impacts, with an emphasis on economic development.

As a building block for future work, our review comprises two major parts. The first part, a synthesis of North American studies on economic development outcomes from food sector investments in urban areas, is built on a review of over 100 reports, studies, and articles, and data sets. Sources include peer-reviewed journals, notable food sector researchers and organizations, as well as a number of innovative city plans and food assessments, reflecting current economic development-focused work on the ground.

The second part, a compilation of innovation case studies with details on planning, funding, implementation, and outcomes, draws on over 200 sources, as well as primary research. We drew on academic sources, but also on a wide range of nonprofit and business sector research, company and organizational websites, interviews, popular media coverage of innovative cases, and government data. In total, we present over a dozen case studies (both in the body of the report, and included in the Appendix) representing innovations across eight areas: food hubs, food incubators, technology and social media, farmers markets, farm to institution, mobile markets, urban agriculture, and food waste recovery.

Taken together, this body of research informs the next step in our work, a framework that cities may use as a guide in inventorying and assessing food related assets and data gaps, as they work toward building resilient and productive, local and regionally based food systems. To this end, the research that follows has emphasized identification of assets and approaches that yield the most benefit in terms of job creation, economic benefit, and increased access to food, while mitigating risk for public sector investors.

SECTION TWO: MAJOR FINDINGS & IMPLICATIONS

MAJOR RESEARCH FINDINGS

Our findings come from our investigation of two distinct and complementary categories of information and analysis. Macro-level information and analysis helps us identify the overall trends and patterns among the hundreds of thousands of businesses employing tens of millions of people, and draw from work that examines the food sector at the regional, state, and national level. Selected case studies examine more innovative approaches, some unique or with relatively few examples, from an anecdotal perspective, and help us understand the keys to success, obstacles for innovators and entrepreneurs, whether their models can be successfully expanded or replicated in a single community or in other communities, and how larger scale application may affect an urban food system.

Drawing from our findings from the overall food sector and promising and innovative outliers, our findings focus upon:

- Increased and sustained demand for local food
- Shifts in local/sustainable food business ownership
- Job creation
- Assessing and addressing local food sector risk
- Multipliers as a tool for economic assessment/planning
- Gaps in research



Increased and sustained demand for local food

Increased demand for local food will continue in the foreseeable future, with growth focused in and around urban centers. Research suggests that today 30% of consumers will change where they buy food in order to buy locally or regionally sourced food. And of the top growth areas in the food sector overall, five are related to local and regional sourcing: local meats and seafood, local produce, environmental sustainability, hyper-local sourcing, and farm or estate branded products.

Burgeoning promotion and policy efforts are making an impact in driving demand. USDA's *Choose My Plate* and *Know Your Farmer, Know Your Food* initiatives, as well as the White House's *Let's Move* and *Kitchen Garden* initiatives, are high-profile, consumer-targeted efforts to increase consumption of fruits and vegetables, and in some cases locally and regionally sourced products specifically. And government and institutional policies (including public school districts, colleges and universities, and hospitals) that mandate some portion of food be sourced locally or regionally are becoming more and more common; in some cases such efforts are now facing bottlenecks due to insufficient aggregation and distribution infrastructure, insufficient quality and quantity of supply, or inability to preserve the identity of locally grown foods in mainstream supply chains.

Shifts in local/sustainable food business ownership

Increasingly, larger national and multinational food businesses are taking notice of sharp increases in demand for locally and regionally sourced food, and are taking steps to engage in this market. Over a third of large food companies plan to increase spending on acquisitions of smaller local food businesses, citing significant barriers to transforming their own existing business models to accommodate these new practices. Simultaneously, venture capitalists are also beginning to understand the potential of these shifts in demand, backing the launches of new, small-scale local and sustainable food businesses. Taken together, these shifts are creating a new landscape for local food business: newer, smaller ventures backed by venture capital investment and larger, mature local food businesses, often with access to new funds and resources after they are acquired by larger corporations. Both are focused on expanding supplies of local food, now coming from either large national companies or smaller, independently-owned companies

Job creation

Due to increasing demand and continued investment, jobs in the food sector are likely to increase. Broadly speaking, about 2.2 jobs are created for every \$100,000 in food sales. Job growth will likely be concentrated in specific parts of the supply chain, primarily in processing, foodservice, and retail; there may actually be a loss of jobs in food production. Wages are likely to increase as well, though food sector jobs are of uneven quality in terms of wages, and the increase in wages will ultimately raise the starting costs for new ventures. Finally, because over 90% of food businesses have fewer than 50 employees, it will be important to grow businesses and not just start them.

Assessing and addressing local food sector risk

While the risk of food ventures is only slightly higher than other businesses, this risk is offset by the fact that the cost of failure to communities of these ventures is actually less. This is because their assets are easily absorbed into the economy: they often end in distressed sales to other companies, occupy sites that are easily reusable, and have relatively low debt and inventory levels. Still, amongst food businesses, risk varies substantially. For example, the risks associated with farmers markets and other direct marketing ventures are heightened by vendor turnover related to issues such as food safety, zoning, and permitting, or handling transactions for low-income customers using coupons. Meat, poultry, and dairy vendors also face unique risk from food safety and handling issues of their own. By contrast, food manufacturing and processing (at scale) are among the least risky ventures in any sector. Overall, the sector is a sound investment, with food businesses facing comparable risk, and many of the same start up and management challenges as entrepreneurs and business owners in other sectors.

Multipliers as a tool for economic assessment and planning

Economic multipliers, a measurement of the ripple effect of a set of economic activities in the local or regional economy, provide a useful one-point-in-time tool for understanding economic benefits. Thus, multipliers must be interpreted and used with caution because they cannot adequately reflect future growth. And the studies from which multipliers are calculated vary widely in sample size, methodology, type of multiplier calculated, and reliability of data. Still, they are one of the only indicators providing a snapshot of the potential impacts of a business, investment, or supply chain segment, and provide a common language for communicating this impact between planners, economists, businesses, and communities.

We found multipliers for a range of impacts, including job creation, wages, revenue, tax revenue, and new dollars flowing into the economy, and they allowed us to get a sense of the typical range of impact. Multipliers were particularly useful in providing a bird's eye view of impacts across the supply chain, and clusters of multipliers give a sense of the range of supply chain segment impact for a variety of investment or business types. For example, distribution as a segment of the supply chain typically yields relatively low economic “ripple effects,” but the production and processing segments have the potential for relatively high returns on investment.

Gaps in research

A number of cities have embarked on plans to catalyze local and regional food sector growth, with a broad range of intended impacts including economic development, increased access to affordable healthy food, environmental sustainability, food waste reduction, and improved health outcomes, among others. But little data exists on the successes, challenges, or lessons of these efforts. An understanding of what has—and has not—worked, and why, represents a substantial research gap. This gap is perhaps underscored by the second major gap, a lack of fully evolved indicators and data about the impacts of local and regional food systems investments. There are few agreed upon instruments or mechanisms to measure the impact of investments in this sector, nor is there consensus on what type of data might be most useful in guiding investment and action. Our research, then, suggests some potential pathways for developing an

appropriate slate of shared indicators that best capture changes in the food system, in ways that might inform cities' investments and policy efforts in the sector.

MAJOR IMPLICATIONS OF RESEARCH

In thinking about how cities might be poised to capitalize on the opportunities and gaps revealed through our research, there are two important issues to note. The first is that food sector investments and policy interventions should be seen through the lens of the supply chain, and that many different kinds of business are involved in moving food from farm and ranch to restaurant and grocer, including processing, distribution, and a host of allied businesses. As the findings above on multipliers suggest, particular segments of the supply chain will yield varying impacts from investment; indeed, even particular business models, types, and ownership structures within segments have higher return potential. Our insights on these particular areas are described briefly below, and in greater depth throughout the report.

The second issue to note is that policy and investment priorities and potential will necessarily vary based on city characteristics, assets, and goals. While this is reiterated below, it is an important lens through which to view the majority of these implications: each city should take into account its own aims and assets as it develops strategies for food sector investment. This topic is explored further in *North American Food Sector, Part Two: Roadmap for City Food Sector Innovation and Investment*.

Opportunities for higher impact investment

- **Processing and retail/consumption/foodservice.** In terms of potential high-return segments of the supply chain, processing is among the most promising. This includes benefits derived from extending the season for fresh foods, increasing the utilization of seconds, and combining with business incubators and job training programs to increase job creation. Similarly, both our macroeconomic and case study research yielded strong evidence for the high return potential of particular innovation categories such as farmers markets.
- **Fruits, vegetables, and meats.** Increasing the supply of fruits and vegetables is the single most important overall investment, with multiple economic, environmental, and health benefits up the supply chain. Because these benefits overlap with the goals of agencies at the state and federal level, efforts targeted at increasing the supply of fruits and vegetables may even attract matching funds. And locally sourced meats appeal to a variety of buyers, from high-end restaurants serving tourist crowds to the high-growth foodservice sector, and offer opportunities for value-added and niche products.
- **Urban investment for urban impact.** As clusters of creativity and innovation, cities are in a unique position to invest in innovative business models and approaches to local food systems challenges. And they have the population density, and thus demand, for successful efforts to be taken to scale. Cities should look for opportunities to add

value to supply from regional farms and develop technologies that offer services across the supply chain. Depending on a city's assets and goals, investments may need to focus on the supply side, but supply side efforts are strengthened by programs and policies targeting food businesses that source locally, and that are locally owned.

- ***Rural investment for rural/urban impact.*** Approximately 80% of small farms that sell food locally and regionally are in or adjacent to major metropolitan areas. City investment (perhaps in partnership with regional or state actors) in supply-side infrastructure based in rural areas has the potential to address bottlenecks and barriers in connecting (rural) supply to (urban) demand, while strengthening the resilience of rural areas and their capacity to respond to increased demand over time. In fact, successful and sustainable regional food businesses based in urban areas are necessarily dependent on the success and sustainability of these farms.
- ***Investment for job creation.*** Investing in the food sector is one of the best opportunities to create jobs—but not always high wage jobs. There may be a trade-off between creating a few high paying jobs, or creating more lower-wage jobs, and this difference is attributable in part to where along the supply chain investments are made (foodservice, for example, typically yields lower paying jobs). Though wages in the sector are increasing overall, ultimately cities should approach the question of where to invest for job creation from the perspective of what impacts they hope to realize: more jobs overall or more higher-paying jobs.
- ***Increasing access to start up and expansion capital.*** Food ventures, like most small businesses, require capital to grow and create jobs, albeit often in smaller amounts. A mix of shortcomings in terms of business management skills, business models that don't match early stage investor expectations, and a lack of understanding of the unique nature of the food sector among established lenders, creates numerous obstacles that cities can overcome by creating new financial vehicles and increasing the awareness of food-related opportunities for their private investor or lending institutions. Combining this approach with an investment in business incubators and food business technical assistance will help generate solid investments matched to available capital.

Emerging opportunities for investment



- ***Food waste prevention through timely sale.*** The "short sale" retail for food almost ready to expire has been a viable business for decades through discount outlets and a new wave of social media technologies that now bring a similar "flash sale" approach to short sales in mainstream grocery and retail. To date, no significant ventures have focused on regional food systems.

- ***Food waste prevention through processing of value-added seconds.*** After farms have been harvested, the product that remains from mechanical harvesting, sometimes called "seconds," can be gleaned by hand and used in a variety of ways. A number of city and nonprofit programs are finding innovative uses for getting these

seconds to consumers, particularly to vulnerable populations, and/or those with low access to fresh foods. In addition to systems for supplying and distributing seconds, there is the opportunity to invest in operations that process seconds into value-added products.

- ***Food clusters that mix diverse businesses, including a retail component.*** While “food clusters” are frequently discussed, they are not well defined beyond the basic concept that locating several food businesses in the same area may foster collaboration, innovation, and sharing of infrastructure, as well as well as reduce transportation and storage costs. Our review has found that locating businesses of a similar or competing nature together can have negative effects. The exception is new business incubators that co-locate many very small businesses that are all in their start-up phase, and therefore benefit dramatically from shared infrastructure, and from avoiding start-up costs and time consuming permitting. There also may be benefit from co-locating businesses that fill different roles, especially if they include a retail component to diversify revenue sources and capture the value added by the related businesses.

Opportunities for city-level policy and action

- ***Technical assistance.*** As with entrepreneurs in other sectors, food sector entrepreneurs would benefit from investments in capacity building and technical assistance in business skills and risk reduction techniques. While the research suggests particular need at the project start-up phase, ongoing management training is necessary as well.
- ***Direct public financing.*** Cities are seeing returns on direct financing mechanisms such as place-based federal pass-through funding and federal empowerment zones, which focus on community-defined economic and social development impacts.
- ***Land use policies.*** Of particular interest in urban areas is the issue of land use barriers and zoning issues. Cities are finding that policies that simply allow more flexibility in land use catalyze innovative use of urban spaces. For example, assemblage of adjacent plots of unused land in a neighborhood opens up new possibilities for use.
- ***Food safety regulations.*** Typically designed with larger companies in mind, food safety regulations can be difficult, time consuming, and therefore more expensive, for smaller companies to meet. Examination of these policies through the lens of smaller food businesses, and the range of businesses affected, has the potential to reduce risks and costs in the sector while maintaining high levels of food safety.
- ***Straightforward and streamlined services.*** Complicated or multi-office permitting processes remain an obstacle. Coordinating and streamlining city governance functions related to the food sector would reduce obstacles for new ventures.

Taken together, our research into both macro-level trends and conditions, and the potential of new and innovative approaches with shorter records of performance, show significant opportunities for driving economic development including job creation through investing in select parts of the food sector and some additional opportunities that show potential. And we found that in both instances, cities can drive more and faster improvements through targeted policies and actions.

SECTION THREE: THE ECONOMIC DEVELOPMENT POTENTIAL OF THE FOOD SECTOR

INTRODUCTION

Cities play a unique role in helping to ensure the efficient operation of markets to maximize the public good, including improving local economies and creating jobs, and in so doing, preventing or redressing market failures (e.g., externalities such as waste or pollution). But in the food sector, particularly with local or sustainable foods, there is currently only fragmented or scattered information available to help cities make informed decisions about the sector's economic benefits. And there is yet to be an analytic framework or tool that adequately takes into account and values the unique assets that cities provide.

In the economies of metropolitan areas, the food sector is a central element that is gaining in importance because of its continuous and stable growth during economic downturns and the need to feed an ever-growing population. Increasingly, local food revenues are gaining in importance to metropolitan economies, with roughly 80% of the small farms selling food on a local level situated in metropolitan counties or adjacent to them.¹ Cities have an increasingly important role to play in strategically seeding investment in the food sector to catalyze economic opportunity, and thereby helping to create a more sustainable food system that all residents can access.

The purpose of this section of the report is to review and synthesize the body of national literature that addresses the role of the food sector, particularly the local food sector, in building local economies, and to identify how cities can harness and foster this growth. Our team draws upon the best available information throughout the nation to aid in the development of a roadmap for local government decision-making about food sector investments.

¹ Low, S. & Vogel, S. (2011). *Direct and intermediated marketing of local foods in the United States*. ERR-128. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service.

APPROACH TO REVIEWING FOOD SECTOR AND ECONOMIC DEVELOPMENT LITERATURE

For this section, our team surveyed a wide range of national literature that addresses the question of the role of the food sector, particularly the local food sector, in building local economies, and how cities can foster this growth. We examined more than 100 reports, studies, and articles, many of which are peer-reviewed, to attempt to answer these questions. Most of these reports are considered to be nationally-credible and some offer leading-edge perspectives. As such, they are frequently cited. Many are written by notable food sector researchers who represent respected organizations (e.g., Union of Concerned Scientists, PolicyLink, Initiative for a Competitive Inner City); agencies (e.g., USDA Economic Research Service); institutions (e.g., University of Minnesota, Iowa State University); and foundations (e.g., Rockefeller Brothers Fund). We also drew on the growing body of noteworthy and innovative city plans and food assessments to help provide on-the-ground perspectives and examples of how and where food sector investments yield local economic benefits.

Through this wide range of literature at national, state, regional, and urban levels, we attempted to provide a three-dimensional examination of the economic impacts (i.e., local economic benefits, jobs and wages, and access to healthy food) of the food sector supply chain from production to consumption.

To the extent feasible, this component of the report focuses on how and where cities could invest to have the greatest benefit in building the local economy overall, creating jobs, increasing wages above the average, and providing access to healthy food for diverse communities.

When the literature supports it, we have identified where opportunities and challenges seem to lie in fostering local economic growth in metropolitan food sectors. We also found clear gaps in the literature that are not only areas for further work nationally, but are also areas where cities could play an increasingly important role in developing new data.

This component of the report is divided into four primary sections:

- 1. *National food sector trend data***
- 2. *Making the case for local economic impacts of food investments***
 - a. Gauging local economic benefits of food investments, from dollars to jobs
 - b. Gauging access to healthy, local, affordable food
 - c. Externalities to capture through investment
 - d. Indicators of performance
 - e. Risk for entrepreneurs, new ventures, and investors
 - f. Where greatest local economic benefits seem to be generated

3. What cities are doing to strengthen the local food sector

- a. Overview of what cities are doing to support the food sector
- b. Tools and strategies that cities use to support the local food sector
- c. The most promising approaches by cities to maximize economic development potential of the food sector

4. Gaps in the national and local level literature and how to address them**NATIONAL FOOD SECTOR TREND DATA**

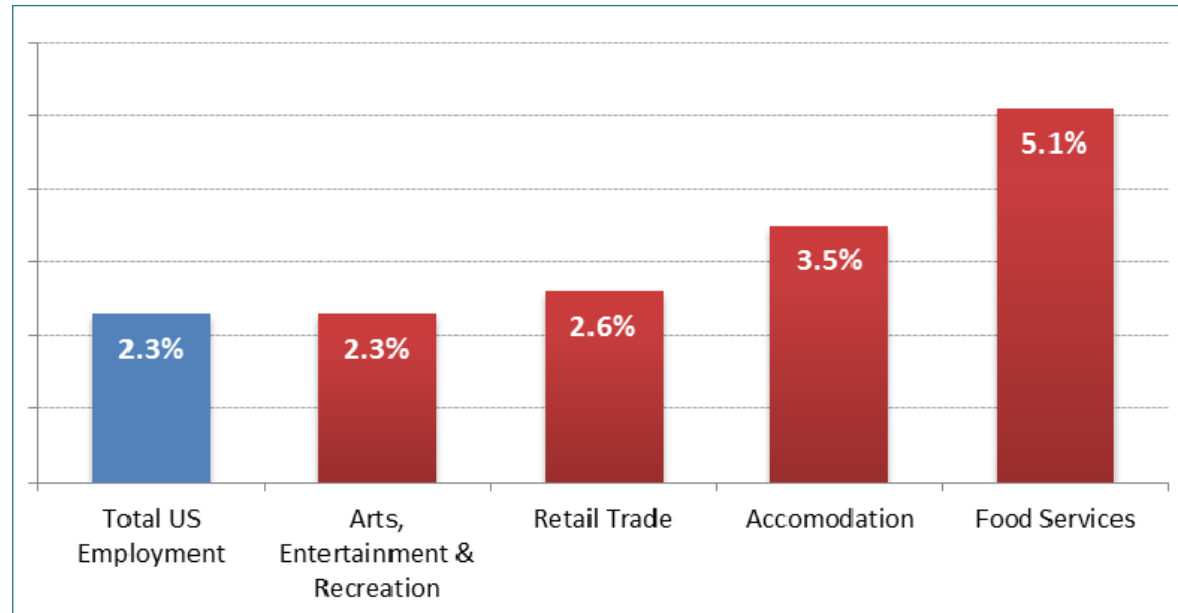
The food sector, from food production through foodservice and retail, remains one of the largest sectors of our economy and one that has continued to grow and create new jobs even through the recent economic downturn. Food sector employment is now growing at about twice the rate of the overall economy. Taken as a whole, the food sector is a favorable one for stimulating economic activity and job creation. Larger food companies are optimistic about future growth, with 80% of companies forecasting continued growth despite limited ability to raise prices and more than a fifth forecasting growth of 6% or more in coming years, more than twice the rate of growth in the overall economy.²

But within the sector, the quality of jobs created has been very uneven over the past several years, and future growth and job creation prospects are highly variable among different types of businesses and job categories.

Our review looked at the current state of the food sector, and forecasts for the next several years, including overall condition, job creation, and wages. We also reviewed the US Department of Labor analysis of recent historic data on job and wage data by North American Industry Classification System (NAICS) code to provide near-term forecasts. We considered additional studies developed for metropolitan regions, and studies and business surveys conducted by the food industry and management consultants serving this industry, such as KPMG's annual survey of food industry executives about their business plans and priorities for the next three years. Finally, we looked at analysis and forecasts for those seeking to invest in the food sector, including material from Dow Jones/Wall St. Journal and Bloomberg.

Our review found that the food sector has been, and will be, a major source of job creation. But food sector jobs have been and will continue to be of uneven quality, with many at relatively low wages (<\$10/hour) and growth concentrated in certain kinds of businesses, with the greatest growth in foodservice and loss of jobs in food production. Many food businesses create relatively few jobs, with about 91% of all food businesses having fewer than 50 employees.

² Dolan, P., Hughes, M., Hagarty, B., Theodoropoulos, T., Giometti, A., & Kansal, R. (2012). *KPMG food and beverage industry outlook survey: Executives plan to spend and invest in recipe for growth*, KPMG LLP.

Table 1 - Comparison of Employment Growth by Industry 2010-2012

Source: National Employment Law Project 2012

However, wages and on-the-job training will increase at a more rapid pace as businesses compete for talent amidst a shortage of skilled workers, especially in foodservice, retail, and processing. More than 53% of large food companies expect to increase hiring in the next few years.³ But improved wage and job benefits are not likely to carry over to less skilled workers, with 60% of jobs requiring no more than a high school diploma.

³ Dolan, P., Hughes, M., Hagarty, B., Theodoropoulos, T., Giometti, A., & Kansal, R. (2012). *KPMG food and beverage industry outlook survey: Executives plan to spend and invest in recipe for growth*, KPMG LLP.

Table 2 - Select 2010 National Food Sector Annual and Hourly Wages

Occupation	Range Data	Avg Annual Income	Avg. Hourly Wage
Agriculture		\$18,970	\$9.12
Fishers and Related	All	\$25,590	\$12.30
Food Processing	All	\$23,950	\$11.51
	Butchers	\$28,600	
	Baking and Machine Operators	\$27,140	
	Meat & Poultry Cutters	\$22,330	
Bakers		\$23,450	\$11.27
Kitchen	All	\$40,630	\$19.53
	Food Service	\$42,380	
	Full Service Restaurant	\$38,520	
	Limited Service (QSR)	\$27,840	
	Food Preparation Workers	\$19,100	\$9.18
	Cooks	\$20,260	\$9.74
Food and Beverage Serving		\$18,130	\$8.72

Source: US Department of Labor, Bureau of Labor Statistics, 2013

Also, a host of factors have come together to increase the market for local, healthy, and sustainable foods, including fresh fruits and vegetables. National sales of organic foods have almost reached \$25 billion, and local food sales were forecast to grow from \$5 billion to \$7 billion by 2011.⁴ Meanwhile, direct-to-consumer sales more than doubled between 1991 and 2007, from \$551 million to \$1.2 billion,⁵ with the number of farmers markets increasing 70% in the last decade and the number of Community Supported Agriculture programs (CSAs) topping 12,000. The direct-to-consumer local food

4 Curtis, J., Creamer, N., & Thraves, T. E., (2010). *From farm to fork: A guide to building North Carolina's sustainable food economy*. Raleigh: North Carolina State University, Center for Environmental Farming Systems.

5 Southwestern Wisconsin Regional Planning Commission. (2013). *Local food prospectus for the tri-state region: Analysis of the wholesale fruit and vegetable industry in Illinois, Iowa and Wisconsin*.

marketplace is centralized in urban areas, with 85% of direct farm-to-consumer sales in metropolitan regions and 80% of small farms located near urban centers.

The growth in demand for local food, including fresh fruits and vegetables, will continue for at least several years as major drivers of additional demand come into play. Among the top trends for chefs and foodservice companies, the National Restaurant Association found that five are related to local products: locally sourced meats and seafood (#1), locally grown produce (#2), environmental sustainability (#4), hyper-local sourcing (#7) and farm/estate branded items (#11).⁶ Meanwhile, USDA's *My Plate* and other related healthy food promotion efforts continue to drive an increase in the market for fresh fruits and vegetables, including locally grown foods.⁷ Today, 30% of consumers are willing to change where they shop in order to buy local food.⁸

The response to this growing opportunity from large food companies and investors over the next few years will reshape the landscape for local food. More than a third of large food companies plan to increase their spending on acquisitions to buy up smaller business that focus on local food.⁹ For many, their internal cultures are a major barrier to responding to new consumer preferences on their own,¹⁰ while only 15% plan to invest in any type of business model transformation. At the same time, venture capital investors are backing the launch of more local and sustainable food ventures. The two come together to create a decline in the number of established, locally owned business that offer local, healthy, and sustainable foods, and an increase in the availability of local food from both the world's largest food companies and very new and small companies.

For local governments and economic development agencies, national trends provide some clear insights:

- Jobs and wages in the food sector are likely to increase, which is a positive development for skilled job seekers and employees, especially those in foodservice, retail, and processing. This makes the competition for talent more intense and raises the cost of starting a new food venture, but also opens doors for food sector training opportunities.
- Revenue for food companies is expected to rise faster than the rate of inflation, but charging consumers more for food will remain challenging.

⁶ National Restaurant Association 2012.

⁷ Watrous, M. (2013). Consumers crave farm-to-table freshness. Food Business News.

⁸ Ibid.

⁹ Dolan, P., Hughes, M., Hagarty, B., Theodoropoulos, T., Giometti, A., & Kansal, R. (2012). *KPMG food and beverage industry outlook survey: Executives plan to spend and invest in recipe for growth*, KPMG LLP.

¹⁰ Ibid.

- The local food segment will continue to grow rapidly, and its growth will remain focused around urban centers.
- Large food companies are likely to buy an increasing number of existing smaller, private, and locally owned food companies. There may be fewer locally owned businesses around to meet the growing demand. But new market opportunity can be created by institutional and local government policies that mandate the purchase of locally grown food from locally owned businesses. New locally owned companies may find a highly favorable market in cities that have these kinds of targeted local food procurement policies or that have major institutions such as schools, colleges, and hospitals with such policies.

MAKING THE CASE FOR LOCAL ECONOMIC IMPACTS OF FOOD INVESTMENTS

Our review aimed to assemble an objective and credible body of research that cities could use to estimate economic development benefits and to inform decision-making about where to invest in innovative ventures in the food sector. Our team reviewed a broad range of reports, studies, and articles written by researchers in the public, civic, and private sectors. Some of the literature represents secondary analysis of relevant material, while much included primary research based on direct data collection or direct data supplemented by modeled outcomes.

Much of the material we reviewed is relatively recent, having been published in the last five to ten years, and we emphasized the last four to five years for currency's sake. Overall, the past decade has been a fertile one for city efforts that include the local food supply chain in local plans and city-funded or supported projects.

Our team also paid special attention to literature that examines the economic development and equity benefits of the food sector, and particularly local food, in term of job creation, wage increases, and improved access to healthy food. Our findings fall into six areas that are relevant to city-wide decision-making about investments in food sector innovations:

- A. *Gauging local economic benefits of food investments, from dollars to jobs*
- B. *Gauging access to healthy, local, affordable food*
- C. *Externalities to capture through investment*
- D. *Indicators of performance*
- E. *Risk for entrepreneurs, new ventures, and investors*
- F. *Where the greatest local economic benefits seem to be generated*
- G. *Information technology and social media: an emerging, innovative, and disruptive force in the food sector*

A. Gauging Local Economic Benefits of Food Investments, from Dollars to Jobs

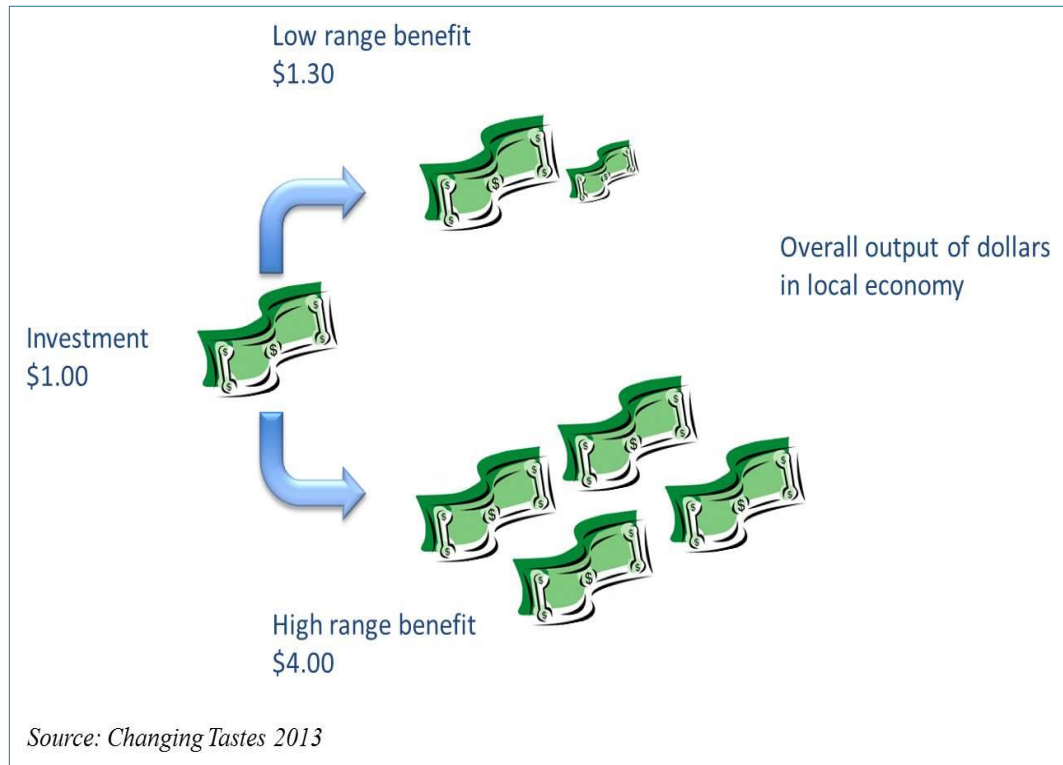
What are the local economic benefits of food investments in dollars and jobs, and how do we gauge them? National research demonstrates that locally owned investments in general have significant local economic benefits. As Michael

Shuman indicates, “[g]rowing evidence suggests that every dollar spent at a locally owned business generates two to four times more economic benefit—measured in income, wealth, jobs, and tax revenue—than a dollar spent at a globally owned business.”¹¹ With local food investments in particular, Dr. Rob King et al. concludes that “[a]lmost all of the wage and business proprietor income generated in the local food supply chains (direct and intermediated) accrues within their respective local areas.” By point of comparison, while mainstream or commodity supply chains also contribute between 50% to 100% of wages and income to the local economy, “...most supply chain functions tend to be performed locally,” even though the product or its components may originate outside the locality.¹²

In the present body of literature, how are economic benefits of the food sector gauged? One of the primary tools used is the “multiplier,” or the extent to which money spent on goods or services provided by a business in turn has “ripple effects” throughout the local economy in the forms of job creation, income enhancement, increased tax revenues, and should the impact be large enough, perhaps even the regional GDP. Potentially, a locally owned and operated business that employs only local residents, and sells its products and services locally, could have a greater multiplier effect than other types of businesses, even ones that are locally owned and sell their products and services elsewhere, or businesses located elsewhere that sell products and services in a given community.

11 Shuman, Michael. 2009. “Local Stock Exchanges and National Stimulus.” *Community Development Investment Review*. Federal Reserve Bank, San Francisco 5(2): 81-84.

12 King, R. P., Anderson, M., DiGiacomo, G., Mulla, D., & Wallinga, D. (2012). *State level food system indicators*. Unpublished report. Healthy Foods, Healthy Lives Institute, University of Minnesota.

Figure 1 - Overall Multiplier Effect of Local Food Investment

In scanning the landscape of available literature for credible multiplier data that would help quantify the economic impacts of local food sector businesses, our team found a mixed and uneven collection of multiplier research along the supply chain. Some of the research does indeed fall within the two to fourfold range that Shuman indicates for local businesses as a whole. But this is highly dependent on which component of the supply chain is under consideration. The body of literature is deeper along three, more well-studied segments of the supply chain (production, processing, and retail/consumption) and less so in the fourth (distribution). There is a relative wealth of information about the benefits of farmers markets and other dimensions of the wholesale/retail segment as compared to other segments of the food sector. **Figure 1** illustrates the range of local dollars generated per

dollar of investment that can occur across the food supply chain, as shown in the relevant body of national research.

Table 3 shows the range in **local economic output multipliers** – the output or flow of local dollars that results from a particular business – across the supply chain as reflected in the literature reviewed. This table is organized by type of food industry business, or innovation category, in the supply chain.

Table 3 - Local Economic Output Multiplier by Supply Chain Segment (Part A)

Supply Chain Segment	Category	Multiplier	Geographic Area	Source
Production	Fruits and vegetables	1.55	Statewide (SC)	Carpio et al 2007
(range 1.55 to 2.6)	Fruits and vegetables	1.57	Statewide (MI)	Swenson 2010
	Fruits and vegetables	1.58	Statewide (IA)	Swenson 2010, 2011
	Fruits and vegetables	1.59	Statewide (WI)	Swenson 2010
	Fruits and vegetables	1.61	Statewide (MN)	Swenson 2010
	Fruits and vegetables	1.62	Statewide (IN)	Swenson 2010
	Fruits and vegetables	1.65	Statewide (IL)	Swenson 2010
	Vegetable and melon farming	1.94	Urban/periurban/rural (NY)	Hawes et al 2011
	Fruit farming	2.03	Urban/periurban/rural (NY)	Hawes et al 2011
	Farmers grow local	1.7	Statewide (NC)	Curtis et al 2010
	Dairy	1.71	Statewide (VT)	O'Hara 2012
	Dairy	2.1	Statewide (MN)	O'Hara 2012
	Farms and ranches	1.75 to 1.93	Urban/periurban/rural (WA)	Sonntag 2008
	Small farms in small farm area	2.2 to 2.6	Rural (WI)	Swain 1999
	<i>Segment average (minus hi/lo)</i>	1.84		
Processing	Manufacturers/processors	1.37 to 1.7	Urban/periurban/rural (WA)	Sonntag 2008
(range 1.37 to 1.9)	Cookie, crackers, pasta mftg.	1.84	Urban/periurban/rural (NY)	Hawes et al 2011
	Bread and bakery mftg.	1.9	Urban/periurban/rural (NY)	Hawes et al 2011
	<i>Segment average (minus hi/lo)</i>	1.77		

Table 3 - Local Economic Output Multiplier by Supply Chain Segment (Part B)

Supply Chain Segment	Category	Multiplier	Geographic Area	Source
Distribution	Distributors	1.16	Urban (WA)	Sonntag 2008
(range 1.16 to 4)	Food hubs	2.6	Rural (SW WI)	Lit review case studies
	Food hubs	4	Urban (Toronto, ON)	Lit review case studies
	<i>Segment average (minus hi/lo)</i>	2.6		
Retail/Consumption	Local food sales to consumers	1.3	Rural towns/urban areas	Meter 2011
(range 1.3 to 2.8)	Farmers markets	1.58	Statewide (IA)	Otto et al 2005
	Farmers markets	1.61 to 1.65	National average	Lit review case studies
	Farmers markets	1.78	Statewide (OK)	O'Hara 2011 (op cit)
	Farmers markets	2.66	Statewide (GA)	Rhoads et al 2009
	Farmers markets	2.8	Statewide (NC)	Curtis et al 2010
	Market management	2.27	Urban (WA, OH, MO, NY)	Econsult 2007
	Grocers	1.48 to 1.72	Urban/periurban/rural (WA)	Sonntag 2008
	Local restaurant	1.7	Statewide (NC)	Curtis et al 2010
	Local restaurant	2.2	National average	Rhoads et al 2009
	Restaurants/food service	1.67 to 1.88	Urban/periurban/rural (WA)	Sonntag 2008
	Restaurant buying local	1.9	Urban (IA)	Swenson 2010, 2011
	Farm to school (lunches)	1.86	Urban (OR)	Kane et al 2009
	Farm to school (lunches)	1.87	Urban (OR)	Ecotrust 2009
	SNAP incentives	1.8	National average	Hanson 2010
	<i>Segment average (minus hi/lo)</i>	1.94		

As is shown in **Table 3**, the literature we reviewed is lacking in similarly reliable information about distribution multipliers. Other research suggests that this lack of data has more to do with the sometimes more limited local economic benefits of narrowly defined distribution mechanisms, or in the case of food hubs, may be attributable to how difficult it can be to disaggregate and gauge the local, direct, and induced economic benefits of a specific distribution hub from the larger infrastructure. The case studies in [Section Five](#) of this report help flesh out this data gap. For point of comparison, estimated multipliers from two of the distribution case studies are included in the table above.

Another contributor to the uneven quality of the research overall, one that can make it difficult to extrapolate across the supply chain, is the sample size, or number of businesses studied, that underlies the work we reviewed. Several researchers based their findings on very small sample sizes within specific communities or regions^{13 14} in addition to specific segments of the supply chain. Other researchers relied on very large databases that are aggregated and analyzed via economic output models such as IMPLAN or REMI.^{15 16 17 18}

It is important to note that those multipliers estimated using the regional model IMPLAN and similar approaches tend to underestimate local economic benefit and produce more conservative figures. This model does not distinguish between locally and non-locally owned businesses. Nor does it factor out non-local retail or the added value or elasticities of local food.¹⁹ In addition, the NAICS code base for food businesses included in these models can be too narrowly defined to adequately reflect the collective impacts of both small-scale food business entrepreneurs and multipurpose and large-scale food projects such as food hubs.

For example, in a study of the Northeast Ohio economy, including Cleveland, a regional data set was used to develop multipliers for food businesses along three segments of the supply chain (production, processing, and distribution) to yield local economic benefits in terms of overall output of local dollars and job creation.²⁰ This comprehensive study relies on one of the largest data sets our team found, which covers a major metropolitan area. The study is also one of the few to have employment multipliers identified for a sizeable data set.

13 Sonntag, V. (2008). *Why local linkages matter: Findings from the local food economy study*. Sustainable Seattle.

14 Meter, K. (2011). Learning how to multiply. *Journal of Agriculture, Food Systems, and Community Development*, 1(2), 9–12. <http://www.agdevjournal.com/volume-1-issue-2/149-metrics-from-the-field-learning-how-to-multiply.html>

15 Sporleder, T. L. (2007). NEOHFOOD: A Northeast Ohio food industries input-output model.

16 Deller, S., Hoyt, A., Hueth, B., & Sundarem-Stukel, R. (2009). *Research on the economic impact of cooperatives*. University of Wisconsin Center for Cooperatives.

17 Southwestern Wisconsin Regional Planning Commission. (2013). *Local food prospectus for the tri-state region: Analysis of the wholesale fruit and vegetable industry in Illinois, Iowa and Wisconsin*.

18 Masi, B., Schaller, L., & Shuman, M. (2010). *The 25% shift: The benefits of food localization for Northeast Ohio and how to realize them*. Cleveland Foundation, ParkWorks, Kent State University Cleveland Urban Design Collaborative, Neighborhood Progress Inc., Cleveland-Cuyahoga County Food Policy Coalition.

19 Ibid.

20 Sporleder, T. L. (2007). NEOHFOOD: A Northeast Ohio food industries input-output model.

Figure 2 - Overall Jobs Multiplier Effect of Local Food Investment

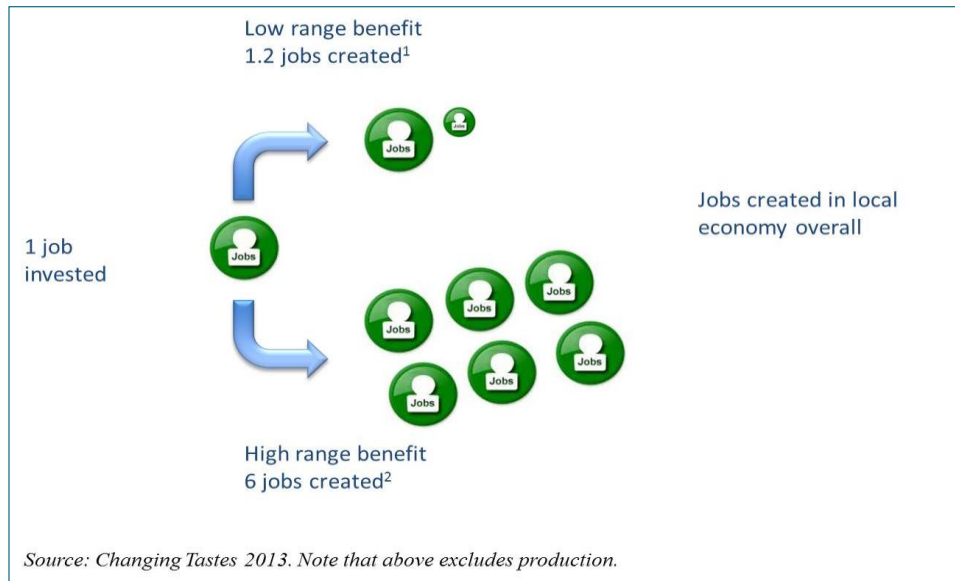


Table 4 combines **jobs or employment multiplier data** by supply chain segment from this Ohio study with similar data from other notable national sources. For comparative purposes, output and gross regional product multipliers are also included in this table. Consistent with other research, this survey of multiplier estimates shows that the processing segment holds the greatest potential for job creation, with an order of magnitude of nearly two to three times the local economic output multiplier. This is likely in part a function of job density and space requirements compared to food production. **Figure 2** provides a snapshot of the range of jobs created per initial job invested that can occur across the food supply chain, as shown in the body of national

research reviewed

Another study of multipliers focuses on the **local economic output (revenues), wage, and employment benefits** of several forms of food and agriculture-related cooperatives.²¹ As the first of its kind in the nation, this study of 16,151 cooperatives is important not only for its scope, but also for the perspective it provides on the benefits of a form of shared ownership structure that can help reduce or alleviate risks and other costs of investment (for a more thorough discussion of risk in food sector investments, please see **Part E** below). Tax exemptions for cooperatives and the existence of relevant statutes in every state make cooperatives an attractive business ownership structure option that can occur almost anywhere.

²¹ Deller, Steven et al. 2009. Ibid.

**Table 4 - Local Output, Gross Regional Product,
and Job Multiplier by Supply Chain Segment (Part A)**

Supply Chain Segment	Category	Overall Output	Gross Regional Product	Jobs	Geographic Area	Source
Production	Fruits and vegetables	1.57	1.66	1.83	Statewide (MI)	Swenson 2010
	Fruits and vegetables	1.58	1.63	1.84	Statewide (IA)	Swenson 2010, 2011
	Fruits and vegetables	1.59	1.66	1.95	Statewide (WI)	Swenson 2010
	Fruits and vegetables	1.61	1.72	1.86	Statewide (MN)	Swenson 2010
	Fruits and vegetables	1.62	1.65	1.75	Statewide (IN)	Swenson 2010
	Fruits and vegetables	1.65	1.74	1.67	Statewide (IL)	Swenson 2010
	Dairy cooperatives	1.71	2.29	1.50	Statewide (VT)	O'Hara 2012
	Dairy cooperatives	2.10	3.90	1.88	Statewide (MN)	O'Hara 2012
	Beef/dairy cattle, milk	1.51	2.35	1.38	Urban/periurban/rural (NE OH)	Sporleder 2007
	Poultry/eggs	1.25	1.23	1.55	Urban/periurban/rural (NE OH)	Sporleder 2007
	Hogs/other farm animals	1.47	2.61	1.09	Urban/periurban/rural (NE OH)	Sporleder 2007
	Grains	1.28	1.23	1.06	Urban/periurban/rural (NE OH)	Sporleder 2007
	Nursery/horticulture	1.51	1.38	1.30	Urban/periurban/rural (NE OH)	Sporleder 2007
	Fruits and vegetables	1.30	1.23	1.21	Urban/periurban/rural (NE OH)	Sporleder 2007
	Soybeans/other oil crops	1.25	1.18	1.09	Urban/periurban/rural (NE OH)	Sporleder 2007
	Misc. crops/hay/sugar/nut	1.32	1.26	1.39	Urban/periurban/rural (NE OH)	Sporleder 2007
	<i>Segment avg. (minus hi/lo)</i>	1.50	1.69	1.52		

**Table 4 - Local Output, Gross Regional Product,
and Job Multiplier by Supply Chain Segment (Part B)**

Supply Chain Segment	Category	Overall Output	Gross Regional Product	Jobs	Geographic Area	Source
Processing	Meat, fish, poultry, eggs	1.60	2.58	2.65	Urban/periurban/rural (NE OH)	Sporleder 2007
	Dairy	1.88	3.37	4.69	Urban/periurban/rural (NE OH)	Sporleder 2007
	Grain milling and flour	1.51	3.09	4.40	Urban/periurban/rural (NE OH)	Sporleder 2007
	Fats and oils	1.35	4.53	5.33	Urban/periurban/rural (NE OH)	Sporleder 2007
	Beverages	1.50	2.11	3.23	Urban/periurban/rural (NE OH)	Sporleder 2007
	<i>Segment avg. (minus hi/lo)</i>	1.54	3.01	4.11		
Distribution	Food hub	2.60	N/A	N/A	Southern WI/rural	Dane County 2011
	<i>Segment avg. (minus hi/lo)</i>					
Retail/ Consumption	Farm to school	1.86	2.82	2.43	Urban (OR)	Kane et al 2009
	Farmers markets	1.58	1.58	1.45	Urban (IA)	Otto et al 2009
	Food wholesale/retail	1.65	1.56	1.48	Urban/periurban/rural (NE OH)	Sporleder 2007
	Food service	1.60	1.70	1.20	Urban/periurban/rural (NE OH)	Sporleder 2007
	Cooperative finance	1.07	N/A	6.25	National average	Deller et al 2009
	<i>Segment avg. (minus hi/lo)</i>	1.61	1.64	1.79		

As **Table 5** shows, the types of cooperatives that accrue the greatest local economic benefits, especially in terms of wages and employment, are in the cooperative finance arena. Cooperative finance includes banks and related institutions that provide capital to cooperatives (e.g., natural food cooperatives). Cities may play a useful role in providing start-up funds and support to cooperatives, and this set of multipliers provides guidance about where the greatest impact may lie.

Table 5 - Multipliers for Food and Agriculture Cooperatives

Economic Impact	Farm Supply/ Marketing	Grocery	Cooperative Finance	Farm Credit/ Insurance
Revenues	1.078	1.013	1.067	1.294
Income	1.764	1.781	1.756	1.756
Wages	1.479	1.474	2.987	2.078
Jobs	1.425	1.130	6.254	3.126

Source: Deller et al 2009

While all of the above studies, their attributes, and findings suggest caution in the usage of multipliers, they remain a useful, point-in-time tool for reflecting local economic benefits of a business or investment, albeit a conservative one. For the purposes of this project, multipliers are useful in four ways:

- 1) They are the only current indicator that provides a snapshot of local job, revenue, and wage impacts, as well as regional GDP, per dollar invested.
- 2) In combination, the national literature yields a range of what may be “typical” impacts for a given supply chain segment business or investment.
- 3) They are an output of regional economic development models currently used throughout the country such as IMPLAN and REMI.
- 4) They provide the basis for a common language and understanding about economic impacts that cross-cuts economic development professionals, urban planners, and local food proponents.

B. Gauging Access to Healthy, Local, Affordable Food

Beyond the purely economic estimates of multipliers, there is an important equity dimension to take into account in decision-making about where and how to invest in the food sector: **access to healthy, local, and affordable food by all local residents and workers**, and particularly underserved populations. Access to healthy food is considered a

virtual right by many and is frequently a prominent value and goal embedded in city food system plans across North America (which is discussed in some depth in [Section Four](#) below, with case examples in [Section Five](#)).²² Based on our review, access to healthy food is not frequently assessed in a consistent way that fully informs decision-making about prospective food sector investments, nor is it considered retrospectively in evaluating the success of a project or program investment in facilitating access.

In the literature that our team reviewed, there are three types of tools for gauging access to healthy, local, and affordable food in use around the county. Most frequently, a ***spatial and temporal measure*** is employed by planners and researchers to estimate the number and mix of grocers, food stores, and markets within a 10-15 minute drive (and sometimes walk) that offer healthy, local, and affordable food.^{23 24 25}

Another approach is to calculate the relative density of fast food establishments and convenience stores versus broadline markets that provide an array of healthy food using the ***Retail Food Environment Index (RFEI)***.

$$(RFEI) = (\text{\#fast food} + \text{\#convenience stores}) / (\text{\#supermarkets} + \text{\#produce stores} + \text{\#farmers markets})$$

The RFEI has been applied in certain parts of the country, notably California and New York City, to assess food access.²⁶ It holds some promise in comparing a baseline of communities with so-called “good” access to those without.

A third approach is to correlate several ***USDA Economic Research Service data sets*** by census tract to county levels that help target areas where there are food deserts (i.e., the [Food Desert Map](#)), and also provide a spatial overview of a community’s ability to access healthy food (i.e., the [Food Atlas](#)).

In general, these tools seem most useful in helping to identify communities where access to healthy food requires improvement, either in a city plan or in the early stages of decision-making about how and where to make targeted food investments. Another potential use is in gauging the degree of change over time in food access as a result of a large-scale project or cluster of food investments. As is discussed further in **Part C and Part F**, and [Section Four](#) below, and in the

22 Hodgson, K. (2012). *Planning for food access and community-based food systems: A national scan and evaluation of local comprehensive and sustainability plans*. Chicago: American Planning Association.

23 Ibid.

24 Masi, B., Schaller, L., & Shuman, M. (2010). *The 25% shift: The benefits of food localization for Northeast Ohio and how to realize them*. Cleveland Foundation, ParkWorks, Kent State University Cleveland Urban Design Collaborative, Neighborhood Progress Inc., Cleveland-Cuyahoga County Food Policy Coalition.

25 Hawes, T., Falk, J., Takahashi, N., & Wright, T. eds. (2011). *Room at the table: Food system assessment of Erie County*. Buffalo: University of Buffalo, Department of Regional and Urban Planning.

26 California Center for Public Health Advocacy. (2007) “Searching for healthy food: The food landscape in California cities and counties.”

Section Five case studies later in this document, there are certain types and scales of projects and supply chain investments that are more effective in ensuring access to healthy food among diverse communities within a locality.

C. Indicators for Monitoring Food Economy Performance Overall

Up to this point, our team has examined possible ways of making the economic case for food sector innovation investments at the city level, chiefly through national data sets, supply chain multipliers, and tools for assessing food access. In our review, we found nine resources from national- to city-level that seem particularly salient in helping to identify a list of potential indicators to use as selection criteria and/or performance measures where data is available, or is relatively easy to collect. One of the biggest gaps in the local food systems literature is a fully evolved set of indicators and data about the impacts of local food investments, an area that cities are increasingly likely to address and where such tools will be needed.

At the national level, King et al.²⁷ and the USDA Economic Research Service (ERS) both offer comprehensive sources of indicators that are based upon similar data sets. Currently available in draft form, King et al. is a list of indicators for all 50 U.S. states that covers all aspects of the supply chain, including measures for gauging food access. USDA ERS data is most useful in providing baseline agricultural indicators and projections, including consumption projections. Anderson²⁸ outlines a different set of national indicators for healthy, green, fair, and affordable food designed to gauge the sustainability of the food system overall, along with “hot spots” in the system that require special attention.

Other resources outline types of indicators^{29 30} or specific indicators^{31 32} that may be appropriate quantitative and qualitative performance measures and could be employed at regional, metropolitan, county, and city scales. Among the notable cities to identify and begin to apply measurable indicators locally is the City of Seattle.³³ As is shown in the following list, the City selected a set of indicators designed to surface data about the impacts of local food, where much data is needed nationwide:

27 King, R. P., Anderson, M., DiGiacomo, G., Mulla, D., & Wallinga, D. (2012). *State level food system indicators*. Unpublished report. Healthy Foods, Healthy Lives Institute, University of Minnesota.

28 Anderson, M., Fisk, J., Rozyne, M., Feenstra, G., & Daniels, S. (2009). *Charting Growth to Good Food: Developing Indicators and Measures of Good Food*. Final Project Report. Arlington, VA: Wallace Center at Winrock International.

29 Rho, Lois, Rachel Rochat and Teresa Lynch. 2012. Economic Investment Opportunity Study of Southeast Louisiana: Cluster-based Investment Recommendations for Seedco Financial-Louisiana. Boston: ICIC Research.

30 O'Hara, Jeffrey. 2011. *Market Forces: Creating Jobs through Public Investment in Local and Regional Food Systems*. Washington DC: Union of Concerned Scientists.

31 Vermont Sustainable Jobs Fund. (2011). *Farm to plate strategic plan*. Montpelier, VT.

32 Food and Health Network (2011). *Food system assessment*.

33 Lerman, S. (2012). *City of Seattle food action plan*. Seattle, WA.: City of Seattle Office of Sustainability and Environment.

Seattle Local Food Indicators

- Percent of Seattle residents within one-quarter mile of a healthy food access point
- Percent of Seattle residents who are food secure
- Acres of City-owned land used for food production
- Value of local food sold at Seattle farmers markets or other direct-to-consumer activities
- Value of EBT benefits redeemed at Seattle farmers markets
- Acres of farmland preserved through the [Landscape Conservation and Local Infrastructure Program](#)
- Number of businesses increasing availability of healthy food in stores
- Percent of Seattle's food waste diverted for composting or recycling

There are two instances where a broader set of indicators may be warranted, depending on a city's role in making food sector investments: 1) in serving as selection criteria for project or program investments when the city is a grantor or investor choosing among a variety of investment options; and 2) in monitoring project investment and system changes over time, where indicators serve as a means for measuring performance. The same set of indicators could be applied for both purposes. Whichever role a city chooses, it is important to keep in mind that “you get what you measure,” and that the data and sources and whatever resources are committed to data collection over time are also limiting factors.

To date, few cities have begun to assess the outcomes of their food sector plans and projects, so this is a particularly ripe time for deeper analysis and inter-city coordination on which slate of indicators would work best to capture changes in the food system. This topic is explored in greater depth in the accompanying document, ***North American Food Sector, Part Two: Roadmap for City Food Sector Innovation and Investment.***

D. Externalities to Capture through Investment

As mentioned previously, cities play a unique role in helping to ensure the efficient operation of markets to maximize the public good, including through improving local economies and creating jobs, and in so doing, preventing or redressing market failures.



Food waste is one of the biggest examples of a market failure where cities can and do play a key role. The amount of food that never reaches the human stomach locally, nationally, and internationally is staggering. Worldwide, approximately 30% to 50% of food used in homes, restaurants, and other sources is wasted, and more than 90% of this is sent to the landfill.^{34 35} The magnitude of this food waste has significant ripple effects elsewhere in the economy and environment. Beyond the amount of water and energy wasted as a result of food waste, including methane release, there are also monetary losses, particularly in food production, and consumption of fruits and vegetables.³⁶ In Seattle, for example, it is estimated that each person in a household throws away a dollar of edible food per day; for a family of four, that amounts to a loss of \$1,600 per year.³⁷

On the other side of the coin, there is a huge challenge and equally great opportunity locally and nationally for cities to extend their municipal waste management function and invest in certain segments of the supply chain to reduce food waste.³⁸ The majority of food waste is an avoidable loss. Most food is wasted on the production and consumption segments of the supply chain, especially fruits, vegetables, and seafood.³⁹ Targeted investments to reduce waste in these areas would, in combination, help reduce consumer food cost and increase post-production business performance. Consulting firm McKinsey & Company ranks food waste as one of the top three opportunities to improve resource productivity. Drawing from the literature our team reviewed, examples of actions cities could take to reduce food waste include:

- Develop food waste reduction targets for businesses, institutions, and residents citywide, particularly in production and consumption of fruits and vegetables. This would help reduce out-of-pocket expenditures for food.
- Work with producers to offer tax donations for excess produce donated to food banks, especially in metropolitan counties with a high proportion of small to medium farms that sell their products in adjacent urban areas, as is the practice in Arizona, California, Colorado, and Oregon.
- To the extent feasible, help develop a jobs plan to address production and/or processing labor shortages during harvest periods.

A single effort to reduce food waste could have multiple local economic benefits in terms of revenue generation and job creation, as well as increasing the supply of healthy food available. Cities could work with producers and small

34 Institution of Mechanical Engineers. (2013). *Global food: Waste not want not*. London: Institution of Mechanical Engineers.

35 Gunders, D. (August 2012). *Wasted: How America is losing up to 40% of its food from farm to fork to landfill*. NRDC Issue Paper. IP: 12-06-B. Washington DC: NRDC.

36 Ibid.

37 Lerman, S. (2012). *City of Seattle food action plan*. Seattle, WA.: City of Seattle Office of Sustainability and Environment.

38 Gunders 2012, Zborel 2011, Hodgson 2012, Hawes et al 2011 and IME 2013).

39 Ibid.

entrepreneurs to stimulate, support, and invest in markets for seconds or “defective” items in surplus products, such as fruits and vegetables, and support the development of value-added products made from the surplus (e.g., pies or jams from less than perfect fruit). The creation of facilities and hubs for the processing and sale of these products can have job creation benefits, in addition to multiplier effects. The case studies we have assembled in [Section Five](#) provide further discussion of project examples that have helped reduce food waste and have multiple local economic benefits.

E. Managing Risk

Risk is perhaps the biggest factor for both entrepreneurs and investors when deciding to go forward and launch a new food venture. Unless all parties are comfortable, no new venture is created. Risks are diverse, including the risk of a new venture failing completely, failing to pay back loans and investors, and failing to achieve an investment’s potential and to deliver the expected economic, social, and health benefits to a community.

The interests of entrepreneurs, investors, local governments, and economic development agencies looking to support new food ventures are aligned: all want to reduce risk. And because failures do occur, economic development agencies and other investors need strategies that reduce their overall risk as they invest in new ventures.

Our review looked at reports on business failure rates, compiled by local governments, independent researchers, and government agencies, as well as a meta-analysis of Small Business Administration loan repayment failure rates by NAICS code. We also reviewed studies commissioned by local governments and conducted by academic institutions and federal agencies on the reasons why food ventures fail and which obstacles entrepreneurs consider most challenging. We also reviewed a host of studies on local food systems that identified the obstacles faced by new entrepreneurs and the advantages enjoyed by some highlighted as examples of success. During our review, we also found useful insights into why more private investment is not available to food entrepreneurs, a major obstacle to business viability and expansion.

We found that the risk of failure among food ventures is about the same as new ventures overall. Of new restaurants, 26.2% fail in the first year and 59.75% fail within three years, with independent restaurants slightly more likely to fail than multi-unit or franchise restaurants.⁴⁰ For the growing farmers market and direct-to-consumer segment, high turnover among vendors also remains a concern. Critical decisions around business planning and policies; meeting food safety and processing regulations; facilitating payments for low-income patrons with coupons; and understanding local zoning rules

40 Parsa, H.G., Self, John Tl, Njite, David and King, Tiffany, Why Restaurants Fail (part I), Cornell Hotel and Restaurant Administration Quarterly, Vol 46, No. 3, August 2005, pp. 304-322.

and business permit requirements all affect turnover for this segment.⁴¹ There are also special challenges with meat, poultry, and dairy vendors.⁴²

Overall, food ventures are about 1.0 to 1.2 times more likely than all businesses to not repay loans within three years.⁴³ When food ventures fail, their cost to the community, however, is lower, as failures more often end in distressed sales to another company; sites are easily put back into use; and debt and inventory are relatively low.⁴⁴

The types of businesses operating within the food sector also are more diverse than many other industries, and some types of food companies are more risky than others. For instance, fish and related business are among the riskiest of all businesses, and manufacturing and processing among the least risky.⁴⁵

We also found that many entrepreneurs and new ventures face common challenges. Some significant obstacles that local governments can directly address include the lack of food business management skills among entrepreneurs; lack of private loans and investment to provide adequate funding and other capital for new and growing small businesses; having too many business of the same kind in one community; and challenges posed by government policies and actions.

These challenges include difficulty in obtaining all necessary permits; challenges in selling to public institutions; and unexpected obstacles such as inappropriate zoning rules, changes in local land use and traffic patterns, and business impairment due to public works projects.⁴⁶ The issue of securing permits is also a rapidly changing issue as food safety concerns rise on the national policy agenda and new regulations are put in place aimed at reducing public health risk, especially from food producers and processors operating across many states. For entrepreneurs and community-based ventures, the barriers posed by the time and cost of implementing food safety management, testing, and record-keeping systems designed for the nation's largest food companies continues to grow and may further tax their management capacity. Straightforward actions by local governments and economic development agencies can address these obstacles and reduce risk.

41 Tropp, D., & Barham, J.(2008). *National farmers market summit proceedings report*. Washington, DC: USDA Agricultural Marketing Service.

42 O'Hara, Jeffrey and Robert Parsons. 2012. *Cream of the Crop: The Economic Benefits of Organic Dairy Farms*. Washington DC: Union of Concerned Scientists.

43 Ibid.

44 Ibid.

45 Open Data by Socrata Analysis of SBA Loan Failure Rate by NAICS Industry Code, January 24, 2013.

46 Parsa, H.G., Gregory, Amy and Terry, Michael, *Why Do Restaurants Fail? Part III: An Analysis of Macro and Micro Factors*, The Dick Pope Sr. Institute for Tourism Studies, UCF Rosen College of Hospitality Studies, Self Published, 2011.

Entrepreneurs working in all sectors of the economy face challenges in securing private funding through investments and loans. New businesses are more at risk of failure than established ones, and many offer new products and services that are not yet proven in the market. Food entrepreneurs face two unique challenges. The first is that many loan officers at banks are not familiar with the food sector and make loans to businesses working in industries with which they are more familiar.⁴⁷ The second is that venture capital investors favor businesses that create value through intellectual property and also can be scaled quickly and at low cost. Many types of food companies create little or no intellectual property, with recipes treated as public domain by U.S. law, and many kinds being capital intensive to scale and involving bricks and mortar, or “pots and pans” investments.

The literature around risk among new food ventures is quite robust, especially for the overall performance of new businesses nationally, and is sufficient to develop good tools as well as strategies for reducing the risk of new ventures failing and for managing risk for public sector investment. That said, analysis of the risks and failures of food businesses within cities and urban regions is lacking, as are comprehensive studies about ventures that focus on locally grown and healthier foods.

In conclusion, we have found that the food sector provides a sound investment environment featuring slightly above average risk of a new venture failing and lower costs associated with failure. Local governments can reduce this risk through improved policies and programs, and can also take steps to increase the amount of funding available while managing their own risk as investors.

F. Where Greatest Local Economic Benefits Seem to be Generated

Taking into account the food sector economic development research our team reviewed as a whole, the literature suggests that the following ***supply chain segments would generate greatest local economic benefits*** in terms of increased local revenues, jobs, wages, and access to healthy food:

- In priority order, processing, retail/consumption (including foodservice), and distribution have the greatest economic benefits, depending on the strength of the local infrastructure and related asset base.
- Processing overall has the largest jobs impact with respect to number of jobs created, their stability and potential career paths, and wages (roughly comparable to foodservice on an hourly basis).
- Processing and retail/foodservice provide higher wages overall and have the highest growth potential.

47 Urban Food Link. (2012). *Food processing in Seattle, WA: An assessment of challenges and opportunities*.

- Food waste reduction and recovery is an area with high growth potential that has local economic development benefits, particularly in creating/processing value-added products from and stimulating markets for fruit and vegetable “seconds”.
- Ownership structure (e.g., public/private partnerships or cooperatives) can help spread risk and thereby enhance economic return.

While production overall is not a segment that has significant growth potential in local dollars, jobs, and wages, or access to healthy food, there seems to be one primary exception nationwide: increasing the supply of **fruits and vegetables** that reaches consumers. There are several regional studies from around the country that suggest the magnitude of local economic benefits that come from fruit and vegetable supply increases.

Table 6 - Jobs and Revenues Generated from Target % Increases in Fruit and Vegetable Production

Increase in Production	Type of Production	Region	Jobs to be Created	Revenues Generated	Taxes Generated	Source
5%	Local food production overall	Vermont	1500	\$135M	Unknown	Vermont Sustainable Jobs Fund 2011
10%	Local fruits and vegetables	North Carolina	N/A	\$3.5B	Unknown	Curtis et al. 2010
10%	Local fruits and vegetables	Iowa	2000	\$140M	Unknown	Curtis et al. 2010
20%	Local fruits and vegetables and	Erie County, NY	19 and 63	\$1.9M and \$12M	Unknown	Hawes et al. 2011
25%	Local fruits and vegetables	Northeast Ohio including	27,664	\$4.2B	\$126M	Masi et al. 2010

Bolstered by national food regulations and daily consumption targets, consumer demand for fruits and vegetables is outstripping supply throughout the United States.⁴⁸ Magnifying the problem are systemic roadblocks in the supply chain

⁴⁸Union of Concerned Scientists, *Pla* Union of Concerned Scientists. (2012). *Plant the plate*.

(e.g., inequitable access for diverse populations), and occasional disruptions from other sources such as increased instances of severe weather and drought driven by climate change. The processing of value-added seconds through a central off-farm facility or hub is one potential area of investment that would help overcome these blockages, as would the concurrent development and support of retail and wholesale markets to sell these products to consumers.

G. Information Technology and Social Media: An Emerging and Innovative Force in the Food Sector

The use of information technology (IT), especially social media, is growing in the food sector. Many new kinds of businesses are starting from those that offer online marketplaces bringing together producers, distributors, and ventures that help consumers make better food purchasing choices. Two types of significant innovations that can affect the local food economy are:

- Online resources and smart phone applications that help consumers choose healthier, seasonal, and locally grown foods among local food retailer choices.
- Aggregation platforms that help larger buyers aggregate supply among many small producers, a role often filled by distributors, and those that help a producer sell larger amounts to groups of consumers who come together online (e.g., multiple households buying the meat from a slaughtered cow).

Both types of businesses are innovative in the way they earn revenue and create value by establishing relationships (with producers, and among buyers and consumers) and providing information (curating a set of healthy and sustainable choices), rather than by growing or processing food products.

Our review of this segment included industry and investor reports as well as the results of surveys conducted by the Pew Center and the food industry on the rate at which consumers are using IT. There are no studies yet on the job creation and economic benefits to communities where these ventures are launched or used.



We found that a substantial number of consumers are now using IT to inform their food choices. More than half of adults use online resources to inform their restaurant choices.⁴⁹ A half star increase in ratings on Yelp.com increases restaurant traffic by 19%. Not surprisingly, chefs believe that social media is the “hottest trend,” or most rapid area of change, in the foodservice industry. For larger food companies, investing in social media is a

⁴⁹ Hoffman, B. (2012). Survey of chefs and consumers find technology use, but more info is needed. *Food + Tech Connect*.

top near- term priority.⁵⁰

Our review leads us to conclude that IT offers an opportunity to cheaply and quickly launch new ventures focused on local, sustainable, and healthy food aggregation and distribution needs. These new ventures may be able to work in partnership with conventional distribution or retail partners and also utilize excess storage and distribution capacity in the community.

Also, moving forward, social media and online information sources will increasingly determine where consumers get information about food choices, and which food choices they make. New social media and online ventures that emphasize local food products, services, and ventures have a strong potential to shift consumer purchases toward (or away from) specific local sustainable food ventures. New local food ventures, especially those looking to sell to institutions, restaurants, independent retailers, or consumers, must be engaged and visible in social media and online sources, or they may lose market opportunity to others that do so.

50 Dolan, P., Hughes, M., Hagarty, B., Theodoropoulos, T., Giometti, A., & Kansal, R. (2012). *KPMG food and beverage industry outlook survey: Executives plan to spend and invest in recipe for growth*, KPMG LLP.

SECTION FOUR : WHAT CITIES ARE DOING TO STRENGTHEN THE LOCAL FOOD SECTOR

Approximately 80% of the small farms selling food on a local level, such as through farmers markets, are situated in metropolitan counties or adjacent to them.⁵¹ Given their geographic proximity to producers, population density, economic centrality, and scaling potential, cities can serve a vital and critical function in supporting and harnessing the economic development potential of local food systems. By virtue of their economic scale as home to clusters of creativity, cities have a similarly critical role to play in supporting innovation to help transform the food sector along the entire supply chain.



⁵¹ Low, S. & Vogel, S. (2011). *Direct and intermediated marketing of local foods in the United States*. ERR-128. Washington, D.C.: U.S. Department of Agriculture, Economic Research Service..

OVERVIEW

Increasingly, over the last decade, cities are seeding investment in the food sector to catalyze local economic opportunity, to improve access to healthy and sustainable food for their residents, and to help create a more sustainable food system. These investments include support for individual projects, some of which are innovative and replicable elsewhere and others that are locally specific and unique. Cities have also provided investments to support the clustering of food activities along the supply chain to create an efficient and effective hub of local and regional economic activity.

In recent years, many major cities in North America have developed municipal plans to establish policy priorities for strengthening the food system overall and targeting investments to help ensure that all communities have access to healthy food. However, based on recently reported American Planning Association (APA) survey data for North America, surprisingly less than 20% of sustainability plans and less than 10% of comprehensive plans explicitly incorporate the local and/or regional food system as an element.⁵² Only a handful of these incorporate any form of economic assessment in developing food system priorities.

When comparing the relatively few comprehensive plans and sustainability plans that incorporate the local or regional food systems as an element, we found some crossover in the top priority food system topics and strategies covered, outlined in **Table 7**. Interestingly, local economic development or business development do not seem to be explicit priorities.

⁵² Hodgson, K. (2012). *Planning for food access and community-based food systems: A national scan and evaluation of local comprehensive and sustainability plans*. Chicago: American Planning Association.

Table 7 - Types of City/County Plans Incorporating Food System

	Priority Food System Topics	Priority Food System Strategies
Comprehensive Plans	Rural agriculture Food access and availability Urban agriculture Food retail Food waste	Preserve agricultural land Support new opportunities for agricultural production of produce Improve access to farmers markets Support small farms Support new opportunities for noncommercial urban agriculture
Sustainability Plans	Urban agriculture Food access and availability Rural agriculture Food retail Food waste	Improve access to farmers markets Support new opportunities for noncommercial urban agriculture Support new opportunities for agricultural production of produce Improve access to community gardens Support new opportunities for commercial urban agriculture

Adapted from source: Hodgson 2012

Among the plans that incorporate the food system as an element, many are also noteworthy because they address how to implement local food policies and also provide guidelines for tracking progress in meeting local food priorities. The majority of these plans are from cities along the West and East Coasts and in the Upper Great Lakes regions. But so far, there has been little to no local economic benefit or other data collected during the implementation of the plans that would allow for reliable, longitudinal assessment of impacts.

Table 8 - Noteworthy Examples of City/County Plans Incorporating Food System

City	Type of Plan	Source
Baltimore, MD	Sustainability	Hodgson 2012
Detroit, MI	Strategic Vision/Plan	Griffin 2012
Marin County, CA	Comprehensive Plan	Hodgson 2012
Minneapolis, MN	Urban Agriculture Policy Plan	Hodgson 2012
Milwaukee, WI	Comprehensive Plan	Mukerhji et al. 2010
Portland, OR	Food Plan	Rhoads et al. 2009
Sacramento, CA	Comprehensive Plan	Hodgson 2012
San Francisco, CA	Sustainability Plan	Hodgson 2012
Seattle, WA	Food Action Plan, Comprehensive Plan	Lerman 2012, Sustainable Cities 2012
Vancouver, BC	Comprehensive Plan	Mukerhji et al. 2010

PROMISING APPROACHES TO MAXIMIZING ECONOMIC DEVELOPMENT POTENTIAL AND VALUE OF FOOD SECTOR IN URBAN AREAS

Based on the literature we reviewed, another promising area for municipal food investments—and for data collection—is where cities have supported and/or directly invested in innovations at the project level that have yielded sizeable and multiple forms of local economic benefits.

One example of the magnitude and range of these benefits comes from Seattle’s Pike Place Market, a reliably stable producer of economic benefits over a long period in the city’s history, despite its economic ups and downs. In addition to its sizeable economic activity in the form of revenue generation and current, indirect, and induced employment, the market is notable for its value as a public space.⁵³ Pike Place Market has also contributed to the growth of neighborhoods, community character, and city image. These latter benefits are of almost limitless value to the city.

⁵³ Berk and Associates (2004). *A business, economic and public policy assessment of the PDA’s [Pike Place Development Authority] properties*. New York, NY: Project for Public Spaces.

A key challenge to understanding how effective project-level efforts have been, however, is the lack of consistency in how those benefits are gauged over time beyond their immediate private or public value. **Table 9** provides a snapshot of several project-level investments that cities have supported, along with their estimated local economic benefits. We will explore the local benefits of several of these projects in greater depth in [Section Five](#) where we discuss innovation case studies.

Table 9 - Select Examples of Food Sector Innovations and Economic Development Impacts by City and Town

City/Town	Innovation	Purpose/Outcome	Source
City			
Boston, MA	Crop Circle Kitchen food incubator	Launched over 100 businesses	ICIC et al 2013
Cleveland, OH	Green City Growers Cooperative	For-profit coop that will create 35 to 40 long-term, living wage jobs	Hagey et al 2012
Detroit, MI	Eastern Market distribution center and market	Will create 4000 more jobs through new corridor plan in packaging and distribution	Griffin et al 2012
Detroit, MI	Recovery Park urban farm and processing center	Will create 2500 to 3500 permanent jobs at \$10-\$12 hourly over next 10 years	Hagey et al 2012
Town			
Holyoke, MA	Nuestras Raices business incubator	Created over 24 food businesses and added \$2 mil. in economic activity	Hagey 2012
Bridgeton, NJ	Rutgers Food Innovation Center food industry/tech park	Over 1400 companies and individuals assisted and over 100 trained in food safety. Will create 1000 new jobs, over \$200M in new revenue and millions in tax revenue	Newman et al 2012, Islam 2013

Another way to think about and gauge the value of a project-level innovation beyond its quantifiable local economic benefits is in terms of its connection to, and relationship with, existing **community and municipal assets**. Increasing connectivity also adds value to the urban food system. To the extent feasible, investments in the food sector not only fill a

market supply or demand niche, they also can help build upon, knit together, and strengthen other assets within the food system and the city itself that add multiple forms of value. Assets could include other elements of, or cornerstone businesses in, the food sector (e.g., distribution infrastructure), or attributes of the city (e.g., transportation network, vacant land or buildings, social networks, green space, retail corridors, schools, and community centers).

One example of a project that is serving as a cornerstone for a citywide asset-building strategy is Eastern Market in Detroit.⁵⁴ In *Detroit Future City*, a novel, systemic future plan for the city, Eastern Market will become the hub for a food industry corridor around which other assets will be clustered and connected, such as food businesses, urban farms, and other productive lands and green space in adjacent areas. This new corridor plan for the Market is estimated to create more than 4,000 additional jobs in food packaging and distribution.

In the literature we reviewed, assets for building local and regional food systems are conceived of in several ways:

- **Assets that are building blocks for food sector investments:** Central location, transportation infrastructure, vacant buildings, vacant or reusable land, large workforce, abundant creative class/entrepreneurs, density, and diversity.⁵⁵
- **Assets to build capacity of local/regional systems:** Expertise and technical assistance, adequate infrastructure that overcomes seasonal bottlenecks (e.g., processing/distribution, etc.), and food safety regulations.⁵⁶
- **Assets needed by stakeholders:** Financial resources, social networks, skills and knowledge, land, and markets.⁵⁷
- **Challenges or deficits that are converted to assets:** Land security/land tenure, business training, remediated soil and land, water, and other shared resources.⁵⁸

Taking this body of literature one step further is the “food commons” approach⁵⁹ that conceptualizes the local food

54 Griffin, Toni et al. 2012. *Detroit Future City: Detroit Strategic Framework Plan*. Detroit Works Project.

55 Astor, A., Karp, K., Lynch, T., & Miara, J. (2012). The Time is Right to Grow the Urban Food Industry Cluster. *EDNow (Economic Development Now)*. 12 (13).

56 O'Hara, Jeffrey. 2011. *Market Forces: Creating Jobs through Public Investment in Local and Regional Food Systems*. Washington DC: Union of Concerned Scientists.

57 Masi, B., Schaller, L., & Shuman, M. (2010). *The 25% shift: The benefits of food localization for Northeast Ohio and how to realize them*. Cleveland Foundation, ParkWorks, Kent State University Cleveland Urban Design Collaborative, Neighborhood Progress Inc., Cleveland-Cuyahoga County Food Policy Coalition.

58 Hagey, A., Rice, S., & Flournoy, R. (2012). Growing urban agriculture: Equitable strategies and policies for improving access to healthy food and revitalizing communities. *PolicyLink*, 1–47.

59 Cochran, J., & Yee, L. (2011). *The food commons 2.0: Imagine, design, build*.

sector as a multidimensional common asset base of limitless spatial connectivity, public good, and public value.

In the accompanying ***North American Food Sector, Part Two: Roadmap for City Food Sector Innovation and Investment*** we explore the topics of assets, asset frameworks, and inventories in greater depth as a means for realizing value from food sector investments.

TOOLS AND STRATEGIES THAT CITIES USE TO SUPPORT LOCAL FOOD SECTOR

In the section below, we focus on three types of strategies that cities use to support local food sector innovation investments and that are frequently mentioned in the literature reviewed: 1) land use and other place-based strategies; 2) technical assistance in small business development; and 3) public and private financing of innovations. Rather than an exhaustive list of potential municipal strategies, these three types of strategies fall under the common, in some cases innovative, forms of city support for food sector innovations.

A. Land Use and Other Place-based Strategies

In urban areas, land and building space are two of the most essential building blocks for local food projects and the sector as a whole. How these forms of capital are allocated, used, and owned can spell the difference between whether a project launches or not, and whether it succeeds or fails. This applies across the supply chain to investments in production, processing, distribution, and retail/consumption.

One of the critical roles that cities can play is assembling vacant land and buildings to support the local food sector, and also using local city policies to help foster more flexible land use. Across the nation, there are examples in the literature of cities employing their special powers in these areas to mobilize resources for the local food sector and to help minimize risk.

From zoning for permissive uses to creating special districts or industry corridors or aggregating land through trusts, **Table 10** lists examples found in the literature:

Table 10 - Examples of Land Use/Land-Based Tools/Strategies by City (Part A)

City	Example	Purpose	Source
Land Use/Zoning/Special Districts			
Boston, MA	Community Garden Subdistrict, Olmstead Green Smart Growth Overlay Zone	Special district that provides for use and land tenure	Mukherji et al. 2010; Sustainable Cities 2012
Chattanooga, TN	Urban Agriculture District Ordinance	Special district of permitted urban agriculture uses	Mukherji et al. 2010; Sustainable Cities 2012
Chicago, IL	Neighborspace	Creating overlay districts	Mukherji et al. 2010; Hagey et al. 2011
Cleveland, OH	Urban Garden District	Special district for urban community gardens	Mukherji et al. 2010; Sustainable Cities 2012
Detroit, MI	Detroit Future City, Eastern Market Industry Corridor	Will create food industry corridor/zone around Eastern Market and also productive landscapes (e.g., urban agriculture)	Griffin et al. 2012
Kansas City, MO	Climate Protection Plan	Recommendations for neighborhood and metropolitan food production	Sustainable Cities 2012
Milwaukee, WI	Residential Districts, Uses	Permissive use zoning to support community garden programs in residential areas; also creating overlay districts	Mukherji et al. 2010; Sustainable Cities 2012
Nashville, TN	Commercial and Non-commercial Community Gardening Zoning Ordinance	Permissive/special exception use zoning to support commercial and non-commercial community garden programs	Mukherji et al. 2010
Portland, OR	Zoning Chapter	Permissive use zoning to support community garden programs; food production and distribution zoning rules	Mukherji et al 2010; Personal communication, Steve Cohen
Sacramento, CA	Ordinance	Revised land use code that allows for urban agriculture in residential areas	Sustainable Cities 2012
San Francisco, CA	Urban Agriculture Zoning	Allows small scale commercial agriculture in residential areas without permit, and larger scale in residential/commercial/industrial areas with permit	Personal communication, Mei Ling Hui and Diana Sokolove
Seattle, WA	Comprehensive Plan	Goal of one community garden per 2500 households	Sustainable Cities 2012

Table 10 - Examples of Land Use/Land-Based Tools/Strategies by City (Part B)

City	Example	Purpose	Source
Land Trusts and Reuse			
Boston, MA	Grassroots Program and Open Space Sub-districts	Donated/leased vacant land trusts to urban agriculture	Mukherji et al. 2010; Sustainable Cities 2012
Burlington, VT	Burlington Land Trust	Land trust for food and agriculture	Masi et al. 2010
Chicago, IL	NeighborSpace	Donated/leased vacant land trusts to urban agriculture; also creating overlay districts	Mukherji et al. 2010; Hagey et al. 2011
New York, NY	PlaNYC and Green Thumb	Reclaiming of vacant parcels for urban agriculture and start-up community garden programs	Mukherji et al. 2010
Providence, RI	Southside Community Land Trust	Land trust for urban agriculture	Hagey et al. 2012

B. Technical Assistance in Small Business Development

A second important asset that cities are mobilizing to support local food sector investments and innovations is knowledge capital in the form of **technical assistance** for project start up and ongoing management. This is one of the most fragmented areas in terms of the role of cities that we found in our literature review. The few examples we found are listed in **Table 11**.

Table 11 - Examples of Cities Providing Food Sector Business Technical Assistance

City/Town	Category Provided	Source
Baltimore, MD	Support grocery stores to help assemble land for development	Rhoads et al. 2009
Chicago, IL	Support all aspects of grocery store development targeted in certain areas	Rhoads et al. 2009
Detroit, MI	Through Recovery Park support job training	Hagey et al. 2012
Portland, OR	Support waste reduction by businesses; support sustainable food purchases	Rhoads et al. 2009
Sioux City, IA	Support organic market expansion	Rhoads et al. 2009

The form, extent, and duration of technical assistance can also make the difference between the success or failure of an investment. This is especially the case for small start-up businesses where business or investment partners or owners may experience barriers to this knowledge capital on their own.

Over time, when cities seed and catalyze strategic performance-based food sector investments, and target communities that face barriers to accessing business knowledge, the technical assistance role may gain in importance.

C. Public and Private Financing of Local Food Investments

Based on the literature, a third way in which cities are providing capital to support local food investments and innovations is through **direct public financing**, such as place-based federal pass-through funding (e.g., Community Development Block grants and Federal Empowerment Zone funds). **Table 12** presents a list of food projects that are principally or partially funded in this manner:

Table 12 - Examples of Public Sector Local Food Business Financing Sources by Location

Location	Category	Funding Type	Source
Boston, MA	Urban agriculture	Community Development Block Grant (CDBG)	Mukherji et al. 2010
Bridgeton, NJ / Vineland-Milleville-Bridgeton Primary MSA	Business/training incubator (Rutgers Food Innovation Center)	Federal Empowerment Zone, CDBG, tax exemptions/breaks, grants subsidies	Newman et al. 2012
Buffalo/Erie County, NY and PA	Food and agricultural businesses through Industrial Development Agency	Tax exemptions/breaks	Hawes et al. 2011
Chicago, IL	Grocery loans	Lending	Rhoads et al. 2009
Cleveland, OH	Gardening for Greenbacks	Lending for tools equipment	Hagey et al. 2012
Madison, WI	Urban agriculture	CDBG	Mukherji et al. 2010
Philadelphia, PA	Grocery investments through Fresh Food Financing, PA	CDBG	Rhoads et al. 2009
Washington, DC	Supermarket exemptions	Tax exemptions/breaks	Rhoads et al. 2009

Some cities, notably Washington, DC and New York City, have implemented or attempted to pass a local beverage tax ordinance that would both reduce consumption of soft drinks and other added-sugar sweetened beverages, and build a revenue base for supporting local food investments (e.g., healthy school food programs). But these efforts have faced stiff resistance from food and beverage industry representatives and have had mixed success to date. In the Washington, DC

example, the City Council ultimately passed a 6% beverage tax in line with what some other cities have done, after the original, more ambitious, and greater revenue-generating measure was overturned.⁶⁰

As more cities follow suit and implement these or other forms of tax or other revenue-generating mechanisms for local food investments, the provision of local grants or pass-through programs that draw from this base will grow in importance. There is precedent for other beverage taxes, related taxes, and other types of levies to fund essential infrastructure elsewhere in the nation (e.g., transportation infrastructure in Los Angeles).

According to the literature, there is an increasingly promising area of local food innovation investment where cities invest little to no capital and innovation is supported by **private sector financing**: social media and food-related information technology projects. To date, food technology businesses such as **Farmigo** and an about-to-launch consumer application for real-time remaindered food discounts⁶¹ are funded through angel investors, venture capital, or other investment partnerships. **Table 13** and the case studies in [Section Five](#) provide more information.

⁶⁰ Ivas, A. 2010. *DC Council approves Healthy Schools Act, rejects soda tax*. Earth Eats, Indiana Public Media.

⁶¹ Andronico's Markets in Northern California have entered into one such partnership with Food Star.

Table 13 - Examples of Private Sector Food Business Microlending/ Start-Up Sources by Location

Financing	Location	Project/Type	Source
Benchmark Capital venture funding	CA and NY	Farmigo CSA and other food technology innovations	Foley et al. 2012
The Carrot Project	New England	Loans for small and mid-sized farms	Foley et al. 2012
Cutting Edge Capital	Primarily CA-based businesses and agencies	Direct public offerings intra-state	Masi et al. 2010
Idea Village	LA	Microlending and technical assistance	Rho et al. 2012
Investors' Circle	National	Sustainable food and farming enterprises	Foley et al. 2012
Kickstarter	National	Small to mid-range projects such as Stockbox Grocers, Seattle	Foley et al. 2012
Kiva and ASI Federal Credit Union	National, Southeast LA	Seedco Food Cluster Investment	Rho et al. 2012
Natural Capital Investment Fund	National	Sustainable food and farming enterprises	Foley et al. 2012
RSF Social Finance	National	Sustainable food and farming enterprises	Foley et al. 2012
The Reinvestment Fund	East Coast – DE, MD, NJ, PA	Financing supermarkets in underserved areas including Fresh Food Financing Initiative	Food Trust 2004
The Shade Fund	Southeast US	On-farm infrastructure	Foley et al. 2012

Some of the private sector investors do seek out public sector partnerships with government agencies, or rely on some kind of capital or other early support or advantage provided by government agencies. This will likely be a growing area for city involvement.

GAPS IN THE NATIONAL AND LOCAL LEVEL LITERATURE AND HOW TO ADDRESS THEM

At the national level, there is comprehensive data available about the food sector's economic impacts, including current and projected growth in food sector jobs, and which supply chain segments offer wages that exceed the national median. There is also substantive research in the area of the range of expected local economic benefits of food sector investments along the supply chain and other supplemental research.

As a category, however, there is scattered and fragmentary information about the actual local economic benefits of local food investments. What exists generally does not provide sufficient depth and breadth over time to make credible general assumptions about effectiveness. Local government efforts to collect this kind of information seem at present to be in the very early stages, inconsistent, and almost non-existent.

In general, there seems to be a dearth of literature in five primary areas in the food sector:

- A granular understanding of what constitutes high wage, high quality jobs, especially at the local level.
- Job creation and wage benefits of innovative approaches beyond the project category level or a small survey sample within a locality or region.
- A food cluster approach that does not rely solely on NAICS categories and that fully represents the economic impacts of the food sector, especially locally owned and locally produced/processed/distributed foods.
- The value generated by local food investments as a whole, including price elasticities of local food.
- Measureable outcomes from city investments in the food sector, with emphasis on local food.

One of the primary aims of this ***Program Scan and Literature Review*** and the ***Roadmap for City Food Sector Innovation and Investment*** is to provide guidance that will help address these gaps.

The next section of this report, [***Section Five***](#), will explore innovative case studies that may help fill some of these gaps in the literature. At the conclusion of the report, we will assess which gaps remain and how they can be addressed in the future and at the local level.

SECTION FIVE: INNOVATION CASE STUDIES

For the purpose of this work, we define food sector “innovation” as a discrete program, project, or policy that uses a new business model, or delivers new products and services, that either have demonstrated or have the potential for significant socioeconomic, health and nutrition, and environmental impacts, with an emphasis on economic development.

Below are the food sector innovations our team focused on, each of which will be described in greater detail in the following section:

- *Food hubs*, managing the aggregation and distribution of food from supplier to buyer.
- *Technology-based businesses*, harnessing technology to facilitate the business relationships and/or financial transactions of food businesses.
- *Food incubators*, combining a constellation of food business support services such as commercial kitchens, job training, processing facilities, and capacity-building.
- *Farmers markets*, bringing together vendors to sell directly to consumers or wholesalers, often in a community space and with a community-serving mission.
- *Farm to institution*, connecting institutions such as schools and hospitals with food sourced from local/regional farms.
- *Mobile markets*, addressing gaps in access to healthy affordable food through “grocery stores on wheels,” food carts, and other mobile retail models.
- *Urban agriculture*, farming in urban settings, often coupled with training, nutrition education, or agrotourism.
- *Food waste recovery*, reducing food waste primarily through gleaning or purchasing unsold product (on farm) or rescue (wholesale/retail), often increasing the total amount of sellable product.

RESEARCH METHODOLOGY AND SOURCES

Our research on food sector innovations spanned over 200 peer-reviewed articles, research reports, data sets, project evaluations, interviews, organizational websites, news articles, and government reports. For each area of innovation, we sought to assess a broad range of sources, in an effort to identify the most compelling, cutting-edge, successful, or promising case study examples of each.

Within each area of innovation, we have highlighted some of the more useful sources of information in terms of data, analysis, or emphasis on job creation, local economic development, and increasing access to affordable healthy food, as well as the role cities have played or can play in terms of investments and policy. Of the innovations reviewed, farmers markets and farm to institution programs were the best-documented in terms of impacts and investments. Newer innovations, such as technology and social media, and emerging innovations such as food waste recovery and mobile markets, had substantially less data available. And across categories, cooperatives emerged as a particularly useful model for cultivating economic activity and maintaining local benefits. Overall, significant gaps exist across innovations in terms of the nature and scale of current investments, and in many cases, the impact of past investments.

Key and noteworthy sources for each innovation include:

- **Food hubs:** Southern Wisconsin Food Hub feasibility study, Wallace Center's 2011 survey of food hubs, USDA-Agricultural Marketing Service (AMS)/Wallace Center's 2012 Food Hub Resource Guide.
- **Food business incubators:** US Department of Commerce (Small Business Administration), business and economic journals, Wallace Center's Healthy Urban Food Enterprise Development Center reports and evaluations, interviews.
- **Technology and social media:** Technology-focused popular media, technology company websites.
- **Farmers markets:** Research and reports by Project for Public Spaces and Farmers Market Coalition, economic impact framework and results developed by Marketumbrella, two or three key peer-reviewed articles on use and interpretation of multipliers.
- **Farm to institution:** Ecotrust farm to school economic impact case study, Institute for Agriculture and Trade Policy grower survey report, one or two key peer-reviewed articles on measuring farm to institution impact.
- **Mobile markets:** USDA Economic Research Service (ERS) data on value chains and food deserts, public health peer-reviewed journals, food industry journals.

- ***Urban agriculture:*** Research and reports from the Funders' Network for Smart Growth and Livable Communities and PolicyLink, data and results generated by urban agriculture organizations.
- ***Food waste recovery:*** US Environmental Protection Agency publications, popular media, peer-reviewed journals, interviews.

An overview of innovation case studies is presented in **Table 14**, and an overview of innovation case study economic data is presented in **Table 15**.

Table 14 - Overview of Innovation Case Studies by Category (Part A)

Innovation Category	Supply Chain Segment	Name of Innovation	Location(s)	Jobs	Local Economic Impacts
Food Hubs					
	Distribution	Green BEAN Delivery	IN, OH, KY, MO	100+	\$2 million invested in local economy
	Distribution	Ontario Food Terminal	Ontario, Canada	Supports directly/indirectly over 42,000 jobs, Terminal itself has 36 staff	Unknown
	Distribution	San Francisco Wholesale Produce Market	San Francisco, CA	600, after expansion 1000. Expansion will provide 300 temp construction jobs.	With expansion indirect revenue expected to increase from \$720,000 to \$1.04 mil. Dollars/yr. Sales expected to increase to \$735 mil.
	Distribution	Southern Wisconsin Food Hub	Dane County, WI	Will require 6 FTE and 16 PTE and up to 10 third party employees	Expected impact: 400 jobs, \$20 million in sales, plus \$60 million into local economy
	Distribution	Veritable Vegetable	San Francisco, CA	100+	Over \$40 million in annual sales, serves 350+ wholesale buyers, purchases from 1000+ farms
Technology					
	Distribution	Relay Foods	Charlottesville, VA	70+	Unknown
	Distribution	Door to Door Organics	CO, MI, MO, PA, IL	50+	Unknown
	Distribution	Farmigo	Palo Alto, CA	14	Unknown
	Distribution	AgLocal	Kansas City, MO	8	Unknown
	Distribution	Local Orbit	Ann Arbor, MI	9	Unknown
Urban Agriculture					
	Production	Green City Growers Cooperatives	Cleveland, OH	35-40	Produces 3 million heads of lettuce a year, and currently employs 25 worker-owners at \$10/hr
	Production	Growing Power	Milwaukee, WI	20+	Produces \$750,000+ worth of crops on a combined total of 200 city acres
	Production	Truly Living Well	Atlanta, GA	35	Produces 25,000+ lbs of food annually, aggregator for smaller producers
	Production	SHAR	Detroit, MI	Unknown	Expected impact: \$25,000-\$35,000 per acre of urban farm land and 2,500 to 3,500 jobs (\$10/hr) over the next 10 years

Table 14 - Overview of Innovation Case Studies by Category (Part B)

Innovation Category	Supply Chain Segment	Name of Innovation	Location(s)	Jobs	Local Economic Impacts
Incubators					
	Production	ALBA	Salinas, CA	15	Sales increases of 25-50% annually, into local economy
	Processing	DC Central Kitchen	Washington, DC	140 full time staff run the incubator; 90 culinary graduates per year	Purchased 215,000 lbs of fresh (recovered) local produce in 2012, injecting \$156,523 into regional economy (WV, VA, MD, PA, NJ, NC); Social impacts with economic benefit: 1) saves gov't \$2.5M in prison costs by training ex-offenders with 1.5% recidivism rate; serves 5,000+ meals daily to underserved schools in DC—effects on childhood obesity not yet known
	Processing	La Cocina	San Francisco, CA	Staff of 10 runs the incubator; 33 businesses served, each generates 1-3 jobs per business (up to 99 jobs total on average)	Generates 60% of its own operating costs (\$700,000 of outside investment to operate, generating \$4,000,000 in direct returns)
	Processing	Rutgers Food Innovation Center	Bridgeton, NJ	Will facilitate creation of 1,000 new jobs	Estimated impacts: \$200 million in cumulative revenue for clients, millions in tax revenue; one client business alone bringing in 50 jobs
	Production	Crop Circle Kitchen	Boston, MA	100 companies created at the incubator; 40 still working with incubator; 200+ local jobs created	Greater Boston region spent \$3.5 billion on food last year, but very few of these dollars come back to Boston. Capturing just 1% of this total spend would result in \$350 million being returned to the local economy.
Farm to Institution					
	Consumption	Revolution Foods	Oakland, CA	1000+ employees hired from within the communities they serve, all employees are paid above minimum wage and full-time employees have access to benefits (e.g. health insurance, sick leave, etc.)	Unknown

Table 15 - Overview of Innovation Case Study Economic Data (Part A)

Supply Chain Segment/ Innovation Category	Case Study	Location	Public/Private Investment	Annual Direct Revenues	Property/Other Taxes Paid	Direct Jobs	Indirect Jobs	Job Training	Starting Hourly Wages
PRODUCTION									
Urban Agriculture	Green City Growers	Cleveland, OH	\$17.5 million	—	—	25	—	—	\$10
	Growing Power	Milwaukee, WI	—	\$750,000	—	150	—	2119	—
	Farm to Family Naturally	St. Louis, MO	\$10 million public/ \$5 million private	\$650,000 wholesale and \$13 million retail	New facility opening 2013; will pay \$128,000 in taxes annually	100	—	Internal food safety, handling and line duty education program plus job training	\$9 to \$22/hr
Incubators	ALBA	Salinas, CA	\$40,000 per farm business (technical assistance, subsidies on land and equip); then individual farmers/students invest \$100,000 on average over 5 years; 50% of funding is public	\$5 million in produce sales per year for ALBA Organics brand (owned by ALBA)	\$60,000 in payroll and property taxes	10 jobs (ALBA employees), 100 part-time or full-time jobs generated by incubator businesses per year.	—	350 farmers entered into Farm Ed program over last 12 years, 170 graduates	Depends on age of the business and incomes of the farm/owner, farm owner typically earns ~\$10/hr
PROCESSING									
Incubators	DC Central Kitchen	Washington, DC	\$650,000 in private foundation contributions for Nutrition Lab; \$300,000 for Healthy Corners from DC Dept of Small and Local Business Development in 2011/2012	\$1.7 million from DC Public Schools in 2011; \$2.7 million from DCPS in 2012; \$40,000 in Healthy Corners produce sales in 2012	—	145,20 jobs for CJT graduates; 48 jobs at DCCK total	—	—	\$12.50
	La Cocina	San Francisco, CA	\$700,000	\$1,800,000	—	14	120	—	\$12.00
	Rutgers Food Innovation	Bridgeton, NJ	—	\$200 million	—	1000	—	1106	—

Table 15 - Overview of Innovation Case Study Economic Data (Part B)

Supply Chain Segment/ Innovation Category	Case Study	Location	Public/Private Investment	Annual Direct Revenues	Property/Other Taxes Paid	Direct Jobs	Indirect Jobs	Job Training	Starting Hourly Wages
DISTRIBUTION									
Food Hubs	Green Bean Delivery	IN, OH, KY, MO	Self-financed	Over \$15 million	Currently leasing facilities	160	Countless	—	Over \$10 per hour for warehouse or delivery
	Ontario Food Terminal	Toronto, ON	Government bonds issued and paid back by Terminal	Rental income	—	36	100,000	—	—
	San Francisco Wholesale Market	San Francisco, CA	Self-sustaining through rental income	\$475 million combined revenue for all merchant tenant businesses (pre-build out)	\$720,000 (pre-build out)	600 (merchant businesses pre-build out)	300+ construction jobs (for build out)	—	—
	Wisconsin Food Hub	Dane County, WI	Dane County, WI	—	—	32	400	—	—
	Veritable Vegetable	San Francisco, CA	No formal investments; incentives/grants totaling \$493,000 since 1974 for hybrid truck purchases, re-usable pallet wrap program, training	\$44 million	\$47,946 property tax 2012-13	120 full time employees	—	—	Average salary is \$23.05 w/o management salaries; \$26.66 with management salaries
Technology	AgLocal	Kansas City, MO	\$1.5 million	—	—	8	—	—	—
	Door to Door Organics	CO, MI, MO, PA, IL; also serves NJ and DE	\$3.25 million	—	—	245	—	—	All jobs are paid above local living wage
	Farmigo	Palo Alto, CA	\$10 million	—	—	14	—	—	—
	Good Eggs	San Francisco, CA	—	—	—	16	—	—	—
	Local Orbit	Ann Arbor, MI	—	—	—	7 (plan to add 2 more in 2013)	—	—	—
	Relay Foods	Charlottesville, VA	\$14.25 million	—	—	100+ with more hires being made	Estimated 200+ regionally	—	Offers a fair and competitive wage to all starting employees, regardless of position

Table 15 - Overview of Innovation Case Study Economic Data (Part C)

Supply Chain Segment/ Innovation Category	Case Study	Location	Public/Private Investment	Annual Direct Revenues	Property/Other Taxes Paid	Direct Jobs	Indirect Jobs	Job Training	Starting Hourly Wages
RETAIL/CONSUMPTION									
Farm to Institution	Portland Public Schools	Portland, OR	\$160,750	\$2.17 million		7	10		
	Revolution Foods	Oakland, CA/other US cities	Virtually all private investment, with less than 10% from foundations	\$67 million	None, all facilities are on leased properties	1000	—	—	All employees start above minimum wage; starting wage depends on position
Public Market	Eastern Market	Detroit, MI	\$15,000,000 since 2008	\$1 million	—	25	450	25 (food retailing and processing)	\$10/hr
Farm Stand/ Mobile Market	Eastern Market	Detroit, MI	\$25,000	\$50,000	—	12 (seasonal)	0	Fresh Food Fellows (seasonal)	\$10/hr

Case Study Economic Data sources

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Rutgers Food Innovation Center: Rutgers Food Innovation Center Website: <http://www.foodinnovation.rutgers.edu/index.html>

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MAJOR FINDINGS FROM FOOD SECTOR INNOVATIONS

Our team reviewed a wide variety of food sector innovations in urban areas, with an eye toward highlighting and learning from examples that had the greatest impact on local economic development, job creation, and increasing access to healthy affordable food. Our major findings fall into three broad categories: 1) the innovation from a national perspective to provide context; 2) the innovation's direct and indirect economic impacts; and 3) specific examples of innovations and what cities are doing to develop local food sector and food systems.

There is no single model when it comes to innovation, and what works for one city may not work for another. That said, the successful innovations identified in this research reveal that many of the best models are those that are diversified and integrated, in that they have multiple consumer segments, multiple market channels, and have diversified for profit/nonprofit revenue streams.

Taken as a whole, the set of innovations and case studies reviewed suggest that the local and regional food sector has both the potential to act as a significant economic driver in terms of growth, job creation, and increasing access to healthy food, and in fact is already beginning to do so. From the well-known work of farmers markets, and the increasingly sophisticated negotiation of food supply and demand of regional food hubs, to the cutting-edge combinations of food business incubators, commercial/community kitchens, and shared processing/training facilities, the local and regional food sector is both slowly building on mature systems of growth and job creation, and quickly reconfiguring these systems to better meet the increasing demand for healthy affordable food.

That said, there is much variation both between and within these categories of innovation, in terms of types and levels of investment needed to support sustained growth; in most categories, there is insufficient data to make broad generalizations about potential return on investment. For example, investment in food technology businesses have typically been private, in the range of \$1-2 million, but there is little data on the impact of these particular investments or broader research on where in the sector investment is most needed. In the case of food waste, smaller private businesses are being joined by larger nonprofit and municipal efforts, with an eye toward replicating the 1.4 million jobs currently supported by similar efforts in recycling and composting.

However, it is worth noting that as each sector grows and matures, there is increasingly more information available (informal and inconsistent though it may be) on what is working and what is not. This is critical for understanding where, how, and how much to invest or to support specific policy or incentive strategies. For example, decades of experience in farmers markets and public markets have yielded knowledge on characteristics that support sustainability and growth, and the role of policies and investments in this process. Even among the burgeoning cases of food hubs and food incubators,

more established entities such as **Veritable Vegetable** (hub) and ACEnet (incubator) are centers of growth, job creation, and knowledge on how to take their sectors to the next level.

Still, given all of this, our research suggests that right now, some sectors may have more potential for investment or policy impact on local and regional economic development and job creation than others:

- **Local/regional food hubs:** While these may only directly provide 15 jobs on average, they contribute to job creation throughout the local food supply chain.
- **Food business technology companies:** These range in size from 7-70 employees, but are a source of high-skill, high-pay jobs, are quickly expanding, and are an important intermediary in meeting fast-growing demand.
- **Food business incubators:** These “businesses that create businesses” provide the local learning infrastructure to decrease the failure rate of new businesses (from 56% to 13%), and bring job training and business ownership opportunities to historically excluded populations.
- **Farm to institution supporting businesses:** There is tremendous demand from institutions for regional sourcing, but a growing need for intermediaries to manage relationships and logistics; these businesses are bridging this gap, and a growing body of knowledge is helping to understand how to best deliver economic benefit to both buyers and suppliers.

These types of businesses support growing areas of consumer interest in purchasing local food through intermediaries (as opposed to direct markets) and have the potential to quickly expand in urban areas. For instance, food business technology companies have low start-up costs because they do not necessarily require a brick-and-mortar structure, and many are quickly expanding to other cities once they have a solid base in one area. With expansion comes the development of additional jobs to support replication in other cities. For example, **Revolution Foods**, a healthy foodservice company for school districts across the country, has found success with a similar model: identifying a gap, figuring out what works, and replicating in multiple cities, with 900+ jobs created to show for it.

Other types of food sector innovations offer less potential for jobs, but are significant generators of other benefits. For example, farmers markets have high “ripple effects” or economic benefits on the local and regional economies where they are based. Mobile markets and food waste recovery, though still emerging innovations with limited data, hold significant potential in terms of social and environmental benefits, and are often designed to maximize these particular benefits.

It should be noted that many jobs in the food sector, even among innovative businesses, are low to mid-wage jobs that do not require high levels of education. Food hubs employ delivery drivers and packers, for instance, which are positions that tend to be lower paying, but which are also transferable across companies and industries. Yet there is also room for food

entrepreneurs to take root in cities, drawing people with advanced education and skills into higher paying jobs. For example, food technology companies seek webmasters, software developers, business managers, and engineers.

Finally, cities can have various roles in each type of food sector innovation category. Cities can be owners in some models (e.g. public markets and food hubs in urban areas, such as Eastern Market in Detroit). They can also offer policies that support the establishment of innovations in their urban vicinity. For instance, food technology companies primarily receive private investments but would benefit from public policy that allows users of their products to access public space for food order pick-up by consumers. Similarly, cities can play a role in the establishment of business incubators through public investment and solicitation of federal funds. Just as important is the role of cities as purchaser. Shifting procurement policy to emphasize local and sustainably produced foods can provide a significant market for food hubs and commissary business.

FOOD SECTOR INNOVATIONS AND CASE STUDIES

A. Innovation: Food Hubs

Concepts and Definitions

There are many conventional food distribution companies operating regionally that purchase and sell both local and non-local food products. These companies range in size and distribution area; the margins are thin and the markets competitive. Food hubs are a twist on this function by emphasizing local and regional food and exercising a commitment to farmers and regional economies. Vertically integrated retail companies now operate their own distribution systems and handle the majority of produce that is distributed in the United States. With the increase in demand for local food, food hubs and conventional regional distributors have a competitive edge in the market and a new market opportunity to supply regional retailers, foodservice, institutions, and restaurants and by supplying local product to broadline distributors and to the vertically integrated retailers.

According to the *Regional Food Hub Resource Guide*⁶², which was written by USDA-AMS and the Wallace Center in 2012, “A regional food hub is a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand.”

Figure 3 - Common Operations and Services Provided by Food Hubs



⁶² Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. *Regional Food Hub Resource Guide*. US Dept. of Agriculture, AMS Washington DC. 2012

Summary of Key Findings and Observations

Food hubs play a vital role in growing local food economies by aggregating farm products from many small- and mid-sized farms and distributing; marketing across the urban landscape; and providing supply upon which additional businesses can grow and develop. Although food hubs exist both as for-profit and nonprofit companies, the most successful ones appear to be legally formed as for-profits or cooperatives. Currently there are significant gaps in the literature in terms of start-up costs and regional economic impacts but the field is growing quickly and we expect more information about this within the next year or two. Many hubs manage their risk by selling both wholesale and direct-to-consumers (box programs or community supported agriculture, or CSA, arrangements), while others that have strong farmer supply focus solely on wholesale, maintain warehouse and cooler space, own or rent trucks, and work extensively with growers and buyers. We are early in the development of the food hub concept. As a result many hubs are under five years old, the average gross revenue is just under \$1 million, and food hubs themselves directly provide on average 15 jobs, but contribute to job creation up and down the local food supply chain. The more mature hubs that have been in business much longer provide over one hundred jobs directly and thousands indirectly. Similarly, feasibility studies project similar impacts at when operating at full capacity.

Observations on the Research/Body of Knowledge

Because a large majority of food hubs have started business only in the last several years, many hubs are still in an early stage of development, and do not report themselves as profitable but do report high levels of growth. Only one survey of food hubs has been completed (2011),⁶³ which received responses from 70 hubs including public markets that have wholesale functions; there are now over 250 food hubs in 2013. As a result, good data on job potential and economic development impact is scarce. There are gaps in knowledge around investment levels, cost of start-up, and regional economic impacts. However, the data that does exist from existing hubs and well-executed feasibility studies is very promising and has implications for urban, peri-urban, and rural communities.

The *Resource Guide* explains that, “Regional food hubs are key mechanisms for creating large, consistent, reliable supplies of mostly locally or regionally produced foods. At the core of food hubs is a business management team that actively coordinates supply chain logistics. Food hubs work on the supply side with producers in areas such as sustainable production practices, production planning, season extension, packaging, branding, certification, and food safety—all of which is done to enable these producers to access wholesale customers, such as buyers for foodservice institutions and retail stores. Simultaneously, food hubs also work on the demand side by coordinating efforts with other distributors,

⁶³ Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. Regional Food Hub Resource Guide. US Dept. of Agriculture, AMS Washington DC. 2012

processors, wholesale buyers, and even consumers to ensure they can meet the growing market demand for source-identified, sustainably produced, locally or regionally grown products.”⁶⁴

Food hubs are facilities that help bring products together from small- and mid-sized farms so they can successfully be sold into larger wholesale markets. They often fill a gap in the system by taking on aggregation of produce, meats, and value-added products; storage, sorting, and repacking; and labeling and distribution (either directly or by contracting this out). This offers opportunity to farmers but also provides the needed products for businesses up the chain such as schools, processors, institutions, retailers, and others. As a result, food hubs can be a pivotal player in realizing the economic development potential from local and regional food systems. Local sourcing is a driving factor in the market, and its association with healthy food, also a driver, amplifies this.

Farmers markets and public markets are most often venues for direct marketing of products. However a number of them also serve to facilitate sales at the wholesale level, bringing them much closer to the role and functions we attribute to food hubs. Many large cities have either a wholesale market (sometimes called a terminal market) or a public market. Such facilities can play a major role in regional food systems: they have existing supply, knowledgeable management, cold space, and often times they are already paid for. For example Detroit’s Eastern Market is both direct marketing and runs a wholesale market and has plans for a processing facility to add value to local products so that they can be sold into the foodservice market. Similarly, Santa Monica’s Farmers Market has designated space for wholesale transactions that are arranged in advance and picked by distributors or schools. Wholesale markets such as the **San Francisco Wholesale Market** and **Ontario Food Terminal** offer further models. The National Association of Public Market Managers has shown increasing interest in helping their members understand how public markets can function as food hubs and create more economic opportunities for cities and farmers.

Risk and Best Practices

Risks:

- Inadequate supply of products at the quantity and quality needed
- Poor business planning
- Lack of entrepreneur interested in owning or running a food hub
- Access to capital and cash flow challenges

⁶⁴ Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. Regional Food Hub Resource Guide. US Dept. of Agriculture, AMS Washington DC. 2012

- Large buyers may say they want local product but may not willing to change internal systems to work with hubs
- Pricing risk inherent in produce industry which may squeeze margins and challenge profits

Best Practices:

- Invest in a feasibility study and business plan to determine production capacity, markets, gaps in system, core functions, revenue, expense, business model, scale, and more.
- Work with public agencies to secure tax breaks, grants, low interest loans, etc.
- Diversify markets (many do both direct marketing and wholesale, spreading risk and labor).
- Diversify product type and offer goods all year round, even if not locally sourced.
- Initially renovate existing facilities, rent trucks rather than purchase, and anticipate growth when making these decisions.
- Become GAP and HACCP (food safety) certified and work with suppliers to attain this as well.
- Secure a management team with experience in marketing and sales.
- Build loyalty for the hub's brand and tell the local story.
- Collaborate with other intermediaries and partners, including existing and new food hubs, to strengthen the market and build efficiencies.

Business Structure and Ownership Model:

- The National Food Hub Collaborative survey indicates that 42% of food hubs market wholesale, 36% market direct-to-consumer, and 22% do both.⁶⁵
- It also notes that 40% of food hubs are privately held companies (LLC, sole proprietor, partnership, corporation), 32% are nonprofits, 21% are cooperatives, and 5% are publically held (public markets).⁶⁶
- The literature does not provide significant information on start-up costs, which are highly dependent on key aspects of the business plan. Costs can vary a great deal depending on the core functions the hub chooses (aggregation,

⁶⁵ Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. Regional Food Hub Resource Guide. US Dept. of Agriculture, AMS Washington DC. 2012

⁶⁶ Ibid.

storage, cooling, freezing, distribution, light or heavy processing), size of facility, new construction or retrofit, location, and own, lease, or contract for distribution. Leasing facilities and vehicles, and working with an existing distributor or public market facility to expand into a food hub role can help manage start-up costs.

- Numerous state and federal program offer grant support to food hubs as well as private philanthropic foundations. Grant funding for for-profit enterprises is limited, with the exception of farmer-owned businesses that can receive grants through several USDA Rural Development programs. As a result, many for-profits finance by savings, credit cards, and commercial loans and in some cases debt and equity investments from investment firms or individuals embracing a social mission. Public institutions such as cities and states have begun to offer tax credits and economic development grants (e.g. Wisconsin Food Processing Plant and Food Warehouse Investment Credit and The Economic Development Tax Credit⁶⁷). An excellent list of financing options can be found in Building Successful Food Hubs⁶⁸ and the Regional Food Hubs Resource Guide.⁶⁹

Jobs, Labor, Workforce Development

- According to the National Food Hub Collaboration survey of 70 food hubs in 2011 food hubs on an average have 7 full time and 5 part time employees.⁷⁰
- The average employment data is influenced by the fact that so many food hubs are in early stage development. Employment within a well-established food hub is higher. For example, **Veritable Vegetable**, which has been in business for nearly 40 years, has over 100 employees.
- Direct food hubs positions in management, operations, sales, facilities, production, warehousing, and distribution.

Effects on the Economy

- According to a recent study 2.2 jobs are created for every \$100,000 in local food sales.⁷¹
- The **Southern Wisconsin Food Hub** feasibility study indicates that the hub (now the **Wisconsin Food Hub Cooperative**) would drive indirect employment opportunities. At capacity, the facility could be expected to create

67 Dane County planning and development department. (2011). *Southern Wisconsin Food Hub Feasibility Study*.

68 Illinois Department of Commerce and Economic Development, Building Successful Food Hubs: A Business Planning Guide for Aggregating and Processing Local Foods in IL. P. 48-51. Published by FamilyFarmed.org, Oak Park, IL 2012

69 Barham, J., Tropp, D., Enterline, K., Farbman, J., Fisk, J., & Kiraly, S. (2012). Regional food hub resource guide. Washington, DC.: U.S. Dept. of Agriculture, Agricultural Marketing Service.

70 Ibid.

71 Institutional Food Market Coalition. (2010). *2010 Program Report*. Madison, WI.: Dane County Department of Planning and Development.

over 400 jobs. The authors also estimate a regional economic multiplier effect of 2.6. At capacity and on a retail sales basis, the food hub would inject an additional \$60 million into the local economy (\$20 million wholesale ~ \$26 million retail x 85% not currently local x 2.6 multiplier). It was estimated that due to reduced distances for distribution, the hub could reduce carbon emissions by 2.4 million pounds per year.⁷²

- Terminal markets and public markets that offer regionally produced farm products at the wholesale level can have a big impact on the regional economy and often have significant infrastructure in place or available for repurposing. The **Ontario Terminal Market** is an important generator of economic activity, directly and indirectly supporting over 42,000 jobs.⁷³ The Terminal itself has 36 staff (management, administration, maintenance, security, etc.) and provides products to over 5,000 local businesses.

Local Food System/Local Economies

Food hubs create a direct link between rural farms and urban consumers. As indicated in [Section Three](#), a large portion of the demand for local food is in urban areas and a large portion of farms that are positioned to meet this demand are located in peri-urban or rural areas adjoining urban ones.

- An overwhelming majority of surveyed food hubs distribute, aggregate and provide key services to farmers, including marketing and promotion, transportation or on-farm pickup of goods, and finding new markets for producers. The median number of farmer/suppliers for a food hub reported is 40.⁷⁴
- Local Food Hub in Charlottesville, VA reports that it has:
 - Reinvested over \$1.3 million in the local farming community
 - Created 15 paid jobs at their distribution and farm operations
 - Helped to retain and support over 200 agriculture-related jobs
 - Increased the local purchasing of the 120 active buyers by an average of 30%
 - Provided healthy fresh food for meals and snacks to over 30,000 school children a year
 - Offered apprenticeships and high school internships to budding farmers
 - Donated more than 130,000 pounds of produce to hunger relief organizations

⁷² Dane County planning and development department. (2011). *Southern Wisconsin Food Hub Feasibility Study*.

⁷³ Ontario Food Terminal Act. R.S.O. 2009, c. 33, Sched. L, s. 23

⁷⁴ Barham, J., Tropp, D., Enterline, K., Farbman, J., Fisk, J., & Kiraly, S. (2012). *Regional food hub resource guide*. Washington, DC.: U.S. Dept. of Agriculture, Agricultural Marketing Service.

- About 60% sell wholesale, while about 45% conduct retail sales. Nearly 90% sell to restaurants, and more than half of them sell to grocery stores, colleges and universities, food cooperatives, other food distributors, and school foodservice providers.⁷⁵
- More than half (51%) of surveyed food hubs stated that they are partnering with/selling to conventional distributors.⁷⁶ Hubs provide:
 - Smaller aggregation points for regional distributors/wholesalers
 - Reliable and ready supply of local/regional products
 - Broader and more diverse selection of source-identified and branded local products
 - Training/technical assistance to “grow” more producers
 - Take advantage of the existing infrastructure available at wholesale/terminal markets across the country



Regional farmers selling wholesale in the farmers market area of the Ontario Food Terminal.

Source: *oftb.com*

Other impacts

- More than 40% of food hubs are working in "food deserts" to increase access to fresh, healthy, local food products in communities underserved by full-service food retail outlets.
- Many focus on organic or sustainably produced products.
- Many donate unsellable products or offer processing grade product at very affordable prices to schools, food banks and others.⁷⁷

⁷⁵ Barham, J., Tropp, D., Enterline, K., Farbman, J., Fisk, J., & Kiraly, S. (2012). Regional food hub resource guide. Washington, DC.: U.S. Dept. of Agriculture, Agricultural Marketing Service.

⁷⁶ Ibid.

⁷⁷ Barham, J., Tropp, D., Enterline, K., Farbman, J., Fisk, J., & Kiraly, S. (2012). Regional food hub resource guide. Washington, DC.: U.S. Dept. of Agriculture, Agricultural Marketing Service.

CASE STUDIES

Ontario Food Terminal > Toronto, Ontario > www.oftb.com

The Ontario Food Terminal (OFT), founded in 1954, is the main distribution hub for fresh fruit, vegetables, and horticultural products in Ontario and the region. Designed to give the cities' produce distributors better facilities and distribution capacity and to promote greater economic success for regional farms, the facility was built at what was then the edge of the city. Since then, the city has grown to encompass the terminal's 40-acre site. It is the largest wholesale fruit, vegetable, and produce distribution center in Canada and the third largest in North America.

- 1,001,000 tons of produce or 5.5 million pounds are sold each day.
- Between 23% and 28% of the produce sold at the market is grown in Ontario, with the rest shipped in from across Canada, the United States, and beyond.
- The site includes 550 farmers market stalls selling direct and wholesale; 100,000 square feet of cold storage; and extensive warehouse units.

The facility is also an important generator of economic activity, directly and indirectly supporting over 42,000 jobs.⁷⁸ The Terminal itself has 36 staff (administration, maintenance, police, sanitation, and cold storage). The OFT estimates that over 100,000 jobs are indirectly supported by the facility when you consider that 5,000 registered buyers rely upon the Terminal for the supply of fresh fruit, vegetables, and produce upon which their businesses depend to some extent. Just as importantly, by connecting Ontario farmers with buyers, the Terminal supports higher farm revenues, strong urban-rural linkages, and stronger rural communities.

The Ontario Food Terminal is owned and operated by the Ontario Food Terminal Board, which is an operational enterprise operating under the Ontario Ministry of Agriculture and Food. Initially bonds were issued to raise funds to build and operate the Terminal. Those bonds were paid off and currently the operation is entirely self-funded from fees charged to the users of the facility. The OFT board estimates that for every dollar in sales, approximately three dollars is returned to the Ontario economy.



Source: oftb.com

⁷⁸ Ontario Food Terminal Act. R.S.O. 2009, c. 33, Sched. L, s. 23.

Use

Users include tenants that rent space to operate their businesses and buyers:

- 21 warehouse tenants
- 50 office tenants
- 400 farmers market tenants
- 5,000 registered buyers

One recent study⁷⁹ has recommended changes to the Terminal to expand its impact and to capitalize on trends not present when it was originally built. These include:

- Implement a site redesign to increase volume of produce and the variety of foodstuffs the facility handles, including the addition of fish, cheese, or dairy products, and to improve traffic and waste management.
- Place the Terminal in a central role in the development of a food hub for Toronto, bringing together stakeholders from industry, educational, and community interests
- Consider the addition of three types of facilities that could improve the profile, image, and usefulness of the Terminal including canning and drying facilities, a green roof, and/or a rooftop farm.

Veritable Vegetable > *San Francisco, California* > www.veritablevegetable.com

As an organic produce distributor, Veritable Vegetable (VV) purchases, transports, and supplies high quality organic fruits and vegetables. VV's commitment to creating social value rather than the bottom line is an integral part of their business model. As an instrument for positive social, economic, and environmental change, the company stresses high integrity relationships, quality produce, minimal environmental impact, and active involvement in the community.

VV's 700+ customers are retailers, restaurants, schools, corporate campuses, hospitals, and wholesalers. VV purchases products from over 300 producers. Located in San Francisco, VV's distribution area covers the entire state of California (with an emphasis on the local Bay Area), and includes areas within Arizona, Colorado, Nevada, and New Mexico. They also ship to Hawaii and New York. The company operates a fleet of their own zero-emission, hybrid trucks that have 24 separate delivery routes 7 days per week, 365 days per year. VV's annual sales are approximately \$44 million for 2013. VV

⁷⁹ Coutu, S., Fusca, D., Shyllit, R., Thorpe, M., and Vidoni, M.. (2012). Fresh thinking: New directions for the Ontario Food Terminal. University of Toronto.

operates 38,000 square feet of warehouse space with another 6,000 square feet in development; of this warehouse space, 15,500 square feet are walk-in coolers with another 3,000 square feet of walk-in coolers in development. VV employs 120 staff members, 60% of which are women.

Mission Driven

VV is a social enterprise driven by its commitment to farmers, healthy food, the environment, social justice, and a sustainable business model. To do this, VV works to:

- Maximize profit for small- and mid-sized farmers by paying the highest return possible for their products and paying punctually.
- Successfully work with farmers to forecast crop needs and market opportunities.
- Maintain a compensation structure based on fairness (the wage ratio from Executive Management to entry level positions is less than 5:1).
- Collaborate with local community groups as well as sustainable agricultural organizations to increase access to organic produce, affect policy and support the development of a sustainable food system.

Sustainability Initiatives

- VV's green fleet includes 1 electric cart, 2 Sprinter vans, 3 bobtails, 19 tractors, and 20 refrigerated trailers that range in size from 32 ft to 48 ft; most of their green fleet are zero-emission hybrids, and the company will reach zero emissions by the end of 2013.
- VV helped pilot the City of San Francisco's compost program, and routes unsellable product to local food banks. The company diverts 99% of its waste, and has a rigorous waste training program for all staff.
- In 2009 VV installed 560 solar panels on their main warehouse, generating 70% of their electricity needs.

History

Veritable Vegetable (VV) is the oldest organic produce distribution company in the country. Since 1974, VV has created community alliances and promoted sustainable agriculture while earning a reputation for quality, integrity, and leadership in the organic industry. In the company's early years, VV's employees organized themselves as a collective, utilizing participatory management techniques. Though they formalized their business structure over time, the three women owners still maintain many of the company's founding values. VV was instrumental in moving the original national organic standards forward.

San Francisco Wholesale Produce Market > San Francisco, California > www.sfproduce.org

The San Francisco Wholesale Produce Market is a major piece of the San Francisco Bay Area's food system infrastructure. It is the largest multi-tenanted produce wholesale and distribution facility run by an independent nonprofit entity in Northern California and spans over 20 acres, including 300,000 square feet of warehouse space. The market, in existence for 137 years, moved to its current location in southeast San Francisco in 1963. It directly supports more than 25 businesses that cumulatively employ more than 600 people.

The City and County of San Francisco recently approved expansion plans for the Market through a 60-year Ground Lease agreement with the Wholesale Produce Market. The Ground Lease provides the Market with new jurisdiction over a 3 acre parcel of City-owned land adjacent to the Market's existing main site. This additional parcel will in part allow for the addition of 200,000 square feet of warehouse space as part the Market's Reinvestment and Expansion Project. Each new warehouse building in the expansion project will be completed in a different phase and all phases will be financed through conventional loans to be repaid with rent revenue. Once the upgrades and expansion are paid for, remaining rent revenue will go to San Francisco's General Fund, its main spending account. Therefore, the Market will provide a new source of revenue to San Francisco through rent payments. Additionally, the increased growth of businesses operating at the site and the reappraisal of the property is expected to increase indirect revenue, such as payroll and utility taxes, from \$720,000 to at least \$1.04 million dollars annually, an increase of 44%. Construction of the new facilities is expected to provide more than 300 temporary construction jobs. After expansion, the Market will employ over 1,000 people. Sales at the Market are expected to increase from approximately \$475 million to \$735 million.

The Market is also an important contributor to healthy eating in the Bay Area by providing fresh produce to grocery stores, restaurants, and other retail outlets, and contributing over 1 million pounds each year to the San Francisco Food Bank. Working to close the loop with its waste, the Market helped pioneer San Francisco's "green bin" program and now diverts more than 85% of its waste, most of which goes back to farms in the region as compost.^{80 81}



Source: San Francisco Chronicle

80 Zigas, E. (2012). SPUR- San Francisco wholesale produce market letter.

81 Coté, J. (2012). *S. F. Produce Market to get \$100 million upgrade*. SF Gate.

B. Innovation: Food Incubators

Concept and Definitions

The number of business incubators across the United States is at a record high. According to the National Business Incubation Association, there are over 1,200 incubators serving more than 41,000 start-ups across the United States.⁸² Incubators primarily serve small- and mid-sized enterprises. There are over 300 food incubators labeled “culinary incubators” across the country. Business incubators as a concept “covers a wide range of processes that help companies lower failure rates in the initial phase and accelerate the development of those who have the potential to become generators of jobs and wealth. Incubators provide three main ingredients for developing a successful business: an entrepreneurial environment and training, access to mentors and investors, and visibility in the market.”⁸³ With this foundation of technical support and supportive networks, a business is in a better position to succeed, having had time to sharpen business plans and strategies prior to launching the new or improved business.

Food incubators run the gamut, from a full-spectrum continuum of services from start-up to growth and expansion, to highly specialized training that is narrowly focused on a specific point in the supply chain or centered on a certain product or product category. There are supply-side incubators such as **ALBA** in Salinas, CA, which is a farm incubator, training former farmworkers and new farmers on California’s Central Coast on how to produce, run, and manage a farm business. There are also demand-side incubators focused on food processing, meal preparation, and foodservice such as **DC Central Kitchen**, which serves schools and homeless shelters in the Washington, DC area.

Food incubators’ target clientele varies, from stay-at-home parents who want to do catering, to new immigrants who do not yet understand the system of formalized business in the United States, to formerly incarcerated individuals rebuilding their lives. The most innovative approaches incorporate a social change and social equity approach, and fill a niche that is currently underserved by more traditional business incubators. Another niche is in educating those who do not aspire to go to college, but want training and continued growth. From an employer’s perspective, “one of the most glaring shortages involves workers trained to do middle-skill jobs—those that require more than a high school diploma but less than a



Source: *San Francisco Chronicle*

⁸² Hatch, L. (2010). Betting on incubators to create jobs. *Bloomberg Businessweek*, (4192), 20.

⁸³ Moraru, C., & Rusei, A. (2012). Business incubators - Favorable environment for small and medium enterprises development. *Theoretical & Applied Economics*, 19(5), 169-176.

bachelor's degree."⁸⁴

Summary of Key Findings and Observations

The findings in this section are the result of analysis and merging of innovations that started off as independent research topics. As the research was underway, the team compared notes and discovered much overlap and in some cases redundancies between respective topic areas, but at the same time observed that an innovation comprising multiple facets and models could in fact be what makes the innovation most likely to succeed. What we found is that the most successful models, the ones that are creating jobs and garnering publicity, use a combination of strategies and are hybrids in their approach, whether they be nonprofit or for-profit. The original research topics included the following:

- Centralized processing facilities
- Culinary, foodservice, food retail, and other food sector job training
- Business incubators
- Commercial kitchens

Risk, Barriers, Constraints

For individuals wishing to enter into food businesses, incubators can provide an avenue to do so safely, while mitigating risk. Not only are incubators able to reduce risk, they also help food entrepreneurs overcome barriers that they might not have been able to overcome on their own.

- **Risk reduction via business incubation:** Incubators can reduce the risk of opening a new business. The National Business Incubator Association asserts that “participant survival rate after five years is 87%, compared with 44% for companies that do not use incubators,” which thereby decreases risk associated with new venture start-ups and reduced risk of failure.⁸⁵ Incubators also reduce risk by enabling new or growing businesses to test products and ideas prior to launching. According to food incubator Franklin County CDC in Western Massachusetts, “before you make your first commercial batch you can take advantage of our support in business planning, recipe development, scale-up and testing.”⁸⁶
- **Barriers to entry for food entrepreneurs:** Entrepreneurs struggle with high costs related to operations, production, and office space, which an incubator can provide for relatively low risk and cost. Other critical barriers

⁸⁴ Kanter, R. M. (2012). Enriching the ecosystem. *Harvard Business Review*, 90(3), 140-147.

⁸⁵ Hatch, L. (2010). Betting on incubators to create jobs. *Bloomberg Businessweek*, (4192), 20.

⁸⁶ Franklin County Community Development Corporation. (2013). *About the Western Massachusetts Food Processing Center*.

to entry include: food safety and quality assurance knowledge or licensing; food costs; labor costs; and labor availability (having job openings with no one to fill them). Food incubators address all of these in part or whole.

Business Structure and Ownership Model

Incubators tend to incorporate a number of operations or services in their model. Not only are they a place to aggregate and provide access to resources from many different streams, they also help lend credibility to the entrepreneurs they train.

The most innovative food incubators in our research are for the most part locally owned and serve local business (a roughly 100 mile radius, depending on the region), and thus invested in the local economy through the businesses they help get off the ground. Most are operating as nonprofits, but integrate non-subsidized revenue generation into their growth models through various fees for services or training, member dues, leasing of equipment or space, and sale of products. In some instances, the food incubator itself has partial ownership of the resultant businesses it has created. Some incubators have a for-profit component; they take hybrid approach, by operating a business within its incubator business that markets products for sale at a profit, which can then be reinvested into the incubator to expand or strengthen its programming.

Investment

- **Public investment:** Much of the investment in incubators comes from public (often federal) support, such as from the Department of Commerce's Small Business Administration and Economic Development Administration (EDA). A 2010 Bloomberg Business Week article describes EDA's investment in incubators: "[I]n 2009, the EDA invested \$80.7 million in incubators, which it says resulted in 8,746 jobs, and it plans to invest even more in 2010. Increasingly, lawmakers in Washington are embracing incubators as a relatively easy and cheap way to fuel future job creation."⁸⁷
- **Grants:** Many of the incubators working in the space around food and job training are operating in part from public and private grants from the US government and private foundations. In the past five years the Wallace Center has invested more than \$500,000 to support incubators in key areas where there were gaps preventing growth, such as a lack of food safety experience preventing an incubator from scaling up to larger markets. Current and former grantees include: **ALBA, DC Central Kitchen and La Cocina (each of which are detailed as case studies)**, Franklin County Community Development Corporation, and East Baker Commercial Kitchen.

⁸⁷ Hatch, L. (2010). Betting on incubators to create jobs. *Bloomberg Businessweek*, (4192), 20

Jobs, Labor, Workforce Development

Incubators play a large role in job creation and workforce development. In 2008, incubator-supported business ventures generated almost 315,000 full-time jobs, 41,000 part time jobs, and \$18.7 billion in annual revenue. They are making noticeable change, but also reaching historically underserved and underrepresented populations, who may not have previously had access to economic opportunity, so the benefits are widespread. Incubators also assist with creating sustainability in business endeavors, which only helps in creating high-quality, and long-term jobs.

- **Incubators are trending:** There is no lack of support for incubators, evidenced by the record high numbers, and the attention incubators are getting at the national level. In *Betting on Incubators to Create Jobs*, Lauren Hatch observes: “increasingly, lawmakers in Washington are embracing incubators as a relatively easy and cheap way to fuel future job creation.”⁸⁸
- **Food incubators serve a niche in workforce development:** Of note is the role that incubators play in providing jobs for those who have been historically disadvantaged, underserved, or excluded from education and economic opportunities, and who may need a guiding hand to steer them away from a path leading to crime, chronic unemployment, or underemployment. Incubators also serve a niche for those who prefer vocational training or mastering a hands-on trade. In a story on job training, the Harvard Business Review states that “part of the problem is that the United States lacks strong training programs for high school graduates who don’t seek four-year college degrees.”⁸⁹ Food incubators are perfectly suited to fill this niche.
- **Incubators are businesses that create businesses:** One of the most important elements of the successful incubators we have found centers on the business plan of the incubator itself. Wallace Center’s Healthy Urban Food Enterprise Development Center, funded 30 food enterprises from among 500 applications, with the those selected all having developed a business plan geared toward economic sustainability. According to CulinaryIncubator.com, “kitchen incubators sit somewhere between an early stage

⁸⁸ Hatch, L. (2010). Betting on incubators to create jobs. *Bloomberg Businessweek*, (4192), 20

⁸⁹ Kanter, R. M. (2012). Enriching the ecosystem. *Harvard Business Review*, 90 (3), 140-147.

Jobs created by DCCK
Finance
Chief Financial Officer
Controller
Finance Administrator
Accounts Payable Coordinator
IT Coordinator
Exec & Admin
CEO
Director of Administration and Logistics
Research and Executive Assistant
IT Coordinator
Director of Human Resources
HR Generalist/Recruiter
Development
Director of Development (currently hiring)
Deputy Director of Development
Assoc. Director of Development
Communications Manager
Senior Development associate
Development & Communications Associate
Campus Kitchens
Director
Deputy Director
New Site Development Specialist
Social Media Specialist
Program Managers/Coordinators (x5)
Kitchen Ops/Social Enterprise
Chief Operating Officer
Director of Kitchen Operations
Kitchen Supervisor
Product Administrator
Transportation Manager
Director of School Nutrition Services
Director of Nutrition & Community Outreach
Executive Chef, Nutrition Lab
Procurement Manager
Procurement Coordinator
Catering Sales & Event Coordinator
Healthy Corners Program Coordinator
DCPS Program Manager and Fresh Start Communications Liaison
Production Chef

innovation and an established small business format for creating other small businesses, each with the potential for future job creation,” and there is evidence that these incubators often “attract a large number of entrepreneurs to open their own for-profit incubators that offer fee-for-service and fee-for-kitchen time approaches, as well as sometimes owning stakes in the resulting businesses.”⁹⁰

- **Workforce development potential:** The Harvard Business Review article also describes the job-related impacts of businesses supported by incubators. “In the United States ventures supported by incubators generated an estimated 315,000 full-time jobs, 41,000 part-time jobs, and \$18.7 billion in annual revenue in 2008. In Michigan, the No Worker Left Behind program, which guarantees two years of free tuition toward an associate’s degree or occupational certificate, works closely with industry; in its first evaluation, 72% of the 62,000 people who had enrolled had either found a new job or retained their current job.”⁹¹ And an article in the Economic Development Journal reinforces the impacts of start-up businesses: “During the 20-year period from 1990 to 2009, start-up companies created an estimated 5 million jobs per year in the U.S. and expansion (emerging) companies created 8.5 million jobs per year.”⁹² According to Amy Cortese, author of *Locavesting*, approximately 80% of net new jobs created in the United States come from companies with 20 or fewer employees, and approximately 10% of jobs in a county or region are created from self-employed individuals.”⁹³
- **Employability:** Food incubators with an integrated strategy that goes beyond skills training enables graduates to become self-reliant and more sustainably employed, increases employability, and decreases chronic unemployment or underemployment.

Effects on the Economy

Incubators have the capacity to have a positive effect on the economy. They are able to provide access to multiple types of capital to help beginning entrepreneurs, and are able to be more efficient and have an even greater impact when they hone in on specific industries. There is an integrated approach that brings many organizations and businesses into their network, and allows them to have a significant multiplier effect as they create new businesses within their communities.

- **Multiple assets leading to economic impact:** It is important to note there are many types of capital beyond financial, physical, and infrastructure that impact the bottom line and success or failure of a business. Social capital is often overlooked, but for small and medium enterprises, it affects start-up, networking, value creation, sales,

⁹⁰ CulinaryIncubator.com, 2013

⁹¹ Kanter, R. M. (2012). Enriching the ecosystem. *Harvard Business Review*, 90 (3), 140-147.

⁹² Welch, J. (2012). The power of COLLABORATION. *Economic Development Journal*, 11(4), 36.

⁹³ Ibid.

growth, and more. Social capital can be quantified and leads to quantifiable economic outcomes, but too often is lacking, so entrepreneurs need training on building social capital.⁹⁴

- **More specialized is better:** The research shows that more specialized incubators are more efficient and have greater impacts for the costs incurred. One might think that the “one stop shop” model is ideal, providing technical support on topics across the entire business life cycle or any sector (food or otherwise), but the most successful models keep it simple. With 80% of incubators focused on 1-2 industries, specialized single-sector incubators rate highest on efficiency and effectiveness.⁹⁵ This point was validated in our interview⁹⁶ with Executive Director of **La Cocina**, Caleb Zigas, who suggested that their narrow focus enables them to do more with less, and to provide excellent customer service.
- **Multiplier effect:** Because good incubators are run like businesses, there are quantifiable multiplier effects because they spawn food businesses that often become incubators of sorts themselves, hiring staff and expanding programs.
- **Multi-sector approach:** Food incubators cannot operate in isolation, but are most successful and can make the most economic impact when they cultivate relationships across sectors, with partners such as universities and community colleges, investors, and government.

Local Food System/Local Economies

Since incubators are locally based, there is huge incentive to work with the local economy. Most incubators that work in food do tend to source locally, which helps add to the local food economy. Incubators also provide great networks in their region, and are able to link companies at various stages of the business continuum to create mutually beneficial relationships and economic growth.

Linking small companies with larger companies, not only provides more opportunities (for example, business to business contracts) for small businesses to grow, it also provides opportunities for large companies to revitalize themselves and invest in small businesses and the local community. This produces a win-win for all involved. “When incubators link new businesses to strategic partners and capital sources, their performance improves dramatically—in one study the average five-year survival rate for start-ups shot up from about 50% to 75%—and they create jobs that remain in the host region.”⁹⁷

⁹⁴ Adlesic, R. V., & Slavec, A. (2012). Social capital and business incubators performance: Testing the structural model. *Economic and Business Review*, 14(3), 201-222.

⁹⁵ Kanter, R. M. (2012). Enriching the ecosystem. *Harvard Business Review*, 90 (3), 140-147.

⁹⁶ Zigas, C. Personal Communication/Interview, February 15 2013

⁹⁷ Ibid.

In a recent survey by the Center for an Urban Future, about 70% of 200 SMEs that had become suppliers to large companies saw their revenues and employment double in the two years after the contract was signed.⁹⁸

Other impacts

A good incubator can impact the community in multiple ways. They focus on building resources and assets, and can bring members from all parts of the community to the table. Not only can they build economically viable businesses and entrepreneurs, they can also provide avenues to economic opportunity to communities that may not otherwise have had the chance, ensuring that economic benefits are shared by many. They have the capacity to consider not just economic benefits, but social ones as well.

- **Multiple benefits:** The food incubators that seem to have the most success have multiple bottom lines that include economics, but also an integration of social benefits that add value in other ways, and can in fact be quantified through proxies such as: health benefits (reduced medication), employment for at risk youth or formerly incarcerated individuals (less public funds required to support these now self-reliant trainees).
- **Community assets approach:** The most sustainable and successful models from Wallace Center's Healthy Urban Food Enterprise Development Center reveal that for businesses with multiple bottom lines, it is imperative that the business is rooted in the community, and that the effort is community-driven, and serves the community. If you build it, they may not come, so it does not make sense to build an incubator, then consider the rest, but rather to start with the community.
- **Equity impacts:** Food incubators and business incubators in general can play a role in addressing the needs of underserved job seekers, including those who are not currently "market ready" or employable, those who graduate from high school but do not wish to attend college, and those who prefer a vocation or trade.

CASE STUDIES

DC Central Kitchen > Washington, DC > www.dccentralkitchen.org

DC Central Kitchen (DCK) is a great example of an integrated and diversified model, in that it has both a nonprofit and for-profit approach to revenue generation, and has diversified its market channels and customer base, which include local

⁹⁸ Kanter, R. M. (2012). Enriching the ecosystem. *Harvard Business Review*, 90 (3), 140-147.

nonprofits and city agencies, schools, and others. This integrated model combines several innovations: commercial kitchen, centralized processing, culinary training and food business incubation, and food waste recovery.

DC Central Kitchen is a nonprofit, tax exempt 501(c)3 organization that began operations in January 1989. Driven by the desire to reduce redundancy, waste, and high costs for the hundreds of Washington, DC-area nonprofits fighting hunger, DCCCK created a “central kitchen.” This in turn created an instant economy of scale. Recovering leftover and unwanted food, preparing and distributing nutritious meals in bulk, and creating an efficient mechanism to procure and deliver meals yields a net savings to the nonprofits served, as well as for the funders, companies, and government agencies supporting these community services. DCCCK currently employs over 145 full- and part-time staff, 68 of whom are DCCCK graduates. Over the last 20 years it has improved and documented its award-winning Culinary Training program and is replicating it across the United States and the world. DCCCK’s other programs include: Healthy Corners, Healthy Returns, Truck Farm, Healthy School Food, Campus Kitchens, and First Helpings. These programs cover a range of services, from providing markets for small and local farmers and helping corner stores stock fresh foods to providing children and youth with access to healthy food and nutrition education, and feeding the homeless.

Through ongoing process improvement, growth, and diversification of its revenue streams, DCCCK has brought their centralized processing to an even greater scale, and opened a second facility they call the “Nutrition Lab.” In this new 6,000 square foot facility, they provide training, receive and store foods, and prepare them on site in a much larger commercial kitchen. This allows them to produce 10,000 meals a day to a growing and increasingly diversified market of what is now 100 local community and social service organizations and counting, plus nine DC Public Schools, one private school, and others. They recently created a procurement team, to streamline and standardize their supply chain logistics in order to manage the flow of product that is both donated and purchased from local farms.

In 2012, they received 630,000 pounds of donated food, 239,765 pounds of which was fruits and vegetables. Further up the food supply chain, DCCCK is purchasing recovered produce. On average, 40% to 60% of materials on farm are wasted. DCCCK buys local produce that might otherwise go to the compost pile, and processes the blemished and otherwise lower grade produce into other products and meals. Some can also be recovered through donation, creating a hybrid model of recovering and purchasing.

With each meal, there is a message. The 100 organizations that receive meals also send their clients to enroll in DCCCK’s job training, including residents of homeless shelters, halfway houses, and other supportive programs. Graduates of DCCCK’s 14-week course, which averages 80-90 graduates per year, boast a 90% job placement rate, with 68 of DCCCK’s graduates now working at DCCCK. They are able to earn a living wage of \$12.50 per hour and benefits, supported in part by private sector donors. Though most graduates are employed by hotels, restaurants, and schools and other nonprofits, DCCCK hires as many program alumni as it can to support its own nonprofit programs and revenue-generating social enterprises. Additionally, their job training has the potential to save the government millions. Statistically, two-thirds of ex-offenders

will go back to prison. By training ex-offenders and giving them jobs, DCCK is cutting prison costs and instead putting an estimated \$2.5 million back into the economy⁹⁹. Lastly, by serving 10,000 healthy meals a day (5,000 of which go to schools), they are encouraging people to be healthier, thus providing public health benefits and helping to cut down on government health costs.

La Cocina > *San Francisco, CA* > www.lacocinasf.org

The mission of La Cocina is to cultivate low-income food entrepreneurs as they formalize and grow their businesses, by providing affordable commercial kitchen space, industry-specific technical assistance, and access to market and capital opportunities.¹⁰⁰ La Cocina provides a platform for motivated entrepreneurs to hone their skills and successfully transition into the highly regulated and competitive food industry. La Cocina is focused primarily on women from communities of color and immigrant communities, to help entrepreneurs become economically self-sufficient and contribute to a vibrant economy doing what they love to do.

La Cocina is a groundbreaking business incubator, the first of its kind in San Francisco, designed to reduce the obstacles that often prevent entrepreneurs from creating successful and sustainable small businesses. By providing shared resources and an array of industry-specific services, business incubators ensure small businesses can succeed. The food industry has a notoriously high cost of entry: the fees for licensed and insured commercial kitchen space, the start-up costs to open a restaurant, and the standards set to compete for shelf space at specialty stores and large retailers. Such restrictive barriers to entry often discourage burgeoning food entrepreneurs from launching a business.¹⁰¹ There are additional barriers for their target clients, including women of color and immigrants, such as not meeting income or credit score qualifications required by other business incubators and investors. La Cocina explicitly supports this underserved consumer base.

La Cocina started with 1 employee and now employs 8 full time staff and 6 part time staff. Since December 2010, La Cocina has provided affordable commercial kitchen space, more than 300 hours of industry-specific technical assistance, and access to market opportunities. They now serve 30 business and 33 program participants. When asked about the multiplier effect of wealth created by their incubator graduates, La Cocina Executive director Caleb Zigas explained:

⁹⁹ Moore, A. (2013). Interview by A. Rosenthal [Personal Interview].

¹⁰⁰ HUFED Year-end Report Sept 2011, Wallace Center

¹⁰¹ About Us, La Cocina Website, <http://www.lacocinasf.org/about-la-cocina/> Accessed 3/1/2013

*We don't use the multiplier effect in our work, because we believe it serves the organization collecting the data more than it does our clientele. So we look at revenues generated by La Cocina businesses, which is currently \$4 million annually. That's the direct economic impact. For instance, if La Cocina generates 60% of its own operating costs, it costs \$700,000 of outside investment to make this program work, if we're showing a return of nearly \$4 million, that's pretty significant; that's like 4x, 5x return, just like direct return.*¹⁰²

Zigas also explains that it doesn't require a lot of employees to be economically successful: "One of our biggest revenue businesses is for instance, Peas of Mind, which is a manufacturing business that does frozen food and she incubates out of La Cocina, but the standard path for businesses of that scale is that she's going to go to a co-packer. So despite the fact that she's doing well over a million dollars in sales, she only has one employee. The businesses that generate the most employees are lifestyle restaurants," he says¹⁰³. In fact, one restaurant in La Cocina's incubator that has comparable sales to Peas of Mind employs 22 people. However, if he had to give an average, "each business generates 2-3 jobs." Caleb contributes much of La Cocina's success to knowing their location and market very well. San Francisco has a significant population of local food consumers, and a significant population of people who want to be food entrepreneurs. While the idea of a food incubator may be sound, La Cocina's exact model might not be replicable if the same factors were not in place. According to Caleb, "a well-run incubator understands the local and regional marketplace and delivers resources to the aspiring entrepreneur to effectively and competently enter that marketplace by saving the entrepreneur capital costs to increase their chance of success and lower their risk of debt, which is significant. Lowering the risk of debt has clear municipal impacts, which is a positive thing, and lowering capital costs increases their chance of success which increases job creation."¹⁰⁴

¹⁰² Interview with Caleb Zigas, Executive Director, La Cocina, Conducted 2/15/2013 by Wallace Center staff

¹⁰³ Ibid.

¹⁰⁴ Ibid.

C. Innovation: Technology and Social Media

Summary of Key Findings and Observations

Technology and social media are increasingly being used by new, start-up companies to advance the local food movement by offering web platforms to connect local and regional food producers with buyers for their products. These companies are free from the restrictions that brick and mortar businesses face (e.g., taking possession of product, food safety and liability concerns, etc.), relying on the web and social media tools to generate interest in local producers, and their software to connect suppliers to buyers.

According to a study by RSF Social Finance, “there has been a burgeoning funder interest in technology-based or web-based businesses working to increase the efficiency of regional food supply chains.”¹⁰⁵ Companies are on average two to five years old, and receive an average of \$1-2 million in private investments. Employees range from small (7-15 employees) to large (50-70 employees) depending on the number of cities that the company serves. Food technology companies are generally based in major metropolitan areas where they draw consumers who are savvy about local food and have access to technology. Most are planning to quickly expand to other cities around the country due to the flexibility of online platforms.

Among the types of food technology companies there are a wide range of services offered. **Food-Hub.org** has organized the different types of technology companies and where they fit in the supply chain in an [online interactive graphic](#). For instance, under their “Farming” category are companies that serve local food producers with specialized software to meet their needs, such as managing CSA operations or tracking harvests. “Aggregating” companies offer software to aggregate local food for food hubs, co-ops, and farmers markets—these packages can help process transactions, coordinate orders, and manage vendors. “Distributing” companies organize the distribution of food. These companies may have trucks and brick/mortar facilities but rely on web platforms for coordination. “Finding” companies are dedicated to providing information so buyers and sellers can find each other, but are not platforms for the exchange of commerce. The largest group of food technology companies—and the area that sees the most innovation and excitement from consumers—is in the “Buying” category. These companies enable the buying of local food by processing transactions and facilitating orders.

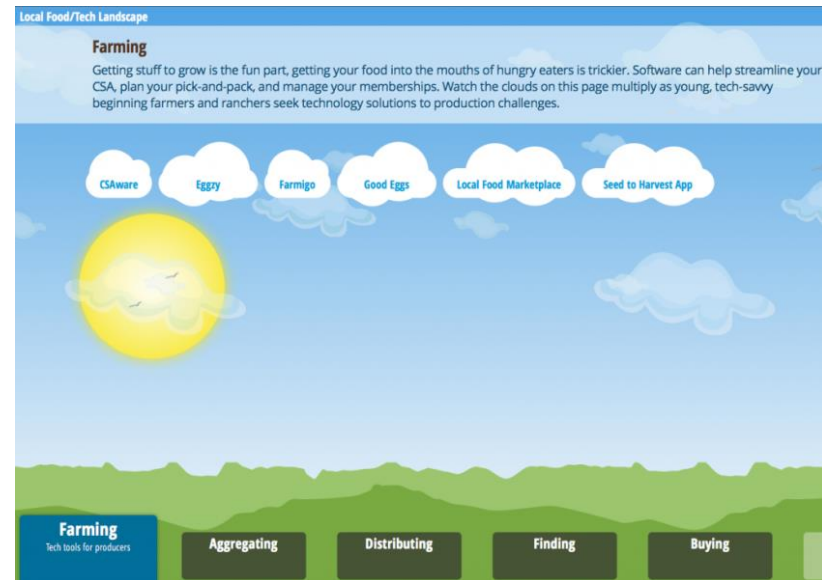
105 Foley, K., Goodman, T. & McElroy, B. (2012). *Bridging the gaps: Funding and social equity across the food system supply chain*. RSF Social Finance.

Among the “Buying” companies, one model that is increasingly common is for companies to coordinate the delivery of local food orders to designated pick up sites, where consumers go to collect their orders. Known by various names (e.g., drop off sites, co-ops, food communities, hub sites), these locations are generally determined by groups of consumers that use the company’s web platform and social media tools, such as Facebook, to find each other. Groups use their group buying power as leverage for lower prices. Farms and producers in turn have larger orders to fill, making it worth their time and expense to make a delivery to a pick up site. Companies benefit from low transaction costs, and consumers benefit from cheaper prices for the products they want.

Observations on the Research/Body of Knowledge

Food technology companies are relatively new in the past few years, and formal studies through peer-reviewed journals have generally not been conducted. Most information is available through news sources, technology forums such as *Food and Tech Connect*, and technology magazines such as *Wired*. Data on return on investment and wider economic impacts are largely not yet collected. Similarly, information on the types of jobs available and wages for workers is not yet collected, and is largely still being formed as companies adapt to changes in the marketplace. However, based on staff profile information and job postings, companies hire a wide range of employees, from drivers and customer service representatives to software developers, engineers, managers, and executives. Many entrepreneurs are former tech workers for companies such as Google who have applied their expertise to a cause they see as socially and economically beneficial for their communities—bringing more health, local and regional food from farms to consumers, and doing so in an open and transparent way using the latest technology platforms available.

Interestingly, although food technology companies are primarily based in large cities, information about how cities can support these companies was lacking in the literature. Given that companies increasingly prefer models with drop off locations for products, cities could offer public spaces such as parks or other public buildings for this purpose, and ensure that regulations are flexible to allow farmers’ trucks to gather in central locations. Companies could be given tax breaks for starting up in a new city—an incentive that would go far as many are looking now at where they will expand.



Food-Hub.org offers a new interactive graphic to organize food technology companies and where they fit in the supply chain. *Source: food-hub.org.*

Other impacts

While formal studies have generally not been done on the impacts of food technology companies on their communities, it is noteworthy that the most popular models bring together consumers to central drop off locations to collect their orders from farmers and producers. It would seem that picking up groceries from a central location at a certain time might be an inconvenience for consumers who are used to the flexibility of grocery stores being open 24 hours. However, the social nature of these gatherings is likely a draw for consumers, many of whom are eager to connect with like-minded people and the farmers who grow their food. While farmers markets are similar social environments for shoppers to congregate around producers, these food drop off sites are different because the shopping has already been done online. Rather than roaming from producer to producer, inspecting products and looking for deals, consumers can pick up a box with their order in it, and either linger to talk to others or leave.

Also, for consumers that prefer the convenience of home delivery the services offered by many food technology companies are very appealing. Companies often coordinate delivery for a small fee, which is a convenience for consumers with busy schedules. While this does not offer a social outlet, per se, it does free up consumers' time that might have been spent driving to a grocery store, shopping, waiting in line to check out, and heading home, engage in other activities such as preparing food and spending time with their families.

CASE STUDIES

Relay Foods > *Charlottesville, Virginia* > www.relayfoods.com

Relay Foods is a leading online grocery startup, headquartered in Charlottesville, VA, and currently serving customers in Charlottesville, VA, Richmond, VA, Williamsburg, VA, the Washington, DC Metro area, Baltimore, MD, and Annapolis, MD. Relay partners with hundreds of local farmers and artisan foodmakers, as well as organic and conventional retailers to deliver high-quality local foods and grocery staples from national brands directly to customers. Relay's ecommerce platform allows consumers to purchase over 20,000 items through user-friendly web and mobile interfaces, which Relay packs into individual orders. The company's technology then routes orders — which may include fresh strawberries from a nearby farm, pasta sauce from Whole Foods, and a nicely paired Merlot from the local wine shop — to conveniently located Relay pickup spots at major employers, schools, gyms, and neighborhoods. As a premium service, Relay also offers convenient next-day home delivery.

Relay Foods is a unique service, combining an online shopping platform featuring local products with distribution to central locations for consumers to pick up. Relay puts local brands front and center, with each producer's offerings complemented by photographs and narratives, appealing to shoppers' interest in having a more authentic connection with the people who grow or produce their food. Where other online grocery businesses (i.e. WebVan and HomeGrocery) have failed — partially due to costs related to delivering groceries to spread-out suburban areas — Relay's drop off sites save the company and customers money on the last mile of distribution. Drop off locations are conveniently located along major thoroughfares and points of interest in cities and surrounding counties.

Relay Foods has raised \$14.25M since 2009 from investors, who include a mix of forward-thinking market, tech, and social impact investors and investment funds. The company's sales have grown triple digits every year. With its rapid growth across the country have come hiring and new jobs. Relay Foods has more than 100 employees spread out across five cities, and is still hiring. They offer competitive wages and benefits for entry-level jobs, many of which appeal to young people, such as drivers, sorters, and delivery jobs, in addition to higher-wage jobs like software engineers. A new version of the Relay website with mobile and tablet versions is currently in development.



Source: Relay Foods

Farmigo > Palo Alto, CA > www.farmigo.com

Farmigo is a California-based Certified B-Corporation that offers two types of very different services: an “online farmers market,” where groups of consumers purchase from local producers and have their orders delivered to drop off points, and an internet-based software system for farmers to manage their CSA subscriptions. The company began developing software in 2009 and has provided services to hundreds of farms across 25 states. This web-based system tracks harvest, packing, and delivery, and all associated financial transactions. More recently, Farmigo launched its online platform, which currently serves customers in San Francisco and New York, and is expanding rapidly to Los Angeles, Seattle, Portland, Denver, Chicago, and Philadelphia.

Similar to **Relay Foods** and **Door to Door Organics** (see [Appendix](#)), Farmigo connects groups of consumers (called “food communities”) with producers, offering delivery points at convenient locations such as a workplace, community center, church, or school. A minimum number of members must join each food community in order for Farmigo to coordinate delivery, offering an incentive for members to recruit others to their community. Group buying allows producers to decrease their price, offering consumers a better deal. Farmigo offers various tools for consumers to recruit others into

their groups using social media such as Twitter, Facebook, and email. Pick up days—when farmers drop off products—are often organized as social events with food and music, creating more of a community atmosphere for group members. Already there are more than 3,000 food communities on Farmigo (with companies such as Google and Twitter among them) and the company aims to expand to tens of thousands of pick up locations across the United States.

Farmigo has drawn a number of private investors including a \$2 million angel investment and \$8 million in Series B investments from Sherbrooke Capital, RSF Social Finance, and Benchmark Capital. The company makes 10% for each transaction that takes place, with farmers receiving roughly 80% of sales (compared to the 9% to 20% they receive through a traditional grocer). While Farmigo is based in California they also have offices in Tel Aviv and New York. Currently, Farmigo has 14 employees and is hiring a wide range of employees from sales associates to managers, marketing professionals, and engineers.



A Farmigo “food community” pick up day is a social event.

Source: fairfieldgreenfoodguide.com

D. Innovation: Farmers Markets

Concept and Definitions

Though farmers markets can vary substantially in ownership, business model, operations, products, or mission, there are two broad categories of markets that are useful for understanding the type and scale of economic impact you might expect.

Vendor/producer markets are typically focused on selling food products (mostly fresh, but often including prepared and value-added products such as jams or juices as well), and often focus on offering locally or regionally produced products. These types of markets frequently have producer-only criteria, such that only the producer (or producer's staff) can sell at the market, thus excluding resellers. In addition to retail or direct to individual sales, they may also offer wholesale arrangements to restaurants or other institutions.

The other broad category of markets might be termed public or mixed-use markets, which in addition to producer-vendors (both retail and wholesale), also offer a variety of food and non-food businesses and vendors, with products such value-added or prepared foods, crafts, etc. That said, these represent broad categories useful for discussion of market economic benefits, but in practice, there is much overlap between these models, and individual markets vary tremendously in scale, products, and economic impact.

Finally, a number of researchers and practitioners, including Farmers Market Coalition, Marketumbrella, and Project for Public Spaces have developed other important market typologies that might be useful in considering how to assess the potential economic impact of markets and market investments. For example, Project for Public Spaces and Marketumbrella suggest that public markets are often organized by a “neutral regime”, such as a government agency, and typically have a public-serving mission or goal (including and going beyond economic development).¹⁰⁶ And Marketumbrella delves even more deeply into market typology for the purposes of economic assessment, to distinguish



Washington, DC's FreshFarm Markets.
Source: Wallace Center

¹⁰⁶ Marketumbrella, as excerpted in: New Mexico Farmers Marketing Association. (2012). 2012 Farmers' market economic impact survey for the Albuquerque area.

between markets in the categories of procedure (for example, management structure), place (size of city and location of market in city), people (target audiences), and product (including producer only or reseller, among others).¹⁰⁷

Summary of Key Findings and Observations

In terms of assessing the economic impact of farmers markets (with a particular focus here on increased economic activity and job creation), researchers and practitioners have long assumed that markets generated benefit not only for those directly involved in the market, but equally important, for the local communities and economies in which they operated. It has only been in the past five to ten years that models for understanding, assessing, and articulating that impact have emerged, first in academic research, and more recently, through more accessible methods utilized by markets themselves.

The body of knowledge that has emerged from these efforts overwhelmingly points to the economic impact that markets provide, not to mention other social benefits such as improved health. Further, this body of knowledge confirms that markets do indeed bring substantial economic benefits to the communities in which they operate, that these benefits vary based on the size and type of the market and the size of the community,¹⁰⁸ and that the success of markets hinges on a complex set of variables such as location in the community, marketing and outreach to cultivate demand, quality of experience, diversity of buy in and support (both financial and social), business model and fee structure, and mission and goals, among others.^{109 110}

Observations on the Research/Body of Knowledge

Though there are variations in terms of the methodology and analysis of assessment tools, most of the tools in use are based on two models that have been used across disciplines and industries to quantify the economic output of a particular activity or set of activities. Most, if not all, of the economic output data presented in the case studies that follow, and in much of the available data on farmers markets' economic output, is based on either the IMPLAN (Impact Analysis for Planning) model or the RIMS II (Regional Input-Output Modeling System) model. Both of these use input-output data from 400+ industries to estimate regional and local economic multipliers; these multipliers communicate the relationship between economic input and economic output.

In-out economic models such as IMPLAN and RIMS II provide consistent, comparable, and predictive data on direct, indirect, and induced economic outcomes, and full-time, part-time, and full-time-equivalency job creation. These models

¹⁰⁷ Marketumbrella, as excerpted in: New Mexico Farmers Marketing Association. (2012). 2012 Farmers' market economic impact survey for the Albuquerque area.

¹⁰⁸ Econsult. (2007). *Estimating the economic impact of public markets*. New York, NY: Project for Public Spaces.

¹⁰⁹ O'Neil, David. (2005). *Ten Qualities of Successful Public Markets*. New York: Project for Public Spaces. <http://www.pps.org/reference/tencharacteristics-2/>

¹¹⁰ Farmers' Markets America. (2008). *Portland farmers markets/Direct-market economic analysis: Characteristics of a successful market*. Portland.

allow planners to make decisions on where to focus resources and investments, based on potential/model-predicted returns, and to compare with projects of similar size/characteristics/multipliers elsewhere. Meta analyses of farmers markets' multipliers by size of market, by size of city, or by other characteristics, provide tools for understanding the potential impact of new markets or investments in existing markets.¹¹¹

Jobs, Labor, Workforce Development

It is worth noting that farmers markets provide a particularly good environment for starting and cultivating small local businesses. This is important because these businesses typically remain place-based, bring and keep jobs in the community, and keep money circulating in the local economy. A 2003 study of eight markets across the country, conducted by Project for Public Spaces, found that 83% of vendors surveyed had used their own funds to start their business, and that 54% had spent \$1000 or less to start their business.¹¹² As the study notes, given this relatively low-capital entry point, these types of businesses are often more accessible for populations who are less likely to start or own businesses, such as immigrants, minorities, and women; this, in turn, can increase job prospects for people from these communities as well.

Farmers markets can also offer opportunities to strengthen or diversify existing businesses. Often farmers who began with selling only produce can increase their product mix and increase sales to an already engaged market, with significant financial benefits. There are a number of case studies documenting the economic value of this process, in the Wallace Center's *Snapshot Series: Transitioning to Value-Added*.¹¹³ Together, these resources suggest an accessible, flexible pathway to local business ownership, which offers the opportunity for growth, diversification, and economic opportunities for historically vulnerable populations.

In terms of the broader job creation implications of markets, little documentation exists. What has been documented is based on the input-output models outlined above, and is summarized briefly here:

*Market Forces: Creating Jobs through Public Investment in Local and Regional Food Systems (2010)*¹¹⁴

- Attempts to link specific dollar investment amounts to specific numbers of jobs created, using investment data from the Farmers Market Promotion Program (FMPP)
- Average investment per market: \$53,247
- Average # jobs created per market: 2.4-5.4

111 Econsult. (2007). *Estimating the economic impact of public markets*. New York, NY: Project for Public Spaces.

112 Project for Public Spaces. (2003). *Public Markets as a Vehicle for Social Integration and Upward Mobility*. New York.

113 Wallace Center. (n.d.). *National Farmers Market Network*.

114 Union of Concerned Scientists.

*Evaluating the Economic Impact of Farmers' Markets Using an Opportunity Cost Framework (2008)*¹¹⁵

- Net impact of farmers markets on West Virginia economy (IMPLAN model): 119 gross jobs (69 full-time equivalent), across 34 markets

*An Evaluation of the Economic Impacts of Oklahoma Farmers Markets (2009)*¹¹⁶

- Net impact of farmers markets on Oklahoma economy (IMPLAN model): 113 gross full-time equivalent jobs (81 direct, 17 indirect, 16 induced), across 21 markets

*Consumers, Vendors, and the Economic Importance of Iowa Farmers' Markets: An Economic Impact Survey Analysis (2005)*¹¹⁷

- Net impact of farmers markets on Iowa economy (IMPLAN model): 470 full-time equivalent jobs created (325 direct, 55 indirect, 90 induced), across all markets statewide (180 markets, 1600 vendors, most per capita)

*Economic Impact of Portland's Farmers Markets (2008)*¹¹⁸

- Net impact of farmers markets on Portland economy (IMPLAN model): 154 full- and part-time jobs created (112.8 direct, 23.1 indirect, 18.1 induced), across 14 markets

Effects on the Economy

The greatest economic impact of farmers markets is typically the ripple effect it triggers in other parts of the economy, particularly focused geographically around the market neighborhood. This is where the input-output models described above become useful; they provide a framework for assessing or predicting direct economic benefit, indirect economic benefit, and induced benefit, which together capture the total economic benefit of market activity that might otherwise be quite difficult to link to markets.

¹¹⁵ Hughes, D. W., Brown, C., Miller, S., & McConnell, T. (2008). Evaluating the economic impact of farmers markets using an opportunity cost framework. *Journal of Agricultural and Applied Economics* 40(1): 253-265.

¹¹⁶ Henneberry, S. R., Whitacre, B., & Agustini, H. N. (2009). An evaluation of the economic impacts of Oklahoma farmers markets. *Journal of Food Distribution Research* 40(3): 64-78

¹¹⁷ Otto, D., & Varner, T. (2005). Consumers, Vendors, and the Economic Importance of Iowa Farmers' Markets: An Economic Impact Survey Analysis. Ames, IA: Leopold Center for Sustainable Agriculture, Iowa State University.

¹¹⁸ Yosick, B.G., & Farmers Market Collaborative. (2008). *Portland farmers markets/Direct-market economic analysis*. Portland, OR: City of Portland Office of Sustainable Development.

A 2007 study by Ecoconsult and Project for Public Spaces¹¹⁹ attempted to simplify the process of estimating market impact by developing a matrix of economic multipliers that other cities or planners could then use to predict potential market impact. By reviewing the impact data for markets that varied by number of vendors, vendor type, and size of city, they were able to establish a set of economic multipliers for each of these scenarios. Their results are summarized in **Table 16** below.

Table 16 - Calculated Vendor Impact Multipliers, by Regional Economy Type

Vendor type	Large city markets	Small city markets	Small town markets
Producers	0.11	1.6	1.13
Non-producers	NA	1.31	NA
Prepared food	1.61	1.65	NA

Source: Ecoconsult, 2007

So for example, per the table above, the calculated multiplier of 1.65 for prepared food vendors in small city markets indicates that for every \$1.00 in total market-related expenditures, there will be \$0.65 in indirect and induced expenditures, resulting in an overall economic impact of \$1.65 in the given region.

Since 2007, Marketumbrella, the nonprofit research arm of the Crescent City Farmers Market in New Orleans, Louisiana, has developed an easy to use tool for measuring the economic impact of farmers markets, based in part on this idea of economic multipliers. The tool, *Sticky Economy Evaluation Device (SEED)*, guides markets in gathering data from customer surveys and vendor receipts, provides an online platform for entering data and applying RIMS II-based multipliers, and then produces an economic impact analysis in report form.¹²⁰ In addition to comprehensive SEED analyses conducted by Marketumbrella in three major U.S. cities (Los Angeles, Baltimore, and Cleveland) in 2012,¹²¹ the SEED methodology has been used by dozens of markets and city-wide market networks around the country to analyze the economic impact of farmers markets; the reports produced as a result of these analyses represent an important and useful body of knowledge for predicting how investments in farmers markets might ultimately grow and strengthen local economies.

119 Ecoconsult. (2007). *Estimating the economic impact of public markets*. New York, NY: Project for Public Spaces.

120 Market Umbrella. Marketumbrella.org.

121 Market Umbrella. (2012). Farmers Markets Contribute Millions to Local, Regional Economies.

While Marketumbrella's comprehensive report on the three-city SEED study is forthcoming as an e-book in 2013, both individual-city reports and three-city overview data is available on the Marketumbrella website;¹²² some of that data is summarized below. Similar, equally extensive, economic impact data now exists for dozens of markets/market networks around the country.

In-depth, joint economic impact analysis of nine markets in three large U.S. cities: Los Angeles, Cleveland, Baltimore.

- Annual Economic Impact on Vendors: \$52,000–\$40,594,000 per market
- Annual Economic Impact on Nearby Businesses: \$19,900–\$15,765,700 per market
- Annual Economic Impact on the Community: \$72,000–\$56,360,000 per market

Finally, research also emphasizes that investments and programs that increase access to and demand for markets will also increase the economic impact of markets. For example, in work on nutrition programs at the market, such as Senior/Farmers Market Nutrition Program (S/FMNP) and the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps), Marketumbrella found that their MarketMatch SNAP Incentive Program invested a total of \$10,000 in grant funding on marketing and outreach, and yielded an increase in SNAP transactions from 332 in 2008 to 729 in 2009, with an increased dollar value of transactions from \$7,574 in 2008 to \$39,664 in 2011. This represented a total dollar increase of 424% from that initial \$10,000 investment.¹²³

Figure 4 - Marketumbrella's SEED

Source: Marketumbrella

¹²² Market Umbrella. (2012). Farmers Markets Contribute Millions to Local, Regional Economies.

¹²³ Marketumbrella. (2012). MarketMatch SNAP Incentive Program report.

Public Markets/Mixed-use Development

Finally, it is worth briefly emphasizing an important market typology, public or mixed use markets, which are frequently—though not always—larger, publically-run or publically-funded endeavors. Well-known examples include the Pike Place Market in Seattle and Detroit’s Eastern Market. More recently, established examples have taken advantage of unique financing options, opportunities to serve and build on demand from immigrant and international populations with niche food needs, and the trend toward urban development integrating food, retail, and housing. A few of these models are described briefly below:

Pagoda Village – 60,000 sq ft (Everett, Washington)¹²⁴

- First in a series of mixed-use developments throughout Washington State, designed to create communities rooted in green living and local agriculture, focused on supporting local economy
- Year-round indoor farmers market, office space, assisted living, upscale apartments, hotels, commercial kitchen, seeking LEED Silver certification
- Three major partners/tenants: Hilton, Senior Services of Snohomish County, Snohomish County Growers Alliance
- Projected to provide about 1,000 jobs
- Lead by Path America, “a U.S. Immigration Approved Regional Center that operates regional centers in the Pacific Northwest, including one in Snohomish County and one in King County that strives to support non U.S. Citizens who wish to immigrate to the United States through the EB-5 immigrant investment program.”
- Program provides a pathway to citizenship for foreigners who invest in low-income/impoverished/economic development zones in the U.S. and create a minimum number of jobs

¹²⁴ PATH America. (2013). Current Projects.

Midtown Global Market (and Midtown Exchange) – 75,000 sq. ft. (Minneapolis, Minnesota)^{125 126}

- Launched in 2006 by Neighborhood Development Center, on site of long vacant Sears building in an ethnically and internationally diverse residential/business neighborhood
- Mix of fresh and prepared foods—focus is on international/ethnic foods
- Provides technical assistance and business support to first time and/or immigrant food business owners, with the goal of community socioeconomic development
- Revenues \$65k/month, expenses \$85k/month
- Part of larger Midtown Exchange Mixed Use/Historic Renovation (Sears Building)
- Benefit from tax credits: historic preservation (\$15 mil), new markets (\$17mil), low income housing (unknown) – total financing: \$180 mil



Midtown Global Market combines prepared food businesses, fresh food and groceries, plus crafts, music, art. *Source: Midtown Global Market, Project for Public Spaces*

¹²⁵ Midtown Global Market. (2013). Midtown Global Market Homepage.

¹²⁶ Erickson, J. M. (2011). Midtown exchange.

E. Innovation: Farm to Institution Programs

Concepts and Definitions

Though farm to school (F2S) is the most commonly known of these programs, efforts to connect locally and regionally sourced food and food products to institutions have diversified to hospitals, nursing homes, private businesses, and one-off events, among others. Different types of institutions face different pathways and challenges to regional food procurement, but there are a few overarching themes that emerge from the literature and stories of farm to institution work.

There are two primary ways institutions get food from the farm—working directly with one or more producers, working with a foodservice business that handles regional procurement (e.g., a food hub), and in some cases, a combination of the two. Balancing multiple grower relationships (with the attendant supply and transportation logistics) can be demanding, and indeed, this has emerged as the most challenging area for efforts nationwide. In the face of this challenge, intermediaries have evolved to support both the business and logistical aspects of regional food procurement. Within this field, there are also two primary players: regionally based, smaller, alternative food vendors and larger, national/international, vendors, who often work in both regional and traditional food procurement¹²⁷. Some research suggests that regionally based organizations, in addition to retaining more benefit in regional economies, may also be more likely to share customers' perspectives and values in terms of approaches to F2I work.¹²⁸ Regardless, institutions identify similar challenges in regional food procurement: meeting needs and expectations around quality, quantity, and price of regionally produced food.¹²⁹

Summary of Key Findings and Observations

Farm to institution operations have a range of motivations depending on context. For example, Kaiser Permanente, a national health care corporation that is working to increase its sourcing of sustainably and regionally sourced food, cites health concerns as its major focus.¹³⁰ And many school districts focus on increasing consumption of healthy food, but also want to integrate nutrition into their curricula, cultivate a sense of local identity and pride in students, and support their local economies.¹³¹ However, it may be taken for granted that once increased sourcing is in place, the economic benefits will follow; this, along with the difficulty of measuring these benefits, means that analyses of how to structure operations with maximization of economic development and job creation in mind, has not been sufficiently explored.

127 Izumi, B. T., Wright, D. W., & Hamm, M. W. (2010). Farm to school programs: exploring the role of regionally-based food distributors in alternative agrifood networks. *Agriculture and Human Values*, 27(3), 335-350.

128 Ibid.

129 Berkenkamp, J. (2006). *Making the farm / school connection: Opportunities and barriers to greater use of locally grown produce in public schools*. University of Minnesota.

130 Kaiser Permanente. (2012). Supporting individual and environmental health through sustainable food procurement. Kaiser Permanente Policy Story, V1, No. 7.

131 USDA. (2011). *2010 Farm to School team summary report*. Washington, DC.

This might be seen as an opportunity, where additional attention to the potential economic and job creation impact of these programs, already gaining in popularity, uptake, and efficiency, might yield untapped benefits. For example, the USDA’s 2010 Farm to School Team Summary Report,¹³² notes that those involved in current F2S efforts face significant supply chain and logistics challenges; public sector investment might best be focused on understanding how to address those bottlenecks with an eye toward job creation strategies, leveraging an opportunity to spur economic activity in an industry with proven demand and momentum. Other challenges noted in the report¹³³ include lack of small processing or on-site processing facilities, storage facilities, and adequate (trained) staff to manage new procurement and processing demands, and represent potential levers for investment to unlock increased benefits.

What follows is a review, in terms of both trends and case studies, of existing knowledge around the economic benefits of F2I efforts in the U.S. and Canada. In particular, data presented highlights efforts to explicitly cultivate and calculate economic benefit (and to a lesser extent, job creation), providing an opportunity to understand how others have approached these goals.

CASE STUDIES

Farm to School Perspective > *Central Minnesota and Portland, Oregon*

A 2010 study from the University of Minnesota Extension Center for Community Vitality and the University of Minnesota Department of Applied Economics sought to answer the question, “What is the potential economic impact of farm-to-school programs in Central Minnesota?” Their research examines a variety of pricing and sourcing scenarios to understand which models yield the highest absolute economic benefit, as well as the greatest “ripple effects” in the regional economy.¹³⁴ The research first worked with producers to establish what foods were available, and at what volume and price, and then worked with foodservice directors to establish what they could use, and at what volume and price. Working from this data, researchers outlined three possible sourcing scenarios: one monthly regionally-sourced meal, regional sourcing of all available foods not requiring processing, and regional sourcing of all available foods. They also established three pricing

132 Kaiser Permanente. (2012). Supporting individual and environmental health through sustainable food procurement. Kaiser Permanente Policy Story, V1, No. 7.

133 USDA. (2011). *2010 Farm to School team summary report*. Washington, DC.

134 Tuck, B., Haynes, M., King, R. & Pesch, R. (2010). *The economic impact of farm-to-school lunch programs: A Central Minnesota example*. St. Paul, MN: University of Minnesota Extension.

scenarios: a farm-set price (price comparable to what farms already received), a school-set price (price comparable to what schools already paid), and an intermediate price between the two.¹³⁵

Using IMPLAN, researchers analyzed potential economic benefit across the three price and three sourcing scenarios, calculating direct, indirect, induced, and total effects. Ultimately, they found that across all three sourcing scenarios the farm-set price yielded the greatest total economic benefit, but that the school price yielded the most consistently high ripple effects, because under the farm-set price scenario, households ultimately covered the increased school lunch costs (whether directly or through taxes/subsidies).¹³⁶ While the various combinations of sourcing and pricing models yielding the most economic benefit will vary by context, what is important to take from this discussion is an approach to understanding, predicting, and assessing approaches to regional food procurement in ways that maximize investment. In addition, it offers an opportunity to reflect on what aspects of the procurement process are important to consider as part of an economic development strategy.

Similarly, a recent report from Ecotrust traces the economic impact of adopting regional food sourcing, from the particularly useful perspective of a specific financial investment: .07 cents per school lunch.¹³⁷ Their research poses the question, “What if schools had an additional \$.07 per meal to spend on buying local food for the lunch line?”, and uses the basic IMPLAN economic in-out model to understand the potential social and economic investments of such an investment. Covering two Oregon school districts with a total of 91 schools and 22,000 lunches served daily, the Ecotrust report tracks the impact of a \$160,750.02 grant from Kaiser Permanente, recording types of foods purchased, procurement methods, and the benefits that resulted. For example, while one of the districts worked primarily through direct relationships with farmers, the other district worked in part with traditional distributors to bring in regional foods, offering two pathways of impact.¹³⁸

Overall, the initial investment of \$160,750.02 in grant funding yielded \$461,992.10 in local food purchasing, money that stayed in the local economy.¹³⁹ Using the IMPLAN model multiplier of 1.86, calculated for their particular location and context, they estimate that their spending triggered a local economic ripple effect of \$0.86 for every dollar spent. So the \$461, 992.10 in local food purchasing ultimately yielded a direct economic benefit of \$1,168,063, and using the IMPLAN

¹³⁵ Tuck, B., Haynes, M., King, R. & Pesch, R. (2010). *The economic impact of farm-to-school lunch programs: A Central Minnesota example*. St. Paul, MN: University of Minnesota Extension.

¹³⁶ Ibid.

¹³⁷ Kane, D. et al. (2010). *The impact of seven cents: Examining the effects of a \$.07 per meal investment on local economic development, lunch participation rates, and student preferences for fruits & vegetables in two Oregon school districts*. Ecotrust.

¹³⁸ Ibid.

¹³⁹ Ibid.

multiplier of 1.86, yielded a total economic benefit of \$2,175,458.¹⁴⁰ And in terms of job creation, the IMPLAN model revealed a multiplier of 2.43; while 7 jobs were directly created, an additional 10 jobs were created as a “ripple effect” elsewhere in the economy, for a total of 17 jobs.¹⁴¹ Anecdotally, one of the program’s foodservice providers, Portland-based Truitt Brothers, noted that, “The purchase of our products by Portland Public Schools and Gervais led directly to meaningful incremental tonnage for growers and meaningful additional employment in our operations,”¹⁴² reinforcing the real job creation impact that transitions to local sourcing can bring to local economies.

Growers’ Perspective > *Minnesota and Wisconsin*

Much of what we know about what works and what’s beneficial in farm to institution efforts is from the perspective of the institutions themselves. A 2012 study from the Institute for Agriculture and Trade Policy attempts to articulate the benefits and barriers growers face as they negotiate new institutional markets and partnerships; the study is based on a survey of 101 growers primarily in Minnesota and Wisconsin.¹⁴³ Reviewing this research provides an opportunity to understand what types of investment and assistance for growers might support increased regional purchasing, and ultimately, economic benefit. Much of what they highlight echoes institutional perspectives. While 66% of those who’ve sold to schools in the past report receiving prices similar to their other buyers, 35% of all respondents (both those who have sold to schools and those who have not) cite prices as a barrier, the third most frequently cited.¹⁴⁴ And issues of coordinating time and volume make up the other four of the top five barriers. This brings to mind the power of just a \$0.07 investment per meal in the Ecotrust case study, and the economic benefits such an investment might reap.¹⁴⁵ But it must also be balanced by the sourcing and pricing analyses outlined in the University of Minnesota data presented above, suggesting the possibility of a trade-off between total economic benefit and the ripple effect throughout the economy.¹⁴⁶

¹⁴⁰ Ibid.

¹⁴¹ Ibid.

¹⁴² Ibid.

¹⁴³ Berkenkamp, J. (2012). Grower Perspectives on Farm to School: A Survey of Interested Farmers, Ranchers and Other Producers. Institute for Agriculture and Trade Policy. http://www.iatp.org/files/2012_03_16_F2S_ProducerSurvey.pdf

¹⁴⁴ Ibid.

¹⁴⁵ Kane, D. et al. (2010). The impact of seven cents: Examining the Effects of a \$.07 per Meal Investment on Local Economic Development, Lunch Participation Rates, and Student Preferences for Fruits & Vegetables in Two Oregon School Districts. Ecotrust.

¹⁴⁶ Tuck, B., Haynes, M., King, R., & Pesch, R. (2010). The Economic Impact of Farm-to-School Lunch Programs: A Central Minnesota Example. University of Minnesota Extension. <http://www.extension.umn.edu/projects/community/EconomicImpact/components/economic-impact-of-farm-to-school-programs-report.pdf>

On the whole, growers expressed overwhelming interest in selling to schools and institutions, but needed more stable, consistent, committed partnerships.¹⁴⁷ Qualitative data gathered as part of the survey suggested that working through distributors helped smooth fluctuations in demand, making it a preferable relationship in some cases. This signals an important place for investment in services or processes that might help spur increased regional sales. Consistent with this was the data noting that 59% of growers would like a commitment early in the year, or the season before, for a particular order, or for a minimum purchase amount.¹⁴⁸

Farm to Hospital Perspective > *Kaiser Permanente* > *Oakland, California* > www.kpihp.org

Kaiser Permanente, an Oakland-based health care provider operating in eight states, with annual revenues of about \$48 billion per year,¹⁴⁹ made a commitment in 2010 to move from 7% to 15% sustainable food sourcing within three years—a goal they ultimately achieved in about ten months.¹⁵⁰ As of 2011, about 50% of fresh produce purchases—190 tons—meet the sustainable procurement criteria they established, which include the purchase of foods from within 250 miles of its final destination.¹⁵¹ Though health outcomes are naturally among their highest priorities in setting sustainable procurement practices, keeping local dollars local is also an explicit goal, reiterated by their chief executive officer: “Local purchases give us great food, and local purchases help keep the money that our members pay us in the local communities where our members live.”¹⁵²

While their documentation does not provide direct numbers on economic benefit or job creation, they note that the health care industry as a whole spends up to \$12 billion dollars per year on food alone,¹⁵³ just a fraction of which, if spent regionally, could have the multiplier or ripple effects of the cases described above. In considering how investment might work to unlock the economic benefits of increased local spending by health care providers, it’s useful to understand what Kaiser Permanente sees as its barriers to local purchasing. And in fact, they are consistent with those expressed throughout

147 Berkenkamp, J. (2012). *Grower perspectives on farm to school: A survey of interested farmers, ranchers and other producers*. Institute for Agriculture and Trade Policy.

148 Ibid.

149 Kaiser Permanente. (2013). Fast facts about Kaiser Permanente.

150 Kaiser Permanente. (2012). Kaiser Permanente Policy Story, V1, No. 7: Supporting Individual and Environmental Health Through Sustainable Food Procurement.

151 Ibid.

152 Kaiser Permanente. (2012). Sustainable & healthy food procurement in Kaiser Permanente: A case study.

153 Kaiser Permanente. (2012). Supporting individual and environmental health through sustainable food procurement. Kaiser Permanente Policy Story, V1, No. 7.

the literature, namely sufficient demand, consistent quality, competitive price, and need for streamlined and efficient logistics.¹⁵⁴

Foodservice Perspective › *Revolution Foods* › *Oakland, California* › www.revfoods.com

Revolution Foods began in 2006 as a way to bring healthy meals into school cafeterias. Based in Oakland, their mission is to produce and distribute unprocessed, balanced meals to students across the United States. Revolution Foods' meals include only natural, whole ingredients and are free of high fructose corn syrup, artificial colors, flavors, and preservatives. Revolution Foods believes that putting fresh food back into schools will improve children's academic, social, and emotional success. They are dedicated to producing healthy meals that will nourish children, ultimately improving their brain functioning, and helping to lower child obesity rates. Revolution Foods has expanded dramatically since its start nearly eight years ago, and now provides about 200,000 meals a day (or a million meals a week) to schools in ten states and Washington, D.C.

Revolution Foods operates mostly in low-income urban areas. This is partially due to the social mission of the organization—to provide healthy food to children who otherwise would not have access to it—but it is also a wise financial strategy: operating in areas with high population density means that they will have a higher demand for their product, and can spread costs over a larger volume of product. What makes Revolution Foods work is their commitment to a sustainable and profitable financial model. It has enabled them to uncover what is working or not working for the business. For example, when Revolution Foods examined the profitability of marketing to more affluent niche markets versus mass marketing to limited resource schools, it discovered that the schools market was the wiser choice financially, due to economies of scale arising from the larger volumes purchased. In their business model, they found it was easier to make and deliver the product in centralized culinary centers, since many schools don't have the equipment to handle fresh foods. This means that when they set up a new regional location, they often have to find a facility to prepare their meals. They prefer to renovate an existing facility, such as an old airline catering facility, but they have also built out empty warehouses.

Co-founders Kirsten Tobey and Kristin Groos Richmond, both armed with advanced business degrees, intentionally started the venture as a for-profit enterprise, relying on venture capital to start their company. In very real and practical terms, their choice of a for-profit works, because economic sustainability of a social enterprise is crucial to making true and lasting social change. Knowing how to track metrics and make business decisions based on these metrics is vital to business

154 Kaiser Permanente. (2012). Supporting individual and environmental health through sustainable food procurement. Kaiser Permanente Policy Story, V1, No. 7.

success. Add to this market research, identifying and addressing gaps, and constant and continuous improvement, and a business is on the path to economic sustainability.

Revolution Foods is a growing source of employment, with just over 1,000 employees across ten states. Because they operate primarily in underserved areas, they are able to employ workers who might otherwise be without a job. Revolution Foods also hires workers who are developmentally impaired or hearing impaired, providing employment to individuals who might otherwise not easily find work. They strive to create a variety of different jobs so that they can employ a variety of different kinds of workers. Revolution Foods has also purposefully created a lot of upward mobility in their organization so workers frequently have the option to move up. All employees earn above minimum wage and full-time workers receive full health benefits, and access to sick leave. Thanks to its success in job creation and training to previously underserved and underemployed job seekers, Revolution Foods was able to access one more avenue of funding, an economic development loan for workforce development. According to Chief Impact Officer, Kirsten Tobey:

The City of Oakland gave us some economic development low interest loans and grants to build out our culinary center here, [partly] because they were excited about us bringing healthy food to kids throughout the Bay Area in schools, but they were most excited about the job creation in a low-income area of Oakland. And so the places where we've built our culinary centers, in the different places around the country, have been in predominantly low-income areas where there is a lot of need for job creation, and so it's been a really exciting part of what we've done...We've grown the impact both in the schools but also we've seen the impact in our teams and our communities and our employees' families as well.¹⁵⁵

Being a needs-based, demand-driven company, Revolution Foods heeded the call to replicate its model in other cities showing interest. With that replication comes job growth and career advancement. New jobs are created at the new location, and job growth or advancement is available for the existing employees needed to provide training to replicate the model in the new location and to train the next team of workers. When opening up its Houston culinary center, Kirsten Tobey explained, “We brought in a number of people from Southern California who helped us build and grow the Los Angeles market. [We brought them] to Houston for a couple of months to train their counterparts and help grow that market. It was an incredible development opportunity for the folks in L.A. who had worked really hard and built their own skills, who then had the chance to train the next team in Houston. So there are a lot of internal growth opportunities when you're growing as quickly as we are.”¹⁵⁶

¹⁵⁵ Interview with Kirsten Tobey, Executive Director, conducted 3/21/13 by Wallace Center Staff

¹⁵⁶ Ibid.

In 2012, Revolution Foods was selected for The World's 50 Most Innovative Companies, ranking #5 on the list, "for boosting the health profile and quality of school lunches."¹⁵⁷ And for the past two years, the company's commitment garnered them the #2 spot in the Inner City 100 awards from the Initiative for a Competitive Inner City, founded by Michael Porter, which recognizes companies that are growing and creating jobs in America's inner cities.¹⁵⁸

So although Revolution Foods has not yet reached profitability, they are well-positioned to do so, with a strong, financially sustainable model. This, combined with their commitment to providing healthy food to children and high-quality jobs to communities, makes them a national trendsetter for food access innovation.

157 The world's 50 most innovative companies. (2012). Fast Company Magazine.

158 Inner City 100 Companies went "ALL IN" at ICA Awards Dinner, Initiative for a Competitive Inner City (ICIC).

F. Innovation: Mobile Markets

Concept and Definitions

There are a wide range of mobile market types, distribution modes, logistics processes and consumer types, and just as many ways to define “mobile” and “market.” For the purpose of this study, we were intentionally broad in our approach. We include models that might have otherwise been overlooked or which may not be focused on local food or regional supply chains, but otherwise represent an innovation that might work well for local food.

- Full service mobile grocery or limited product mobile grocery
- Mobile delivery of pre-ordered produce (CSA, boxes, online orders)
- Mobile markets tied to a brick and mortar operation (e.g., Pea Pod grocery delivery which partners with local supermarkets—in the Washington, DC Metro area, Pea Pod is the delivery service for the Giant Supermarket chain). Strictly speaking, even a restaurant delivery service (e.g., pizza) allows the bricks and mortar operation to expand its market channels, offer a value-added product or service, and in some instances charge a price premium or fee for this service.
- Shopping and delivery services, i.e. people who make their living as professional “shoppers”
- Formats can be quite creative, and with people doing more with less, or garnering innovative support such as city bus donations, it is a win-win for both city and business. Examples include:
 - Mobile cart, stationary cart, roaming truck ¹⁵⁹
 - Renovated postal truck
 - Retrofitted commissary truck
 - Retrofitted city bus (donated)
 - Other formats: e.g., push cart, bicycle (with or without cooler, 2 or 3 wheels), boat

Summary of Key Findings and Observations

In the last 50 years, with the evolution of the food system and mass marketing, food becoming more accessible and affordable, and the government’s push to formalize food businesses for food safety and for the public good, the barriers have become formidable for the average mobile vendor to enter or stay in business. In the last decade, however, there has

¹⁵⁹ Hynes, R. (2011). *Healthy cart options scan, Get Healthy Philly/Healthy Cart Program*. Food Fit Philly.

been a resurgence of mobile markets that coincides with the American consumer's demand for and willingness to pay more for convenience; the growing interest in local fresh food; and attention on America's "food deserts" and obesity epidemic. With all of this, mobile markets are once again earning their place at the marketing table. From the ***People's Grocery*** in Oakland, CA to NYC Green Carts in New York City, NY, mobile markets that have been operating on the fringe are now becoming more mainstream and for this reason, warrant further attention and research as a viable model that can address a city's need to design economic development innovations but also address social and societal problems, such as health and inequitable access to healthy food.

Based on this and other research conducted by Wallace Center, we see the following trends, untapped opportunities, or areas for further research and exploration:

- ***Cashing in on convenience:*** Regardless of income and education, convenience is trending, and businesses that disregard the urgency of America's desire for convenience and saving time is missing out. According to Supermarket News, "Convenience is the fastest growing sector of retailing around the world... [and] busy shoppers are no longer just following a traditional once-per-week shopping pattern but are 'less planned' in their shopping."¹⁶⁰
- ***Plugging gaps in healthy food access:*** One of the major forces at play in food deserts is the lack of access to healthy food, be it through supermarkets, convenience stores, or corner stores. The stores either do not exist, or it costs too much to reach them (transit, fuel, disability, or age). A mobile market can address these issues, with good planning and consumer research.
- ***Diversified marketing/adding value:*** There are existing grocers and food retailers who rely solely on their brick and mortar operation, and either have not considered mobile marketing or see the barriers as too restrictive. Adding this additional distribution mechanism to one's business could be a value-add for the business, and either garner new customers or increase in existing consumer sales.
- ***Leveraging what exists:*** In a world of limited resources and budget cuts, it helps to explore what is already out there, and identify creative ways to leverage or "piggy back" off of that existing infrastructure or process. These could potentially be untapped opportunities that warrant further research: leverage existing distribution channels such as public transit (deliver when not in use), or senior and church shuttles that commonly pick up seniors and disabled curbside and drive them to senior centers and church community centers.
- ***Think one stop shop:*** One of the lessons learned through Wallace Center's Healthy Urban Food Enterprise Development Center and other programs is to meet people where they are, and the best way to do this is to catch people where they already are shopping or active. An example is a mobile market setting up at a Metro/subway

¹⁶⁰ Garry, M. (2012). Pick-up moves. *SN: Supermarket News*, 60(46), 12.

station or at a church or other places where people congregate. Some of the most successful mobile vendors market near corporate or college campuses, near offices, or near schools, and may also provide catering for events such as banquets and weddings.

Observations on the Research/Body of Knowledge

In spite of much anecdotal evidence of successful mobile markets, there is a lack of substantive, quantifiable data to prove their viability. To fill this gap in literature, we expanded our definition of “mobile market” to include everything from mobile full service grocery store on wheels, to the smallest produce or food cart. We include metrics where they can be found, across cities and models, which it is hoped will collectively paint an overall picture of strengths weaknesses opportunities and threats of this particular business model. A future research project might be to explore in depth each of the dozens of models we have found, and then aggregate the results, filling gaps with primary research and interviews.

Risk, Barriers, Constraints

In the past, and in many countries of the world today, mobile markets were/are operating in an informal economy, without food safety requirements, and “in good faith” with the vendor’s reputation serving as his or her certification. In spite of the vendors who operate illegally, legitimate mobile markets are requiring mobile vendors to consider the myriad laws and requirements related to permits, licenses, food safety standards, and zoning.

The biggest barrier appears to relate to zoning and permits around where one can and cannot market. According to a research brief on zoning and healthy food, zoning means “allowing or prohibiting different types of food outlets, such as supermarkets or fast food restaurants in a given community... local governments can use their zoning authority to help encourage the development of outlets that sell nutritious affordable foods within a community.”¹⁶¹ The research also shows that of 175 communities surveyed nationwide, only 55% of them permitted mobile vendors, while 95% of communities allow fast food restaurants. Local government can play a vital role in development of this innovation by actively engaging to include mobile vending/markets in what is permitted. This takes the pressure off of the business owner, who might otherwise give up, or prevent new entrants to this market, based solely on the onerous process of applying for zoning permit(s).

Food safety certification is another barrier, and the level and type of certification varies based on what products and in what format they are sold. For example, for vending of cut fruit, the vendor is required to have ServSafe certification, and be able to source from a certified commissary or kitchen where there are equally stringent food safety standards related to food storage, washing, and processing.¹⁶² Whether it’s raw fruits or prepared hot meals, food safety research must be done first.

¹⁶¹ Bridging the Gap, Research Informing Policies & Practices for Healthy Youth, 2012.

¹⁶² Hynes, R. (2011). *Healthy cart options scan, Get Healthy Philly/Healthy Cart Program*. Food Fit Philly.

Mobile payment is another consideration that can be addressed at relatively low cost. We are living in a cashless society, where cash-only can cost customers, or the minimum purchase requirements for electronic payment can seem petty to customers. Mobile payment options are growing, and can be as simple as a card reader that plugs into a smartphone, and automatically generates a receipt and charges your account. Square Apps is a popular service, with PayPal Here recently marketing a similar service.

In the case of mobile payment and Point of Sale terminals, it would be a mistake to overlook the economic potential of accepting SNAP/EBT. According to USDA, “Adopting EBT technology to accept SNAP benefits can help markets tap into a larger customer base by providing an easy and convenient way for consumers to redeem SNAP benefits on eligible food items.”¹⁶³ For vendors selling eligible food items, the potential for increased sales from SNAP redemptions can be substantial. Between fiscal year 2008 and 2009, for example, the total value of SNAP redemptions at farmers markets and farm stands nearly doubled, from over \$2 million to over \$4 million.¹⁶⁴

Communication, consistency, and reliability are keys to success. It is important to establish calendars that are easy to understand and/or remember, and are reliable and dependably followed. Information such as drop off days/times and locations or lists of products available must be communicated and available to consumers and not subject to constant change. If this is impossible or extremely difficult, there are alternative ways of communicating. Social media such as Twitter has been a great way for mobile vendors to advertise their current “real time” location and product offering. In the case of lower income consumers who may not have access to social media, other options need to be explored.

Business Structure and Ownership Model

Every community and every market is different, and a business and marketing model must adapt to these differences. Simply plugging the holes in infrastructure or bringing food where there was none prior can only work “if accompanied with affordable prices, education, promotion or community collaboration.”¹⁶⁵

There seem to be two mobile market models: 1) independently owned, sole proprietor, marketing direct-to-consumer or 2) mobile markets attached to another business model (e.g., supermarket, corner store, restaurant, or foodservice company). Support for mobile markets depends on the city and its zoning laws and processes for innovations that do not fit into one box or type of food outlet. Most of the mobile markets we surveyed were in large part subsidized through public and private

¹⁶³ Supplemental Nutrition Assistance Program (SNAP) at Farmers Markets Handbook, USDA Agricultural Marketing Service, USDA Food and Nutrition Service, and Project for Public Spaces, Inc., June 2010

¹⁶⁴ Ibid.

¹⁶⁵ Sifferlin, Alexandra, Can “Pop Up” Grocery Stores Solve the Problem of Food Deserts?, Time Magazine, July 24, 2012

funds, including local and federal funds or donations (donated equipment), and public and private grants. Wallace Center has provided grants to three mobile markets, through its HUFED program, described in the case studies.

Jobs, Labor, Workforce Development

There was limited to no data on jobs related to mobile markets. An area for exploration might be a food business incubator to assist food vendors, from mobile farmers market/grocery, to mobile vendors of prepared meals. As mentioned in the incubator section, there may be opportunities for providing workforce development services to certain segments that may work in more ways than one by creating jobs but also enabling formerly incarcerated or at risk individuals to find meaningful work. **La Cocina**, for example, is incubating healthy street carts that serve prepared meals in underserved Bay Area neighborhoods. They currently serve 33 businesses, with a staff of 8 employees providing technical assistance and other support to these businesses that operate out of La Cocina's commercial kitchen. Each of these businesses is then creating 1-3 jobs, which—all combined—is roughly 100 new jobs. See the La Cocina case study for more details (in the [Incubator](#) section of this report).

Effects on the Economy and Local Food System

Mobile markets, in their current shape and form, are still a relatively new concept. Time will tell if they can be lucrative or not, and how and when subsidization is required for startup, growth or expansion. Which model yields the highest return has yet to be determined, and whether it is a standalone mobile market or one that is an extension of another food business may depend on geographic and demographic information unique to the target market or region. There is preliminary evidence that mobile markets address many barriers to entry including: financial, infrastructure, and others for those attempting to market healthy food in low-income and underserved neighborhoods. What represents barriers to entry for large supermarkets creates opportunities for “smaller stores with poor selections and high prices [to] serve these areas.”¹⁶⁶ Mobile markets can counter the effects of this reality.

Other trends worth monitoring include mobile catering, which is an extension of a bricks and mortar restaurant that uses a traditional food truck to prepare meals from the truck on site at the event rather than having to prepare everything ahead of time. This means hotter, fresher food, and in some instances access to a previously untapped market, such as venues without a kitchen or electricity, e.g. a wedding or family reunion held in a state park. Another mobile food trend includes “food bikes,” yet another extension of bricks and mortar that delivers meals and food products in densely populated urban centers with heavy vehicular traffic. “A major advantage of the food bike trend is its location flexibility. While the operation of food trucks appears highly mobile, food bikes are able to come and go from events and farmers markets more freely –

¹⁶⁶ Widener, M., Metcalf, S., & Bar-Yam, Y. (2012). Developing a mobile produce distribution system for low-income urban residents in food deserts. *Journal of Urban Health*, 89(5), 733.

where these businesses can piggyback on existing permits.”¹⁶⁷ And in densely populated urban areas with traffic, a food bike can navigate traffic and reduce delivery time, often arriving before a car could, which is a win-win for both food business and consumer.

Given that mobile markets in all shapes and forms are still trending the metrics available are anecdotal and not easily aggregated. To help round out the data on mobile markets, we include research and learning from Wallace Center projects and select case studies, in the following pages and in the [Appendix](#).

Other impacts

All of the data leads one to speculate on the importance and potential of mobile markets, not only to affluent consumers, who are increasingly time pressed and looking for convenience, but also and perhaps more importantly to serve those living in “food deserts,” which currently account for 23 million Americans nationwide, living more than one mile from a grocery store. With more than 35% of the U.S. population suffering from obesity and its effects such as heart disease, diabetes, and hypertension, the financial benefits of improved diet and health cannot be overstated, and any reduction in diet related disease would reduce the burden on cities and taxpayers. According to the Centers for Disease Control and Prevention (CDC), “medical costs associated with obesity were estimated at \$147 billion [in 2008]; the medical costs for people who are obese were \$1,429 higher than those of normal weight.”

There is data on social impacts that can then be translated into economic terms, and when combined with economic impacts make an even stronger and conclusive case for taking the innovation seriously. Data on social impacts can be monetized into terms that affect the city and its citizens. For example, obesity is a health and social outcome and understood to be a preventable disease, whose effects can be quantified into real terms that affect the bottom line of any city or taxpayer.

¹⁶⁷ The new (and hot) food bike trend, Fast Food Truck at Concession Nation.

Table 17 - The 10 Most Obese Cities and Associated Healthcare Costs*The 10 Most Obese U.S. Cities and Associated 2009 Healthcare Costs*

In 2009, 21 U.S. metro areas had obesity rates of 31% or higher, based on their residents' self-reported height and weight. In the 10 most obese U.S. cities, where at least one-third of residents reported a body mass index (BMI) higher than 30, the annual obesity cost per 100,000 residents was about \$50 million. This is roughly twice the cost per 100,000 residents in the least obese cities.

Metropolitan Statistical Area	Population estimate 2009	% Obese	Annual obesity cost per 100,000 residents	Total annual obesity cost
Montgomery, AL	366,401	34.6	\$49,443,400	\$181,161,112
Stockton, CA	674,860	34.6	\$49,443,400	\$333,673,729
Visalia-Porterville, CA	429,668	34.1	\$48,728,900	\$209,372,490
York-Hanover, PA	428,937	34.0	\$48,586,000	\$208,403,331
Flint, MI	424,043	33.9	\$48,443,100	\$205,419,575
McAllen-Edinburg-Mission, TX	741,152	33.7	\$48,157,300	\$356,918,792
Bakersfield, CA	807,407	33.6	\$48,014,400	\$387,671,627
Lynchburg, VA	247,447	33.0	\$47,157,000	\$116,688,582
Huntington-Ashland, WV-KY-OH	285,624	33.0	\$47,157,000	\$134,691,710
Kingsport-Bristol-Bristol, TN-VA	305,629	32.9	\$47,014,100	\$143,688,724

Source: Gallup-Healthways Well-Being Index

CASE STUDIES

Farm to Family Naturally, LLC > *St. Louis, Missouri* > www.hufed.org/farm-to-family

Farm to Family Naturally operates a mobile market in St. Louis area food deserts. Their model is particularly interesting, because they worked with St. Louis Metro Transit to gain permission to sell at four transit sites. The market started in

December of 2012 with two locations, and has now expanded to serving 4 school districts, 5 day care centers, 30+ local restaurants and 2 farmers market locations.¹⁶⁸ Revenue generated during their first four months came to \$70,000.¹⁶⁹ While they expanded, one of the obstacles they faced was trying to accept EBT at their market. They were unable to obtain an EBT card reader for their market because EBT readers are assigned only to permanent locations. In the meantime, while they address this issue, they are able to use the EBT machine from an affiliate farmers market.¹⁷⁰ They are seeing strong interest in the surrounding nonprofit community about bring better food access to food deserts, and may have new partnerships to look forward to in this new venture.

People's Grocery > *Oakland, California* > www.peoplesgrocery.org

Working in the food desert of West Oakland, need is primarily what led People's Grocery to creating the first mobile market in the country in 2003.¹⁷¹ The organization renovated an old postal truck, and fitted it with shelves, bulk bins, and refrigeration. They used solar-powered generators for the truck's energy needs, and it ran on biodiesel fuel. Not only did they provide organic produce, but they gave out nutrition information as well and became a community meeting place.¹⁷² In 2004, the market doubled its original membership to 200 people and was serving an average of 35 customers a day.¹⁷³ They sourced their produce from their own gardens, as well as from food suppliers and donors. In 2004, sales had doubled and reached \$27,000 since their inception in 2003. They also were introducing new foods to their community members, who when surveyed felt they were eating better and trying new things. While this was a great model, it was only meant to be an interim solution until they built a store. Now the former CEO and Founder have created a new nonprofit venture called People's Community Market, which is currently gathering investors.¹⁷⁴ This project is no longer listed on the website for People's Grocery, but their model has been replicated in other urban areas.

168 Farm to Family Naturally LLC- 2nd Grantee Quarterly Report. Wallace Center at Winrock International

169 Ibid.

170 Ibid.

171 Ahmadi, B. (2010). Learning to Grow Community Leadership: Why Leaving is my Greatest Accomplishment. *Grassroots Economic Organizing (GEO) Newsletter*, II,(5).

172 Suutari, A. (n.d.) The People's Grocery: Bringing healthy food to low-income neighborhoods.

173 Ibid.

174 People's Community Market.

G. Innovation: Urban Agriculture

Concept and Definitions

Urban and peri-urban agriculture (UPA) refers to the production, distribution, and marketing of food and other products within the cores of metropolitan areas and at their edges. When examined broadly, UPA is a complex activity, most often addressing multiple community issues: food security, neighborhood development, environmental sustainability, and land use planning, to name a few.¹⁷⁵ The success of an urban farm is very much dependent on policies set in place by the individual city; some cities allow urban farming, others do not, and others have very narrow definitions of what urban farming is and is not.

Historically, people have turned to urban agriculture during times of duress and need. In the late 19th century, Detroit Mayor Hazen Pingree used vacant lots for urban agriculture as a means to combat unemployment. Within a year, half of Detroit families were producing food on these lots. This model would be replicated by 19 other cities.¹⁷⁶ During food shortages in WWI and WWII, the United States relied on Victory Gardens to produce food.¹⁷⁷ In 1943, Victory Gardens grew 43% of the produce in the United States.¹⁷⁸ Today, UPA is seen as an innovative approach to encourage food security, community resilience, and other social change.

UPA/Urban farming—different uses and goals:

- Grown for household or personal consumption
- Grown for donation to food insecure populations
- Grown for distribution and sale to consumers, retail, restaurants, etc.
- Used as a catalyst for economic development
- Used for job training or education for aspiring urban farmers and related stakeholders
- Used for community development: neighborhood revitalization, crime reduction, community-building, and empowerment

¹⁷⁵ Community Food System Coalition. 2007. “The North American Urban and Peri-Urban Agriculture Alliance.”

¹⁷⁶ Hodgson, K. (2011). Investing in Healthy, Sustainable Places through Urban Agriculture. Funders’ Network for Smart Growth and Livable Communities, Edition 2, Translation Paper 5, 1–15.

¹⁷⁷ PolicyLink PolicyLink. (n.d.). Urban Agriculture and Community Gardens Toolkit.

¹⁷⁸ Hodgson, K. (2011). Investing in Healthy, Sustainable Places through Urban Agriculture. Funders’ Network for Smart Growth and Livable Communities, Edition 2, Translation Paper 5, 1–15

- Used for healing or therapeutic purposes, and building self-esteem
- Used for conservation or environment recovery

UPA/Urban Farming –types and methods

- Urban agriculture projects (including production, processing, and sale) can take place within an urban, suburban, or peri-urban area (see **Figure 5** for comparisons¹⁷⁹).
- Urban farm size and scale varies, taking place on large parcels of land or numerous, non-contiguous tracts. Urban farms in our research range from 2 acres to 200, as contiguous and non-contiguous tracts of land.
- Hybrid or social enterprise models, combining revenue-seeking with a social mission. The balance of “social” and “enterprise” in any given social enterprise will vary and fluctuate based on goals or local situation.
- Wide range of production methods: Production techniques for urban farms are primarily determined by what the land or space will allow, with some farms inventing their own techniques as they go along. Production methods can include: row gardening; container gardening en masse; raised beds; hoop or green houses for season extension; hydroponics; aquaculture; beekeeping; and more. Vertical farming, a growing phenomenon, requires much less space, and can work on rooftops, balconies, fences, and walls. Compost production in urban areas is also a means of recycling food waste produced in urban areas, and in some cases is sold as a premium product.

¹⁷⁹ Hodgson, K. (2011). Investing in Healthy, Sustainable Places through Urban Agriculture. Funders’ Network for Smart Growth and Livable Communities, Edition 2, Translation Paper 5, 1–15.

Observations on the Research/Body of Knowledge

In spite of its longevity, there is little research on the quantifiable economic benefits of urban agriculture in food sector terms, due in part to the informal nature of the work, and due to competing priorities including community quality of life, crime, and health. There are, however, a growing number of environmental studies and data to suggest urban agriculture can address everything from greenhouse gases to safe drinking water, through the use of intensive production methods that maximize natural resources and space constraints.¹⁸⁰

According to these proponents of urban agriculture, agriculture “uses 70 percent of the world’s available freshwater for irrigation” which could lead to shortages of clean drinking water in some places. Agriculture also accounts for “20 percent of all gasoline and diesel fuel consumed in the US,” which affects not only the environment but also the price of food, which has “roughly doubled the cost of eating in most places worldwide between 2005 to 2008.”¹⁸¹ Metrics like these make a compelling case for urban agriculture.

Another reason for research gaps include lack of capacity or inclination on the part of organizations or people involved in urban agriculture. At the local level, they may not have the skills or capacity to fully identify and measure the financial or economic benefits of their work. Further complicating the matter is the fact that many urban farms strive for multiple impacts—a triple bottom

Figure 5 - Comparison of Rural, Urban, Peri-urban agriculture



Source: Investing in Healthy, Sustainable Places through Urban Agriculture

¹⁸⁰ Despommier, D. (2009). Growing skyscrapers: The rise of vertical farms. *Scientific American*, 301(5), 80-87.

¹⁸¹ Ibid.

line, or people-planet-profit approach. As these organizations grow and scale up, metrics may be easier to come by as capacity grows. With the growing interest in urban agriculture worldwide, organizations are providing technical assistance to urban farms to quantify benchmarks, financial progress, and impacts, such as sales volumes, revenues, and jobs created.

Risk, Barriers, Constraints

The obstacles and risks inherent to urban agriculture are similar to any other agricultural venture, namely: soil health, land tenure, and technical capacity from production to operations to marketing and distribution. But if a start-up is well-researched, well-invested, and has strong, and equitable community buy-in and technical support, the likelihood of success is much greater, and if combined with an incubator, or urban farm training program, all the better. Listed below are common obstacles encountered when starting an urban agriculture venture, with innovations to avoid the obstacles listed below. Many of these obstacles could be seen as windows of opportunity for city and local governments to provide support, coordinate support, or for the design of new innovations.

Notable Risks and Barriers include:

- ***Lack of land security:*** Obtaining land ownership can be difficult for urban farmers due to the level of financial investment, or obstacles in obtaining outright ownership. One survey found that only 5.3% of gardens in the 38 cities they surveyed were permanently owned. Some ways farmers combat this is by creating community land trusts to promote collective ownership of land among community institutions.
- ***Lack of technical skills:*** Urban farming requires both agricultural production and business skills for success. Many individuals and communities seeking to get their ventures off the ground lack one or both of these skillsets, and have trouble accessing training. Fortunately, many urban agriculture nonprofits are now offering training and certificate programs to address this need.
- ***Soil contamination and cleanup:*** Soil contamination is a big issue in urban areas, especially in areas with industrial backgrounds. This could lead to costly clean-up procedures if the property is highly contaminated, as well as exposure to participants working on the lot. Some methods farmers have used to circumvent this include different growing methods such as raised beds, vertical farming, or hydroponics.
- ***Start-up and operating costs:*** When looking at urban agriculture, some costs to consider are testing of the soil and environment, compost, soil, seeds, tools, and labor. Some of the most costly investments are the land and accessing water. Today, many nonprofits involved in urban agriculture have taken advantage of grants to cover operational costs.
- ***Insufficient income generation:*** For many small urban agriculture projects, it is difficult to provide income for more than a small staff. Organizations are taking measures to make urban agriculture more profitable by diversifying crops and adding value-added products.

- ***Expense of and lack of access to water:*** One of the biggest obstacles is finding access to clean water. It can be extremely costly and difficult to obtain depending on your location. This is also a good entry point for city and local municipalities that run the utilities urban agriculture projects depend on.
- ***Not a one size fits all model:*** Due to the evolving nature of 21st century urban farming, best practices are still being created and some are finding that urban farming is not right for them. Many proceed without market research or planning, which can lead to failure. The size and scope of a farm will also dictate its success. For example, In *Saving Farms and Farmland*, Tom Daniels makes the case that in spite of the increase in urban production, rural farmland preservation is still important, because Americans rely on grains and livestock for food, products not conducive to the urban farm model at this time.¹⁸²
- ***Policy support:*** Policy remains the largest barrier to entry for urban farming, and can dictate its size, scope, and future success. It is placed last in this list so we can address it more fully. In some cities, public policy has not had the chance to fully catch up to the evolution of urban agriculture. Though urban farms tend to produce vegetables, herbs and cut flowers, there are those who keep small livestock, such as chickens or goats, where it is allowable, but this is still extremely rare. For many cities “urban agriculture” is not easily classified as a business or entity type, and for this reason, many urban farms are operating without the support of incentives, subsidies, or financing available to other food enterprises. There is more often than not no checkbox that says “urban farm,” and if there is, it is often rigidly defined. For example, the city of Detroit passed the Urban Agriculture Ordinance which now makes it legal to have a garden as a secondary use for a business or a resident’s property, and urban farming as a primary use on vacant land with the caveat that anything more than 2 acres goes through a vetting process. This ordinance is a first step towards creating inclusive policy in Detroit, as some farmers do keep livestock, but they hope this area of urban agriculture will be addressed in the near future.¹⁸³

City governments can play a big role in urban agriculture, and have tools to invest in making this a viable venture for their city. At the moment, some cities that have thriving urban agriculture movements also have burgeoning Food Policy Councils, which are instrumental in bringing all actors in the food system to the table to create inclusive policy. Other tools, such as land banks, are also useful. If cities interested in expanding urban agriculture have clear knowledge of the amount of public land in their city, it could be a way to help identify vacant tracts available for cultivation. A model similar to this is being piloted in Chicago under the “Farmers for Chicago” project, which will train 25 urban farmers in growing methods and business practices, as well as connect them with empty tracts of land. This initiative was born from a partnership with the city government and Growing Power Chicago, which is a

182 Daniels, T. (2009). *Saving farms and farmland*. *Planning*, 75(8), 38-43.

183 M. Yakini. Personal Communication. March 22 2013.

large nonprofit that specializes in urban agriculture.¹⁸⁴ There are many investments that cities can make to support a favorable climate for urban agriculture, and as K. Rashid Nuri of Truly Living Well points out, many of the challenges of urban agriculture won't be rectified until all community institutions commit to making a full investment.¹⁸⁵

Business Structure and Ownership Model

Urban agriculture at this time appears to be comprised of small-scale, locally owned, tax-exempt nonprofits, operating as social enterprises (e.g., Growing Power, Truly Living Well), generating income through food production and sales, but also invested in the community and creating social benefits. However, large-scale, for-profit models exist as well, such as Hantz Farm in Detroit and **Green City Growers** in Cleveland (see case study below). Partnerships with local government and city institutions (nonprofits, schools, faith-based organizations, etc.) can help reduce risk. The San Antonio Food Bank, for example, acquired 3 acres of land adjacent to its facility, and in 2012 was able to produce 40,000 pounds of food in one year that it then distributed through its mobile pantry program, with a portion reserved for sale at farmers markets. The food bank is used for storage and processing of the food, and with strong support from the City of San Antonio, has acquired an additional 23.5 acres, 6 of which they plan to farm this growing season, for a projected 180,000 pounds of produce.¹⁸⁶ Investment costs depend on scale and size. For example, in the PolicyLink Urban Agriculture toolkit, they found that “community residents running a community garden may need approximately \$1 per square foot per year over five years for soil, seeds, soil testing, basic turkey wire fence, and initial cleanup, assuming volunteer labor and a free water source.”¹⁸⁷

Jobs, Labor, Workforce Development

There is no overarching research at present that says urban agriculture can create a certain amount of jobs within a community. Job creation is an outcome of many urban agriculture projects; they usually start very small with the few staff required to handle the cultivation and marketing of product, but as a project becomes more financially sustainable or has increased access to capital, operations can be scaled up and more jobs created. Specific examples of job creation include:

- **Green City Growers Cooperatives** (see case study below) in Cleveland, OH, a 3.25 acre hydroponic greenhouse growing greens and herbs, expects to provide 35-40 long term, living wage jobs for low-income residents in the surrounding area, and worker-owners will build about \$65,000 in patronage accounts over 8 years.¹⁸⁸

184 Mayor's Press Office. (2013). Mayor Emanuel launches new "Farmers for Chicago" network for Chicago urban farmers.

185 K. Rashid Nuri. Personal Communication. March 22 2013.

186 Neira, Luz-Myriam, San Antonio Food Bank, Interview conducted by Wallace Center staff on 3-19-2013

187 PolicyLink (n.d.)

188 Hagey, A., Rice, S., & Flournoy, R. (2012). Growing urban agriculture: Equitable strategies and policies for improving access to healthy food and revitalizing communities. *PolicyLink*, 1–47.

- **SHAR (Self-Help Addiction Rehabilitation)** is a collaborative with 50 organizations and 7 universities on one of Detroit's largest urban farms, with a packing company on site. They estimate their project will create 150 jobs in six months, and 2,500 -3,500 permanent jobs for local, low-income residents over 10 years. The jobs are expected to pay from \$10-\$12 per hour with benefits.¹⁸⁹
- **Truly Living Well** (see case study below) in Atlanta, GA has created 35 short and long term, livable wage jobs.

Urban agriculture can provide an opportunity for job training and skill development, especially for youth, homeless, unemployed, or formerly incarcerated individuals. There are many examples of urban agriculture organizations with youth development, or job development programs. A few notable examples include The Food Project (Boston, MA), Earthworks Urban Farm (Detroit, MI), Added Value Farm (Brooklyn, NY), Growing Power (Milwaukee, WI), The Pennsylvania Horticultural Societies (PHS), and City Harvest (Philadelphia, PA). These programs not only cover food, but they also cover business plan development, and selling/marketing product, enabling their graduates to create sound businesses as well.

Effects on the Economy

As the cost of water and fuel rises and more people “reverse migrate” to urban centers, the economics of urban agriculture will become clearer. For now, hard economic impact data is a challenge to find, but at the time of this report several economic impact studies were underway to collect this data. Quantified in other terms, urban agriculture can decrease public land maintenance costs of underutilized land, and make the land productive. Studies have shown that a community garden can yield between \$500 and \$2000 worth of produce for a family per year, and every \$1 invested in a garden by the gardener plot yields about \$6 worth of produce.¹⁹⁰ Urban agriculture can decrease a household's food expenditures. Urban agriculture is also a site for business incubators, with some urban farms generating revenue through workshop fees and apprenticeship programs. Lastly, increases in property values have also been noted. For example, a New York University study examined 636 New York City gardens, and found a positive effect on sale prices of properties within a 1,000 foot radius of a community garden.¹⁹¹ And some large urban farming organizations have also become producers of compost, selling their product to help raise funds and assist other urban farmers in creating healthy soil for planting.¹⁹²

Impacts on Local Food and Community

Urban agriculture can help drive demand for local food. Many projects have spun off to create farmers markets and institutional connections to increase access to fresh, local produce. On a household level, it can provide families with access to new foods they had not tried before. For example, City Slicker Farms in Oakland surveyed its participants and found that 92% saved money due to gardening, 62% grew half or more of their household produce, and 61% reported improving their

¹⁸⁹ Ibid.

¹⁹⁰ Ibid.

¹⁹¹ Ibid.

¹⁹² Hodgson, K. (2011).

diets due to their gardens. There are also many social benefits to urban agriculture, such as community ownership, pride, beautiful green spaces, and health and well-being. A recurring theme in successful urban agriculture projects is community ownership and community-buy in. There have been real strides in nutrition education as well, encouraging people of all backgrounds to add more produce to their diets, and to think of innovative ways to do so.

CASE STUDIES

Truly Living Well › *Atlanta, Georgia* › www.trulylivingwell.com

Starting in 2006 in a residential backyard south of the airport, Truly Living Well (TLW) now operates 5 urban farms in the city of Atlanta that produce 25,000 lbs. of food annually. TLW employs natural and sustainable methods that have been uniquely designed with the Atlanta terrain in mind. When looking back, founder and director K. Rashid Nuri, wouldn't have started the way he did. Their move from a residential backyard to a larger site was facilitated by a \$10,000 loan from someone interested in the work. Today, foundations fund the majority of their work, but their diversified revenue stream also includes money they receive from production, markets, and individual classes and trainings they offer. For example their summer camps bring in between \$35,000-\$40,000 a year and their Agriculture Training brings in roughly \$225,000.¹⁹³

When it comes to growing food, TLW avoids using petrochemicals by relying on natural methods, such as crop diversity and natural cycles of nature. This organization operates a social enterprise model. They offer numerous programs that cover direct selling, job training, and garden installation. They operate a year-round farmers market two days a week, and also a community supported agriculture (CSA) program that offers a tiered paying scale, with full, half, and senior discounted memberships. A portion of the produce grown is given to those who can't afford to purchase it at the market, and their market also participates in Wholesome Wave Georgia, which doubles the SNAP/EBT benefits consumers use to buy produce. Not only do they sell produce at markets, they supply food to six high-rated restaurants in Atlanta, and install gardens for individuals, communities, and large-scale projects in the city. Restaurants account for a third of their produce sales, while the other two-thirds are sold at market, small retailers, co-ops, and new age grocers. Many of these retailers and co-ops share the same values regarding food production that TLW shares, so there is little tension over prices, procurement, or filling the demands of these retailers.

¹⁹³ K. Rashid Nuri. Personal Communication. March 22 2013.

An array of programs is offered through TLW, but their main training programs are the Urban Growers' Training Program and Summer Camp. The camp is directed at children, and offers elements of farming, creative movement, healthy food education, and other educational activities that draw on subjects like math and science. The Urban Growers' Training Program goes for six months, with three months focused on technical farming skills, and the other three on entrepreneurial training. After the six months of training, they mentor graduates for a year to assist them with their new ventures. The program is able to provide a small stipend to participants below the poverty line (\$125/wk), and has a waiting list to enroll. TLW has been able to create 35 livable wage, seasonal, and permanent jobs in urban agriculture. Many of these jobs include working as crew on the farm (Crew Chief, Farm Manager, Crew, Trainee, etc.) and marketing and selling produce.

They have multi-sector partnerships, with investors ranging from the EPA and USDA, to Coco Cola and the Community Foundation. While TLW has seen economic gains, they believe there are also other ways to measure the effectiveness of urban agriculture.¹⁹⁴ They also take into consideration the positive social and health outcomes that come out of this operation. For example, increasing access to healthy food in food deserts creates positive health outcomes for consumers. With a healthier diet, they find their community members feel better, are more productive, and have fewer sick days. TLW is actively seeking ways to monetize these important social benefits.

The farm provides green space and a place to come and be connected to land and de-stress. These spaces become a place where community members can meet and develop a sense of belonging, crime rates and illegal activities surrounding the farm are reduced, and people feel a sense of pride and self-efficacy being a part of producing something that takes care of them all. They represent a strong example of how urban agriculture efforts can improve the livelihoods and well-being of members involved.

TLW is also seeking a more accepting political and lending policy for urban agriculture in Atlanta. When applying for bank loans, Rashid was be turned down because no one was doing urban agriculture and bankers didn't know what to think of his project. Rashid feels that the common questioning around the profitability and viability of urban agriculture won't be adequately addressed until the full community, including community members as well as all institutions (e.g. lending institutions, government) commit to adequately investing in the idea. That is the main way to move towards making urban agriculture a viable innovation.

194 Truly Living Well. "Doing Urban Agriculture Well" August 2012.

Growing Power > Milwaukee, Wisconsin > www.growingpower.org

Growing Power started in 1993, when founder and current Farmer-in-Chief Will Allen had a farm and a group of youth who needed work. This was the basis for a partnership where Will Allen let teens work at his store and he helped them renovate green houses to grow food in their communities. Now 20 years later, Growing Power has turned into one of the leading organizations in urban agriculture. Currently operating in Milwaukee, WI and Chicago, IL, Growing Power focuses on three areas: Projects and Growing Methods, Education and Technical Assistance, and Food Production and Distribution.¹⁹⁵ They also have satellite training sites in Arkansas, Georgia, Kentucky, Massachusetts, and Mississippi.¹⁹⁶

Growing Power employs a variety of growing methods. In an area no larger than a small supermarket, they are able to produce a range of plants and vegetables, fish, and livestock such as chicken, goats, ducks, rabbits, and bees. They use greenhouses and hoop houses to grow salad greens, herbs, mushrooms, and other vegetables and seedlings. They are strong proponents of aquaponics, which is a growing method that creates a closed-loop system supporting both fish and plants by circulating water within the system. They are able to produce tilapia and perch in these systems, and produce salad mix as well. Growing Power also participates in large-scale composting and vermicomposting (using worms to compost). And they sell their meat, produce, compost, and worm castings to the community in retail stores. Growing Power also participates in policy initiatives, such as the creation of the Chicago Food Policy Council, and the Growing Food and Justice for All Initiative that dismantles racism and empowers low-income and communities of color through agriculture.

Some notable highlights of 2012 include:

- \$750,000 worth of crops produced on 200 acres of growing space
- 50,000 fish raised (tilapia, perch, pacu, and koi)
- 34 goats raised
- 500 chickens raised
- 43 million pounds of waste composted

¹⁹⁵ Growing Power, “About Us” http://growingpower.org/about_us.htm Accessed 3-1-2012

¹⁹⁶ Ibid.

- 1,700 beginning farmers trained, 371 Youth Corps graduates, and 48 commercial urban agriculture farmers trained¹⁹⁷
- Started an initiative in 2012 to bring 150 jobs to low-income communities in Milwaukee

Green City Growers Cooperative > *Cleveland, Ohio* > www.evergreencooperatives.com/business/green-city-growers/

Green City Growers (GCG), which is the “largest food production greenhouse in a core urban area in the United States,”¹⁹⁸ is one of the largest, and most innovative local food initiatives in the country. Officially starting production in February 2013, GCG uses hydroponic methods to grow microgreens and herbs on 3.25 acres of floating beds, on a 10.7 acre site in the middle of Cleveland. Green City Growers produces 35,000 heads of butterhead lettuce and 30,000 heads of green leaf lettuce per week, along with basil, artisan lettuces, watercress, and arugula¹⁹⁹.

As a year-round production facility, they will be able to produce 3 million heads of lettuce and 300,000 lbs. of herbs per year. Locally minded, GCG sells within a 50-mile radius of Cleveland. They are able to package and deliver their refrigerated products within 24 hours of harvest. Being local also gives their product 5 more days of shelf life as compared to imported lettuce. They are filling a local product niche rather than taking business from local farmers, as most lettuce purchased in Cleveland is from California or Arizona.²⁰⁰

GCG currently employs 20 people, most from the surrounding community, and will add 5 more this year. They will become employee-owners, sharing in part of the business profit. Starting pay for production jobs is \$10/hr. with no previous training required. Once employees have been with the co-op for 6 months, they receive health insurance at no cost and an invitation to join the co-op. If accepted, they receive a 50 cent/hour raise that is held by the co-op until it reaches \$3,000, which is the cost to buy into the co-op. To hold to the mission and value of Evergreen Cooperatives, GCG prefers to hire from within the area where they operate and build employees’ skills. They teach horticultural skills but also work hard to build a positive work culture, teach conflict resolution skills, reinforce a commitment to excellence at all times, and strengthen communication skills, among others.²⁰¹ Within five years, GCG predicts it will have 42 employees and have moved into value-added processing.

¹⁹⁷ Growing Power, Inc.: 2012 Highlights” Growing Power. (2013).

¹⁹⁸ Green City Growers Cooperative. “Green Facts.”

¹⁹⁹ Green City Growers Cooperative. “Green Facts.”

²⁰⁰ Ibid

²⁰¹ M. Donnell. Personal Communication. March 21 2013.

Green City Growers is one of three businesses within the Evergreen Cooperative, a larger initiative that was created in partnership with the City of Cleveland. This initiative was created as a strategy to make Cleveland a more cohesive community by creating shared economic opportunity and prosperity. Cleveland has a number of very successful place-based institutions (e.g. Cleveland Clinic), but they are located in a part of the city with nearly 43,000 low-income residents. Through a process convened by the Cleveland Foundation, these institutions realized they could play a significant role in revitalization and that it would be to their benefit if the city invested in the surrounding communities. Evergreen is designed to tap into the purchasing power of these various institutions and build the assets of community residents through a cooperative model. The process began in 2009 with a community process and a business plan, and was followed by collaborative efforts to secure a site and conduct a brownfields environmental assessment. Package financing, facility design, and construction came to fruition in late 2012. The Evergreen Cooperative plans to start 10 businesses and provide ownership opportunities for 500 residents.²⁰² In addition to GCG, the Coop currently includes a commercial laundry business and a home weatherization business.

Financing for GCG totaled \$17.5 million and utilized a New Markets Tax Credit framework. Agriculture is not a typical use of New Markets and so it presented some challenges. The City of Cleveland was an essential partner in the entire development of GCG. The city helped by identifying a site for the facility, worked with residents and others to ensure access to the chosen site (land assembly), and worked to bring a number of financing elements to the table including HUD Section 101 funds, Brownfields Economic Development Initiative (BEDI) funds, and Economic Development Administration funds for capital and equipment.²⁰³ While the project is still in its early stages, it is an important example of what city investment in urban agriculture, economic opportunity, and community revitalization can do.

According to Mary Donnell, CEO of GCG, there are quite a few cities interested in replicating the GCG model. She cites a number of factors that should be in place if a city is going to pursue it including: a very strong commitment from the city, foundations, governmental officials, funders, customers, stakeholders, etc. to rally around a big idea; do the hard work it takes to make sure the business plan is solid; find the right entrepreneur with industry experience; be prepared to do endless problem solving; and, have the



Source: Green City Growers

²⁰²http://www.policylink.org/site/c.lkIXLbMNjRE/b.8600515/k.E4BB/Americas_Tomorrow_March_13_2013.htm?section=story2&msource=ESGM20130313#.UzTqByG0fU.

²⁰³ M. Donnell. Personal Communication. March 21 2013

leadership skills to build strong teams and coalitions of people and institutions necessary to make a start-up venture successful. Mary counsels, “This work is not easy or for the faint-hearted, so persistence and determination are also part of the mix as well as that abiding commitment to excellence and doing a job very well.”

H. Innovation: Food Waste Recovery

Concept and Definitions

Food waste is defined as “uneaten food and food preparation wastes” and can occur in all stages of the supply chain, from production (farm waste) to aggregation/processing (grading and discarding lower grade product) to marketing (consumer food waste).²⁰⁴ In 2010, America wasted over 33 million tons of food, much of it still edible or able to be processed for human or animal consumption. This is a 16% increase in food waste since the year 2000, which puts a strain on our landfills and the collective resources and logistics required to transport and handle food waste. With over a third of all food produced being wasted, food waste has become the “largest category of waste reaching U.S. landfills.”

Figure 6 - Percentage by Type of Food Wasted, Natural Resources Defense Council²⁰⁵



Food waste can occur at any level: restaurant, consumer/household, market, and on the farm itself before it even leaves the farm gate. In the case of farms and aggregators, food that does not meet certain grading requirements is often discarded or

²⁰⁴ United States Environmental Protection Agency. (2006). Terms of Environment: Glossary, Abbreviations and Acronyms (Glossary F).

²⁰⁵ Natural Resources Defense Council. (2012). Wasted: How America is losing up to 40 percent of its food from farm to fork to landfill. Issue Paper.

not sellable. Often the quality of the food, in terms of taste and nutrition, is not compromised, but the grading is based on aesthetic and superficial factors such as: shape, size, color, and whether or not the product is blemished. In terms of dollars lost, “grocery stores and other retail food sellers are losing as much as \$15 billion a year in unsold fruits and vegetables alone, with about half of the U.S. supply going uneaten,” according to an analysis on food waste by the National Resources Defense Council.²⁰⁶

Figure 7 - Food Waste & Recovery Reduction Methods



Each of these points of sale present both a problem but also a chance for innovation and an opportunity to turn this loss into a gain, economic and otherwise. For example, there are two primary ways to combat food waste: gleaning and food rescue. Gleaning is the process of collecting crops that have been leftover on farm fields from “mechanical harvesting.” Often, it is not economical for farmers to collect these remains, and gleaning can be used to salvage any leftover, useable

²⁰⁶ Natural Resources Defense Council. (2012). Wasted: How America is losing up to 40 percent of its food from farm to fork to landfill. Issue Paper.

food. Food rescue is the process of collecting perishable, processed or prepared foods from wholesale and retail distributors, or any foodservice industry institutions. Companies such as Sysco may develop relationships with processors and deliver the food to processing facilities to convert into meals, as is the case with **DC Central Kitchen**, in Washington DC (see case study). Food waste can either be composted, or recovered for human consumption. Food waste recovery can save millions of dollars in trucking costs and has numerous positive environmental and social outcomes. However, research about food waste and its effect on job creation on a large scale is lacking. In the case of DC Central Kitchen, the kitchen is purchasing over 200,000 tons of regionally produced fruits and vegetables that would have otherwise been wasted or thrown on the compost pile, injecting over \$150,000 into the local economy. The food then goes into its pool of product that is processed into 10,000 meals a day for DC area schools and shelters. See below and case study:

Figure 8 - 2012 DC Central Kitchen Food Purchases

Totals By State, By \$		
State	Lbs.	\$
West Virginia	84367	\$64,754.70
Virginia	57860.76	\$36,852.63
Maryland	34901	\$33,269.18
Pennsylvania	27674	\$17,263.12
New Jersey	2500	\$2,600.00
North Carolina	7840	\$1,784.00
Totals	215,142.76	\$156,523.62

Observations on the Research/Body of Knowledge

In spite of the wealth of research on food waste from a refuse/trash perspective, there is a lack of research on how food waste is converted to usable product for the food sector. For example, several large-scale city composting programs have emerged in recent years (see case study about the **San Francisco Composting Program** below), which do in fact convert food sector waste, but whose processes are one way, food in-compost out. Research exists, but it is limited in scope, geography, or otherwise. In the case of purchasing “seconds” (lesser grade farm products, for example), this is done through relationships with farmers, and from there the endeavor can grow. It took DC Central Kitchen over five years to grow its local procurement program to the level it is now. We do know that recently, both municipal and private initiatives

have emerged to address food waste by encouraging, at a minimum, reduction in food waste, and also exploring ways to generate economic, social, and environmental productivity and impacts from food waste. Food waste recovery research shows that many small organizations have started to emerge, especially in the last five years, to address the problem of food waste in the United States. These organizations are providing employment opportunities, but because of their small size, employment is on a small scale. On a larger scale, a few U.S. cities have created municipal composting programs where waste is collected, sent to a nearby composting site, processed, and then sold to local growers.

Although not about food waste recovery specifically, many articles discuss the concept of “zero waste” as a system or philosophy, and how various zero waste initiatives and recycling programs are contributing to job creation on a large scale. Though more complicated definitions of zero waste exist, according to the Zero Waste International Alliance, “Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use.”²⁰⁷ This approach looks at an entire system, across sectors and components, to identify and design efficiencies and synergies that enable a net reduction in waste. This may be useful in predicting how food waste recovery programs might serve as sources of employment if they existed on a larger scale.

Risk, Barriers, Constraints

Many eating establishments are unlikely to let food recovery organizations collect their food waste because of food safety liability issues. For example, The Needs Foundation in Oklahoma City is having trouble getting restaurants to commit to donating food waste because they do not want to be held responsible for any illnesses due to contaminated food. In order to minimize this risk and maximize the amount of food waste rescued from restaurants, cities and states could focus on policies that help ensure that “restaurants, bakeries, or people that make and provide food, will not be held liable, as long as they’re acting in good, reasonable faith.”²⁰⁸

A lack of connections to the production side of food waste is another potential barrier in having a successful food waste recovery program. Alexander Moore of **DC Central Kitchen** notes that the reason the Kitchen is able to collect so much food waste on a regular basis is because they also purchase produce from farms. Their model is a hybrid of recovering and purchasing. “The more we are buying from local farmers, the more products we are given.”²⁰⁹ According to Mr. Moore, it takes time to achieve that kind of balance with growers and producers.

207 Zero Waste International Alliance. (2009). Zero Waste Definition.

208 Thousands of pounds of local food wasted each day. (2013, January 13). Fox 25- Oklahoma City.

209 Moore, A. (2013, January 30). Interview by A. Rosenthal [Personal Interview]

Cities that start up municipal composting programs run the risk of their residents not participating in these programs initially. The public may not understand reasons for composting and its benefits. If the public is uneducated about composting, they may choose to opt out and continue to throw food waste in the garbage. This could mean a loss of money for the city, as the amount of garbage the city produces would not significantly decrease and the money put into the composting program would be a waste. This problem could be remedied in a number of ways. First, cities beginning composting programs should distribute information to all residents about the benefits of composting before the program begins. The City of San Francisco has attempted to address this risk by passing a law making it illegal to throw food scraps into the garbage. Though the law is only enforced in extreme situations, the city has seen an increase in composting since it was passed in 2009.²¹⁰

Business Structure and Ownership Model

Due to the newness of any wide-scale formalized food waste recovery program, food waste recovery systems are typically narrowly focused on one or a few points in the supply chain, or a specific product category such as processing “seconds” (lesser grade food that cannot be sold raw), or selling as animal feed. As mentioned, there are different points in the chain, and different points of sale/distribution, such as restaurants, foodservice, or farmers markets, which will each have their own processes, interests, stakeholders, and perspectives, which will affect how any formal initiative is structured. It is predicted that due to the rising problem of waste, more formalized efforts will be required, and the cities will play a large role in their design, implementation, and coordination with all interested parties and sectors.

Jobs, Labor, Workforce Development

While some food waste recovery programs and organizations are creating jobs, it is typically on a very small scale. These types of organizations typically have between 5 and 10 employees. For example, Food Shift, a Bay area organization that is “dedicated to solving the problem of food waste,” is working on a bicycle food recovery program where they will “train local, low-income women to coordinate and execute pick-up and drop-offs, thereby creating community-based employment opportunities.” But why are employment increases and economic viability difficult goals to achieve? Because “most food recovery groups in the U.S. provide a free service, receive limited financial support, and depend on volunteer commitments to operate. These restraints limit their ability to expand and increase impact.”²¹¹

If these programs had support on a city or state level, they might become much larger sources of employment. Indeed, a 2000 Recycling Economic Information Study found that “the reuse and recycling industry indirectly supports 1.4 million jobs [nationwide].” Similar to recycling, composting and other forms of food waste recovery programs on a municipal level

210 Gorn, D. (2009, October 21). Food recycling law a hit in San Francisco. National Public Radio.

211 Poswolsky, A. (2013, January 14). Food shift: Solving the problem of food waste in the U.S.

have the potential to create millions of jobs nation-wide.²¹² Furthermore, these programs can be lucrative if the quality of the product is such that it can be sold (for purchase or through subsidy), as is the case for food that is transformed into meals, jams, or soups, or simply peeled, cut, and frozen to remove blemishes and counter the size/color/shape grading issues.

Effects on the Economy

There are two key ways to make economic impact through food waste recovery programs. One is the **reduction of costs**, in terms of fuel and labor, for handling and trucking product to landfills. For example, trucking food waste to Wilmington, Delaware from New York City is 260 miles round trip and can cost haulers up to \$1,000 dollars in labor costs. By creating in-city organic pick ups, the amount of fuel, time, and money used on transportation could be dramatically reduced.²¹³ This reduction in hauling expenses is exemplified by The Needs Foundation, an Oklahoma City organization that picks up about 20,000 lbs. of extra food from restaurants that would otherwise be thrown out. They then use this rescued food to make meals for the hungry. The Needs Foundation estimates that America probably spends 100 billion dollars transporting food to dumps.²¹⁴ Some food waste recovery programs that *are* local sources of employment are hiring residents who might create further expenses for the government if they were unemployed. For example, **DC Central Kitchen** hires ex-cons who have graduated from their cooking class and gives them a living wage of \$12.50 an hour and full health benefits. Many ex-cons who find themselves unable to find work after their release end up back in prison, costing the government more money. By hiring these men and women, DC Central Kitchen is cutting down on potential prison expenses, which can be extremely costly.²¹⁵

The second way to make economic impact is to recover food that would have been wasted but is suitable and legal for human or animal consumption, process it, and then transform it into product that can be sold. Some examples include canned or frozen foods, meals, or in the case of lesser grade food waste, animal feed. Organizations that use unwanted produce from farms are increasing the amount of local food we eat. For example, DC Central Kitchen collects extra produce that farmers don't want and uses it for meal preparation. That is local food that would ordinarily be wasted and is instead being consumed. Gleaning and food rescue from farms maximize the amount of local food we consume, which contributes to a decrease in food that needs to be purchased from the grocery store.

Other impacts

Food waste could potentially be part of a solution for communities that are working to eradicate hunger. For instance, in

212 Recycling means business. (2002, February 1). Institute for local self-reliance.

213 Greer, D. (2012). Commercial food waste recovery in New York City. *BioCycle*.

214 Thousands of pounds of local food wasted each day. (2013, January 13). Fox 25- Oklahoma City.

215 Moore, A. (2013). Interview by A. Rosenthal [Personal Interview].

Oklahoma there are roughly 9,500 restaurants. According to The Needs Foundation, if the state targeted 28% of those in metro areas, in theory, 90,000 pounds of food could be collected daily, contributing to fighting hunger.²¹⁶ These programs can be lucrative if the quality of the product is such that it can be sold (for purchase or through subsidy) or donated (municipal compost, food donation).

Additionally, efficiently reusing, composting, or handling food waste may have positive environmental impacts, such as a decrease in methane gas from landfills.²¹⁷

CASE STUDIES

San Francisco's Food Composting Program › *San Francisco, California* › <http://www.sfenvironment.org>

The City of San Francisco has a municipal composting program to help execute their goal of zero waste by 2020. Since 1996, the city provides every business and household with a compost bin, and has regular compost pickup. Organics are then hauled 60 miles away to the Norcal Jepson Regional Prairie Organics Regional Composting Facility where they are turned into healthy, organic soil to be used on farms throughout California. By the end of 2011, the city had composted 1 million tons of food waste, and Recology CEO Mike Sangiacomo predicts, “We’ll hit our second million in five years.”²¹⁸

The Municipal Composting Program has multiple benefits to the economy, the environment, and people:

- Reduces carbon emissions
- Creates a marketable product from waste stream
- Creates growing medium for local agriculture
- Displaces petroleum-based fertilizers
- Avoids landfilling
- Can save money and emissions on transportation²¹⁹

216 Thousands of pounds of local food wasted each day. (2013, January 13). Fox 25- Oklahoma City.

217 Bell, R. (2012). *Reducing food waste has economic, environmental and social benefits*. Michigan State University Extension.

218 Shafer, M. (2011, November 22). San Francisco composting program marks million-ton milestone. CBS.

219 Kielty, A. (2006, November). *San Francisco's food composting program*. Mid-Atlantic organics summit.

CONCLUSION

On the basis of this literature review, we conclude that cities have a strong case for investing in their food sector, particularly the local food sector, to generate high yielding local socioeconomic benefits. National economic and food sector trends have aligned to support investing in locally owned food businesses as a promising arena which yields multiple benefits. In general, we can expect between approximately \$.30 to over \$3 of benefits generated per dollar invested in the local food sector. However, the actual benefits vary by locality and also depend on ownership structure, location and clustering of businesses, connectivity to supporting infrastructure and assets, and risk management of overall investment activity, among other factors.

The innovation case studies we have assembled help provide granularity about local variability in all aspects of their development and their outcomes, including what mix of local tools and strategies can lower risk and help ensure a flow of socioeconomic benefits over time. Certain segments of the supply chain — notably, processing and retail/consumption — offer the best investment areas for generating the greatest local benefits in jobs, wages, and access to healthy food. Whether investments in other supply chain segments, chiefly distribution, are justified depends on the degree of local needs, among many factors.

In some cases, the innovations and/or their categories are mature enough that substantive data exists to support their local economic promise. In other instances, local economic benefit data is fragmentary and suggestive but not fully developed. Nationally, investing in retail and foodservice operations that use local food as well as in food hubs, particularly very large hubs designed to serve a significant share of the urban food market, are two of the innovation categories where there is the most credible data to demonstrate their economic promise. Areas where there is potential but more research is warranted include short sale and value-added processing of near expiry food focused on serving regional food systems, clusters of diverse allied businesses that include a retail or foodservice component, and the use of social media and information technology to shift consumer behavior to either favor new businesses or change practices among existing businesses. These and other innovations are so new that there is not yet a critical mass of credible local or regional data to make a well-supported economic case.

Cities have a critical role to play as champions of innovation and investment in the local food sector. Increasingly, cities are forging specific plans, programs, and projects that aim to maximize the socioeconomic and environmental benefits of the food sector, as well as simply provide more of the food that people eat, enjoy, and that enhances their well-being. To date, however, few cities have actually measured the impacts of these investments or their economic return. So the time is ripe for the development of a

“we can expect between \$.30 to over \$3 of benefits generated per dollar invested in the local food sector”

roadmap for local food sector investment to help cities draw upon their unique assets in building and strengthening the food sector.

Moving forward, this literature review serves as the foundation for our accompanying report, ***North American Food Sector, Part Two: Roadmap for City Food Sector Innovation and Investment***. This roadmap is designed to assist cities in creating resilient and productive local and regionally based self-reliant food systems that deliver both near-term benefits and create enduring value. It is intended that this roadmap will enable cities to both choose among investment options and tailor investments based on their own characteristics, needs, and goals. The roadmap and other toolsets are rooted in an investment strategy to invest in many new food ventures, rather than relatively few, to increase the odds of sufficient success and be less concerned about the cost of some reasonably foreseeable failures among many new start ups.

It is the hope of the project team that this literature review and roadmap will help cities throughout the nation foster innovative food sector investments that would yield sustainable benefits in the form of job creation, higher wages, revenues generated, and increased access to healthy food among all communities. These are now major areas of concern for many metropolitan areas as they become more deeply engaged in food system planning – an increasingly critical need to help create a resilient food system.

APPENDIX: ADDITIONAL INNOVATION CASE STUDIES

FOOD HUBS

Green BEAN Delivery

For-Profit

www.greenbeandelivery.com

Green BEAN delivers produce, meats, dairy, and a variety of other products sourced from over 60 regional producers both to consumers (retail) and to retailers (wholesale) in Indianapolis and surrounding cities, Cincinnati, Columbus, Dayton, Louisville, Lexington and most recently St. Louis. Local farmers drop off products at warehouses designated for each city. Since 2007 Green BEAN has invested over \$6 million into the region's local food economy (through direct purchases from local farms). Their business has contributed to or created more than 160 jobs throughout the region in production, distribution, handling, and countless others through the businesses that sell and buy from them.

Wisconsin Food Hub Cooperative

Dane County, WI

www.wifoodhub.com

With startup funding from the Wisconsin Farmers Union and a 2013 award of a USDA Value-Added Producer grant, the Wisconsin Food Hub Cooperative (WFHC), officially made its first sales in July 2013. The farmer- and grower-led cooperative is owned by farmers, the local community, and the Wisconsin Farmers Union.

Prior to business launch, Dane County, WI (includes the city of Madison and is nearby to Milwaukee), commissioned a feasibility study for the development of the food hub. The feasibility study identified three core functions: packing, marketing and distribution of Wisconsin grown products in Wisconsin and surrounding states. In the first phase of business launch the Food Hub is strategically concentrating on marketing, sales, and distribution logistics. First year operations rely on on-farm aggregation and contracted distribution services. This plan was specifically followed to keep start-up debt low. The WFHC will build on the knowledge it can gain of markets and flows of goods to plan for Food Hub run aggregation, packing, processing and distribution in subsequent years. According to Olivia Parry, the project director of the food hub's feasibility study, the Wisconsin Food Hub projects up to \$3 million in sales for its first year. The market in the region is very interested in local food and the Food Hub sees the opportunity for steady increases in sales each year of operation. Based on current plans, at full capacity the hub would achieve over \$20 million in sales. The Food Hub created 2 new FTE positions, a Sales Manager and General Manager in its first year of operations. At a steady state level of

operation it will require 6 FTE and 16 PTE and up to 10 third party employees (to handle contracted distribution). At capacity direct employment would increase by a factor of 2.5 with positions in management, operations, sales, facilities, production, warehousing, and distribution. The hub would also drive indirect employment opportunities. According to a recent study 2.2 jobs are created for every \$100,000 in local food sales.²²⁰ At capacity the facility could be expected to create over 400 jobs. The authors also estimate a regional economic multiplier effect of 2.6. At capacity and on a retail sales basis, the food hub would inject an additional \$60 million into the local economy (\$20 million wholesale ~ \$26 million retail x 85% not currently local x 2.6 multiplier). It was estimated that due to reduced distances for distribution, the hub could reduce carbon emissions by 2.4 million pounds per year.

TECHNOLOGY AND SOCIAL MEDIA

Door to Door Organics

Locations in Colorado, Michigan, Missouri, Pennsylvania, Illinois, as well as service to New Jersey and Delaware

Model: Distribution; Transaction Processing Platform

www.doortodoororganics.com

Door to Door Organics, a private company based in Louisville, Colorado, delivers certified-organic produce and natural groceries year-round to customers' homes and workplaces. Founded in 2004, the company has headquarters in Lafayette, Colorado; Livonia, Michigan; Kansas City, Missouri; Ottsville, Pennsylvania; and Chicago, Illinois; and serves customers in the surrounding regions. Customers can choose different boxes rather like an online CSA, with the option to substitute or add products using a web-based platform. Orders are then delivered to whatever location customers choose on their scheduled day of delivery. Shoppers also have the option of forming co-ops, where four or more orders are delivered to one location to save money on delivery costs. Schools, nonprofits, and religious organizations that form co-ops benefit by receiving a monthly donation check of 10% of each box sale.

In 2012, Door to Door Organics received a \$2 million Series A round investment from Greenmont Capital, a Boulder, Colorado-based investment fund. They have had a total of \$3.25 million in investments. The company has grown significantly from 24 employees in 2009, to 90 in 2010, 121 in 2011, 171 in 2012, and 245 employees as of summer 2013. Door to Door Organics offers a variety of positions at different skill levels such as Warehouse Packer, Warehouse Manager, HR Generalist, Social Media Master, and Location Manager. All jobs are paid about the living wage in their local communities.

²²⁰ Institutional Food Market Coalition. 2010 Program Report. Annual Report, Madison: Dane County Department of Planning and Development, 2010.

*AgLocal**Kansas City, Missouri**Model: Transaction Processing Platform**www.aglocal.com*

Founded in 2011 and launched in late 2012, AgLocal is an online exchange platform for the buying and selling of local, responsibly raised meats. The private company provides web services and a smartphone application to connect meat producers directly to wholesalers and distributor businesses, which in turn sell to retailers. Producers can create an online profile to attract customers and receive instant cash transfers for payments. Wholesalers and distributors can manage their payments online and track invoices electronically. Retailers can pay with instant cash transfers and credit cards and can advertise their businesses on the website for consumers, who can use the website to find locally raised, sustainable meats in their city at grocery stores and restaurants.

In June of 2012 AgLocal received \$1 million in Venture funding from Andreessen Horowitz, Open Equity Partners, and other private investors; and in August the startup closed on an additional \$500,000 in seed funding from Dundee Venture Capital, Artists and Investors, Serious Change Investments, and a private investor. They have since hired several engineers, expanding their staff to eight employees. Based in Kansas City, AgLocal has plans to expand to New York, Northern California, and Austin, and scale to 30 more cities within the year.

*Local Orbit**Ann Arbor, Michigan**Model: Cloud-based business and supply chain management tools**www.localorb.it*

Local Orbit is a private company based in Ann Arbor, Michigan. They provide a flexible, customizable suite of back office tools that support six core business areas: online ordering, transaction processing, inventory management, logistics, marketing and business analytics. The company also offers optional financial services that include low cost payment processing, invoicing institutional buyers, and remitting payments to sellers within a marketplace.

Local Orbit sets up custom-branded marketplaces for aggregators and Market Managers. Market Managers determine the business and delivery rules for the markets, and they also charge a fee for their services. They invite both sellers and buyers, who are primarily restaurant chefs and institutional food service purchasers.

Local Orbit's tools offer transparency and traceability from ordering through delivery. When an order is placed, e-mail notifications are sent, inventories are updated, and packing lists are generated automatically after the order is placed. The

producer name is attached to every document and message in the system, and the fulfillment tools offers lot-level traceability.

Local Orbit's model is to charge a base monthly service fee, plus a small monthly percentage on total sales. There are no fees for customers to shop. Typically, the Market Manager covers the monthly service fee and the producers pay the transaction percentage.

Local Orbit currently supports 25 markets managed by farmers, producer co-ops, food hubs, farmers markets, aggregators and independent distributors in California, Maryland, Michigan, Missouri, New England, Pennsylvania, Tennessee, Vancouver, Virginia, Washington and West Virginia. They currently have a staff of seven, with plans to add two more positions by the end of the year.²²¹

Good Eggs

San Francisco, California

Model: Transaction Processing Platform; Producer Software

www.goodeggs.com

Good Eggs is a private company started in late 2011 that builds websites and applications to help producers sell directly to consumers and wholesalers. The site offers producers a way to sell their products online without having to build their own site, similar to Etsy. Producers receive their own “web stand” describing the company and their products. Consumers and wholesalers can order on a one-time basis or subscription service, and Good Eggs coordinates the delivery directly from producers to pick up locations.

Good Eggs has 16 employees and is hiring for positions such as software engineer, community lead, programmers, and company leaders. The start-up, co-founded by Alon Salant and Rob Spiro, is currently located in the San Francisco Bay area, but has plans to expand to other cities including Detroit, Los Angeles, Brooklyn, and Portland, and aims to support thousands of local food vendors across the country. They have received investments from Baseline Ventures, Harrison Metal Capital, and a wide variety of private angel investors. Good Eggs will generate revenue by charging producers a small transaction fee on each order. Additionally, Good Eggs aims to foster community by listing food-related events (i.e. farmers markets) on its website, as well as sharing recipes, blog posts from famous foods such as Alice Waters, and advice on how to choose, store, and prepare ingredients.

²²¹ Local Orbit. Website “About” and “Features” pages.

FOOD INCUBATORS

Rutgers Food Innovation Center

Bridgeton, New Jersey

Model: Incubator, culinary training, processing

www.foodinnovation.rutgers.edu

Business incubators and small business incubators are trending and officials in New Jersey see them playing a vital role in the future of the state and region, in terms of jobs and economic development. The Rutgers Food Innovation Center incubator, a 23,000 square foot facility, houses shared-use food processing space for a broad array of products and processes, marketing capabilities and technical laboratories, distance learning and educational programming, and administrative space for staff as well as clients. The business incubator facility enables new companies to be formed, and provides a vast array of resources and technologies to existing food companies as well. This facility is designed for use by farmers and cooperatives, startup food companies, existing small and mid-sized food companies, and retail and foodservice.²²²

With the help of 11 full time staff, the Rutgers Food Innovation Center (RFIC) provides Technical Assistance (TA) through its Business and Mentoring Model; clients are charged \$100 per hour for time spent on their project. Topics of instruction and counseling cover the full continuum of a food business life cycle from Strategic and Business Planning, to Finance and Accounting, to Marketing and Distribution. The processing facility can handle a wide range of products employing: hot processing, dry processing, cold processing and cold assembly; and RFIC offers supportive TA on related topics such as: food safety, regulatory assistance, and quality assurance. They intentionally located their facility in Bridgeton, NJ to provide these services in the hopes of creating economic opportunity in this federal empowerment zone with a strong food history. This has led to the local governments recommitting to the culinary arts, and intentionally creating opportunities for investment. RFIC has made strides in the food industry in their community by:

- Training 106 unemployed Bridgeton residents between 2009-2011
- Certifying 1,000 food industry workers in food safety and other capacities between 2009-2011
- Partnering with local colleges and universities to provide 1,000 hours of mentoring to 11 next generation food industry workers

²²² Rutgers Food Innovation Center Website: <http://www.foodinnovation.rutgers.edu/index.html>, Accessed 3/1/2013

- Receiving a \$51,215 grant to work with the local Farm-to-School program and worked with farmers and food entrepreneurs to create locally grown and processed value-added items that met the nutritional and cost requirements for the National School Lunch Program²²³
- Encouraging graduated businesses, like Schar the world's largest gluten-free manufacturer, to build facilities in Bridgeton and employ residents²²⁴

CropCircle Kitchen

Boston, Massachussets

Model: Food business incubator

www.cropcirclekitchen.org

CropCircle Kitchen is a shared kitchen use commissary and culinary business incubator located in Boston. After taking over from Nuestra Culinary Ventures in August 2009, CropCircle founded a new non-profit that now supports roughly 40 culinary entrepreneurs and their new businesses. They provide support through technical assistance, oversight, and guidance through the first stages of creating a food business. Thus far:

- 100 companies have been born out of this incubator
- 15-16 that have graduated are operating on their own in the Boston area
- 200 local jobs have been generated from CropCircle businesses

The Kitchen includes roughly 3,000sq ft. of cooking space with stoves; convection and conventional ovens; ribbon blenders; 300sq ft. each of cold and frozen storage; significant dry food and equipment storage; and access to specialty processing equipment including a pasta machine and a blast freezer. Members and other companies that carry full health department, state, and federal certifications can rent all equipment, space, and time. CropCircle also offers their members' opportunities access to a broad marketplace with untested ideas and products, while still offering a supportive environment to grow. They are able to offer this access without much cost to their members by partnering with an eco-friendly distributor called FoodEx. They prize working locally and sustainably, building their local economy and striving to protect the environment by working towards becoming a zero-waste food facility.²²⁵

223 Edward J. Bloustein School of Planning and Public Policy. Community Economic Development Impacts of the Rutgers Food Innovation Center: Community Food Security and Economic Development. May 2012.

224 Islam, S. 2013. Personal communication regarding performance of Rutgers Food Innovation Center. Email correspondence dated February 8, 2013.

225 Ibid

Working within this model does present challenges. The kitchen space is approximately only half the size it should be, which means that for every 2-4 entrepreneurs they accept per month, they have to turn away 8-12. CropCircle is currently collaborating with others to see how they can meet this unmet demand. In the meantime, in order to keep kitchen costs accessible and sustainable, there is only one full-time employee.²²⁶ In order to generate more funds, CropCircle is looking into investments from large donors and exploring related ventures such as co-packing or testing kitchens. There is also the option of converting to an LLC, which would allow them to be a social venture and secure investors.

Agriculture and Land-based Training Association (ALBA)

Salinas, California

Model: Incubator, aggregator, distributor

www.albafarmers.org

The Agriculture and Land-Based Training Association is a food hub and social enterprise that advances economic viability, social equity and ecological land management among limited-resource and aspiring farmers. ALBA creates opportunities for beginning and minority organic farmers through education, demonstration and small-farm incubators supporting beginning farmers and healthy food systems. In order to support the marketing needs of farm-incubator participants, ALBA created ALBA Organics (AO) in 2002 as an earned-income social enterprise selling fresh produce from participating farmers. ALBA Organics aggregates fresh produce produced by ALBA program participants or graduates, as well as other regional small-scale producers – with more than 80% from socially disadvantaged farmers. It has successfully expanded sales serving a diversity of retail, foodservice and wholesale customers from Monterey to San Francisco, including Pájaro Valley Joint Unified School District, Alisal Union School District, Santa Cruz City Schools, Stanford University Dining, UC Santa Cruz Dining Services, Google, San Jose Civic Center, Dominican Hospital, Whole Foods Market, Veritable Vegetable, Greenleaf, and many others in the restaurant and wholesale sectors. Dozens of small farmers in the region have sold to AO. ALBA's capacity has grown consistently and is well established with ALBA Organics sales generally increasing 20-50% each year. In one of its recent best years, 2009, sales increased from \$514,412 to \$1,244,557, an increase of 142% that is currently sustained. Their business increased in all sectors, but most noticeably in the areas of wholesale and home delivery. Assets include delivery trucks; cold storage space/pallet racks/forklift; energy-efficient cold cases for leading retailers partnered with AO; and management, sales and delivery staff with approximately 85% of total salaries covered by sales income.

²²⁶ Creating Jobs and Business Through Food: CropCircle Kitchen (Boston, MA), Initiative for a Competitive Inner City- <http://www.icic.org/connection/blog-entry/blog-creating-jobs-through-food-cropcircle-kitch>

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