

COMMUNITY FOOD HUBS

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

EDWARD J. BLOUSTEIN SCHOOL OF PLANNING AND PUBLIC POLICY
RUTGERS UNIVERSITY
MAY 2012



PREPARED for ELIJAH'S PROMISE, THE RUTGERS FOOD INNOVATION CENTER, and NEW JERSEY COMMUNITY CAPITAL

MANY THANKS TO

Alena D'Auria, Rutgers Undergraduate
Margaret Brennan-Tonetta, Rutgers FIC
Lou Cooperhouse, FIC and F&S Produce Co., Inc.
Michael duBois, Rutgers FIC
Lisanne Finston, Elijah's Promise
Douglas H. Fisher, NJ Secretary of Agriculture
Lorena Gaibor, Unity Square Partnership
Kristina Guttadora, Farmers Against Hunger
Paul Helms, Elijah's Promise
Diane Holtaway, Rutgers FIC
Shoufiul Islam, Rutgers FIC
Albert Kelly, Mayor of Bridgeton
Wes Kline, NJ Agricultural Experiment Station
Stephanos Koullias, Western Queens Compost Initiative
Richard Ludescher, Rutgers SEBS
Tom Manning, NJ Agricultural Experiment Station

Jean Mahoney, Rutgers FIC
Bruce Master, Rutgers FIC
New Brunswick Community Gardening Coalition
New Brunswick Food Alliance
Christina Palassio, The Stop
Glen Patterson, City of New Brunswick Planning
Jack Rabin, NJ Agriculture Experiment Station
Mark Robson, Rutgers SEBS
Jaymie Santiago, New Brunswick Community Farmers Market
Skylar, Rutgers FIC
Tyler & Scott Thompson, XS Smith
Terry & Patrick Viggiano, First Fields
Frank Wong, Rutgers Facilities and Capital Planning

PREPARED BY

Edward J. Bloustein School of Planning and Public Policy, Rutgers University
Spring 2012 Community Development Studio

Max Azzarello
Anthony Capece
Michael Cassidy
Laura Chamberlain
Benjamin Faust

Sarah Franklin
Joshua Jensen
Emily Joiner
Benjamin Logue
Jacklyn McFarlane

Brandon McKoy
Matthew Sarsycki
Darius Scott
Charlene Sharpe
Carolyn Worstell

FACULTY

Kathe Newman
Associate Professor
Director of the Ralph W. Voorhees Center for Civic Engagement

May 2012

For more information, contact knewman@rutgers.edu

TABLE OF CONTENTS

Introduction	5
Food Hubs 101	7
Core Food Hub Functions	7
Food Supply Chain Coordination	7
Aggregation	8
Marketing	8
Distribution	8
Permanent Facilities	10
Other Services	13
Organizational Structure and Focus	13
Retail Food Hubs	13
Consumer Food Hubs	13
Producer Food Hubs	14
Non-profit Food Hubs	14
Community Food Hubs	15
Components of a Community Food Hub	15
Two Food Hubs – in Detail	20
The Context for Creating a Food Hub in NJ	23
Left Over Produce & Gleaning	26
Food Processing and Manufacturing in New Jersey	27
First Field Profile	27
A Food Hub in New Brunswick	28
Existing Community Food Infrastructure	28
Potential Community Partners	28
Potential Buyers	30
Related Services and Activities	30
Potential Food Hub Locations	31
Next Steps	31
Definitions	33
Acronyms	35
Works Cited	36
Image Credits	42

This page intentionally left blank.

COMMUNITY FOOD HUBS: COMMUNITY ECONOMIC DEVELOPMENT AND FOOD SECURITY IN NEW BRUNSWICK

Max Azzarello, Laura Chamberlain, Sarah Franklin, Emily Joiner, Benjamin Logue, Jaclyn McFarlane, Darius Dante Scott, Carolyn Worstell

INTRODUCTION

The Spring 2012 Community Development Studio worked with Elijah's Promise, the Rutgers University Food Innovation Center, and New Jersey Community Capital to increase food-related community development and to improve food security¹. The studio explored the potential to create a community food hub in New Brunswick. As the USDA defines it, a food hub is a "a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regionally produced food products" (USDA: Food Hubs, 2011). While there are many variations in practice, the core idea is to help small and medium-sized farmers reach wholesale and/or retail customers within their region and to increase access to locally grown fresh food.



Rosie's Farm Stand

There are at least 170 existing food hubs around the country and each looks slightly different depending on the context in which it emerged. Some food hubs focus on the core activities of food aggregation and distribution to streamline the food supply chain. Others provide a wealth of services to farmers to grow their businesses. Community food hubs provide a slight variation on this theme by adding services to achieve social, educational, community economic development, and community food security outcomes. They may provide education and job training, courses in food preparation and processing, summer internship programs, health classes, and some providing training on adjacent urban agriculture projects that include urban farms, high tunnels, and aquaculture.

¹ Elijah's Promise is a community based organization in New Brunswick that seeks to alleviate poverty and hunger by providing job training, small business development, education, jobs, and services. The Rutgers Food Innovation Center is an award winning food processing business incubator located in Bridgeton, New Jersey. The center provides an array of services to food related entrepreneurs and helps local communities and the state to grow food-related business through value-added production. New Jersey Community Capital is a community economic development financial intermediary that helps community organizations access capital to revive neighborhoods. Ag in the City is a new statewide urban agriculture organization.

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

The interest in food hubs comes amidst an explosive demand for locally grown fresh food, a desire to improve food security, interest in improving public health outcomes by improving what people eat, and creativity about reviving local economies through food. On the production side, the number of small farms has been growing. To ensure stability and increase production and sales, smaller growers need larger markets (Diamond & Barnham, 2012). Virtually all food distribution occurs through large distributors, food brokers, and grower agents which and it is often hard for smaller farmers to access these networks (Illinois Department of Commerce and Economic Opportunity, 2012). Since produce is often sold to buyers at large terminal markets, food may travel vast distances from farms to wholesale markets, and then again from markets to stores (Swedson, 2008). While farmers' markets enable farmers to directly reach consumers, farmers markets are often focused on small retail buyers and farmers find that moving the produce to the market and spending the day at each market is an expensive time consuming affair. Food hubs expand these efforts to reach larger scale wholesale consumers and provide services that farmers need. They work to get local produce to market to meet the increasing demand by the consumer.

Crafted with community goals, they can improve community food security and enhance community economic development. More and more people are concerned about what they eat and many demand locally grown foods and/or access to fresh produce. Ninety percent of consumers would buy local produce if it were readily available (Illinois Department of Commerce and Economic Opportunity, 2012). While some communities and regions have reoriented food markets to consume food closer to where it's grown, others have not. More than 23 million people in the United States lack access to fresh food and more than half of those people are low income (USDA: Food Deserts). Lacking access to fresh affordable food can contribute to obesity, diabetes, and heart disease, among other health concerns and there is growing interest in improving access to healthy produce for all and especially for those who most need it.

Addressing these issues can provide an array of local and regional economic benefits. The challenge is to organize the food supply chain in ways that facilitate the connection between consumers and growers to maximize benefits for all. A shift toward greater production of fresh market vegetables can yield greater revenues for local farmers (Illinois Department of Commerce and Economic Opportunity, 2012). The benefits of increasing local production extend beyond the farmers. Small-scale farms circulate money nearly twice as much as larger farms (Swenson, Eathington, & Chase, 2007). If consumers increase their consumption of local foods, they can return economic benefits to their communities. In a population of 130,000, for instance, if everyone consumed five locally-grown fruits and vegetables each day for the three months they are in season that would create 475 jobs and more than 6 million dollars of labor income (Swedson, 2008). Consuming more fresh produce may provide health benefits and reduce health costs. And reorienting the networks between farmers and consumers may reduce environmental costs of moving food over long distances and reduce the wear and tear on local highways as food is moved from place to place through complex distribution networks.

In this report, we outline the food-related problems facing farmers and cities alike, examine the existing food economy in New Jersey, explore what food hubs and community food hubs are, and consider how they might work in New Jersey. The studio team reviewed reports and explored existing food hubs. We identified food hub challenges and benefits and researched the process communities use to create their food hubs. Since what a food hub is and how it works is context specific, in the second half of the report, we examine the existing food infrastructure in New Jersey, specifically addressing the state's food economy challenges and opportunities. We conclude by highlighting ideas that emerged through the research process and suggest some next steps.

FOOD HUBS 101

Food hubs are local or regional wholesale/retail markets that connect farmers to consumers. While existing food hubs provide a variety of services, they are oriented around a core effort to streamline local food supply chains to help small and mid-sized farmers (that often lack resources to access to or compete in larger distribution networks), and to increase local access to fresh food. The number of food hubs grew exponentially increasing from 45 in 2000 to 170 by 2012. There are food hubs in 34 states (USDA: Overcoming Barriers, 2012). While there are none in New Jersey, there are five in New York: GrowNYC-Hunts Point Wholesale Farmers Market in NYC, Hudson Valley Fresh in Poughkeepsie, Regional Access in Ithaca, Central New York Bounty in Morrisville, Central New York Regional Market Authority in Syracuse, and the Good Food Collective-Head Water Foods in Rochester. And there are three in Pennsylvania: Common Market in Philadelphia, Lancaster Farm Fresh Cooperative in Leola, and Tuscarora Organic Growers in Hustontown (Wallace Center). Food hubs come in a variety of sizes. Local food hubs work with a few farmers in a small area; regional food hubs may work with growers in a large regional food shed that spans several hundred miles. The main idea is that the food is grown close enough to the hub so that fresh produce can be consistently delivered to consumers via ground vehicle.

Core Food Hub Functions

Food hubs may aggregate and distribute food, offer a variety of processing services, and host retail markets. To be called a food hub, the USDA includes three core components: active coordination, aggregation and distribution, and permanent facilities. Below we discuss each of these components and examine how they work in existing food hubs.

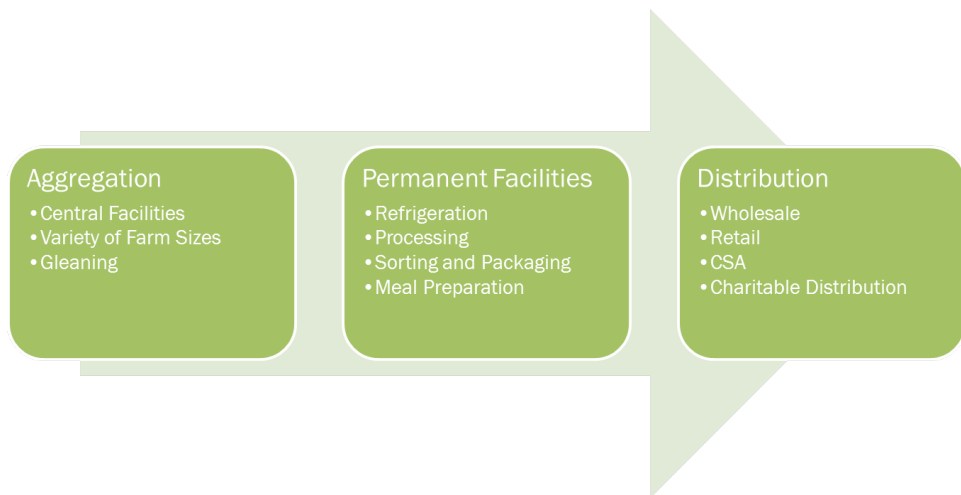


Figure 1: Supply Chain Coordination, 2012 CD Studio

Food Supply Chain Coordination

Food hubs coordinate food supply chains, moving food from field to table more directly. They facilitate relationships between farmers and wholesale buyers to return a greater economic return to farmers and lower prices for consumers. Food hubs widen the opportunities for small and medium sized farmers to deal with institutional buyers like schools and hospitals by creating the networks and markets linking the two. Historically, agricultural cooperatives coordinated supply chains for farmers. In the cooperatives, farmers own shares and funnel their produce through the cooperative. Cooperatives are designed to help established farmers aggregate, market and distribute their produce. Food hubs use a more informal network, which gives farmers flexibility in deciding what to sell. Farmers can use a diverse market channel mix to balance risk. The food hubs are not obligated to take all of their members' production, and can balance their stock based on their customers' needs and preferences (Diamond & Barnham, 2012).

Aggregation

Food hubs aggregate (bring the produce to a central location) locally and regionally produced food, which facilitates its sale to wholesale buyers. This helps smaller farmers because they may not provide the diversity of food on their own, have time to develop relationships with buyers, and they may lack resources to wash, pack, and grade their products, or move product from place to place. Some food hub aggregators allow buyers to see the produce themselves while others facilitate direct buying over the Internet. Food Hubs bring food together from many farmers, which makes it more attractive for large scale buyers. For example, a large university system, school district, or even soup kitchen would have a hard time building relationships with all of the individual farmers that could sell them produce. It would be difficult to get that produce from the farmers, process it in the ways the institutions need it, and ensure that the food is safe. Food hubs offer a bridge between the farmer and consumer by aggregating the produce and providing services that help purchasers and sellers alike. The Food Hub as aggregator can build the relationships with farmers and with buyers. They can learn the needs and limitations of each and build relationships that help farmers expand their production while ensuring that buyers get the products that they seek to purchase.

Marketing

Hubs help to brand and market locally produced food. Some ensure traceability, the ability to accurately identify the location and even the farmer who grew the food which is critical to driving buyer and consumer demand. Food hubs can help small farmers market their produce and preserve the links from farm to table through signage and individualized packaging such as stickers, stamps, or twist ties. Red Tomato, a nonprofit run food hub, markets its Eco Apple brand of apples through individualized packaging; each bag of apples describes the farm that grew the apples. The Oklahoma Food Cooperative (OFC) maintains identity preservation through labels that include farmers names, and links to farmers websites where they can read about the farmer and sometimes even the farm animals (Diamond & Barnham, 2012).



Jersey Fresh branding

Distribution

Distribution is the process of moving goods and services from one location to another using some form of transportation such as truck, rail, or boat and it is one of the biggest challenges to re-connecting local food producers with consumers (Diamond & Barnham, 2012, p. 4). For food hubs to move food from farm to consumer more directly, they need an efficient and effective distribution system to get the food from the farms to the hub and from the hubs to the consumers while maintaining food quality. To get the food to the hub, farmers can bring produce themselves, pay someone to come to the farm, pick up the product and deliver it, or the food hub can run a service to pick-up food from farmers. Refrigeration throughout this process is important especially during hot summer months.



FIC distribution

Food hubs use multiple means to distribute food to a wide variety of customers. Large buyers and restaurants may want their orders delivered. A distribution service is one of the most important requirements to making fast, on time, affordable deliveries from the farmer to the public (The Common Market, 2008). Food hubs can create their own distribution network like the Local Food Hub in Charlottesville, VA which has its own fleet of refrigerated trucks and delivers food from its hub to buyers (USDA: Overcoming Barriers, 2012). Other hubs might distribute through existing companies. But some institutional and/or retail buyers may want to select their own food onsite. Some food hubs sell retail at small

markets within the hub or through small farmers' markets. Hubs may also use a traditional Community Supported Agriculture (CSA) approach, allowing consumers to purchase produce shares. Co-op Partners Warehouse in Minnesota aggregates local fruit which it delivers to regional CSAs to supplement their shares (Diamond & Barnham, 2012).

As discussed earlier, food hubs require aggregation and distribution. There are several strategies implemented to achieve these means. For aggregation, there are basically four means of transporting locally-grown foods to the central hubs. Farmers can deliver their goods to the market, hire a trucking company to transport the goods, sell to an independent food distribution company, or have the food hub purchase the products directly.

Today, many farmers use their own privately-owned vehicles to transport their products to the market. This system allows the growers to personally oversee the marketing and sales of their goods at the market, but costs them time away from their farms, frequently equating to reduced productivity in the long run. This situation is less than optimal for many small- and medium-sized farms that do not produce enough to make frequent trips to central hubs profitable. The lack of an economy of scale makes other options more desirable for many growers. The next option is for a trucking service to come to the farm and pick up the products for delivery to the market. This option frees the growers of the need to personally transport the food, allowing them to tend to their farms without interruption. This benefit does not always outweigh the cost, however, and can make this option infeasible, especially for farmers who need to ship their goods over large distances to reach the hub. The third option is to use an independent intermediary company. This company purchases the foods from several farms in a given area and combines it to serve the bigger buyers. It typically pays the farmers more than they are able to get from the wholesale market while remaining price conscious of what food hub visitors are willing to pay. This method increased demand for locally-grown foods as it enables small-sized farms to partake in sales to large institutions that they would otherwise be unable to provide for. 100km Foods Inc. works in this way to serve The Stop Community Food Centre in Toronto (100km Foods Inc).

Finally, we noted that some food hubs purchase the produce that they sell directly from the buyers, picking up the food as part of the arrangement. The local Food Hub in Charlottesville, Virginia is one such hub. They state that they are a source of consistent sales for the local farms, stabilizing the market while alleviating the farmers of the burden of transporting food (Local Food Hub, 2010). Veritable Vegetable in California performs a similar role, aggregating from numerous farms and shippers in order to fill orders from small family needs to university and hospital demands (Veritable Vegetable).

Permanent Facilities

Larger food hubs provide the permanent facilities necessary for the aggregation and distribution of food as well as space for other services such as storage, processing, meetings, and education. These facilities enable the food hub to better coordinate the food supply chain, getting food from small farmers to large institutions. While important, facilities often develop aggregation and distribution networks before developing physical facilities.

Freezer and Cold Storage

Freezer and cold storage is a crucial element in a permanent facility. Storage allows for an extended season and creates an off-season revenue stream for farmers. Unlike value added production, the proper use of storage allows for fresh produce well after the growing season has ended. Freezing is a more extreme form of cold storage. With freezing, produce is first blanched and then immediately flash frozen. The process essentially halts any natural breakdown of the food, extended the use of the produce. With cold storage and freezing, many farmers do not have immediate access to such facilities, due to lack of space and expensive equipment. Another issue is the intensity of the storage. For cold storage and freezing to succeed and keep proper temperatures and humidity, constant observation is a must. Many farmers simply do not have the time and resources for such storage and a separate facility is needed (Illinois Department of Commerce and Economic Opportunity, 2012). In a separate facility most storage is rented based on the service provided. Rates are broken down by dry, cold and frozen storage. Since cold storage and freezing requires more energy and is more expensive, the rates reflect this with higher fees for this storage (Mad River Food Hub, 2012).

Processing

Hubs can incorporate two distinct forms of processing. First, cold line processing is the post-harvest handling of produce and its packaging. This might include washing, sorting, and packaging. Consumers, including large institutions, demand that produce is processed. For example, lettuce needs to be washed, cut and packaged to make it appealing to buyers. Despite a growing desire to buy local produce, many are turned off by the lack of consistency in grading and packaging (Market Ventures, Inc., 2007). But most small farmers lack the resources to prepare food for market in this way and many farmers lack access to facilities and/or resources to transform their raw produce into products that wholesale purchasers seek. There is a lack of centralization in facilities making it difficult to grade, handle and package all in one facility. Decentralization also means that while some farmers can package or wash, but do not have a grading line (The Common Market, 2008).

Second, value added production allows farmers to transform raw produce into other products. They might extend the harvest by freezing, canning, or dehydrating food for the winter. Or they might create entirely new products using their produce. If food hubs incorporate a sufficient amount of refrigerated space, they may be able to process food at a large scale for sale in the off season. They can do this through freezing food or canning it. The freezing option is considerably less expensive and requires a less cumbersome processing facility than canning (Illinois Department of Commerce and Economic Opportunity, 2012). Dehydration reduces the moisture, which causes microbial growth, in produce. With less risk of rot, dehydrated produce has a longer shelf life. Other benefits of dehydration include reduced weight and shipping costs, and an eliminating for refrigeration. Most fruits and vegetables can be dehydrated as well as meats, dairy (powdered milk) and edible flowers. The process can involve a simple batch dryer, that includes fans and ventilation or a more costly freeze drying system, which requires vacuum sealing and freezers (Illinois Department of Commerce and Economic Opportunity, 2012). Canning, jarring and pickling, like dehydration, increases the longevity of produce. Although effective in preservation, there



FIC bottling

is a higher risk of contamination, especially when compared to other processing methods. Requirements and regulations are much stricter for such preservation processes (Endres, Tarr, Endres, & Johnson, 2011). Canning can be done on two scales. Small-scale preservation may use traditional methods, such as water baths, while large commercial canning requires a continuous system of pressure cooking and quick cooling (Illinois Department of Commerce and Economic Opportunity, 2012). Food hubs might also incorporate baking. Baking is the processing of grains into goods such as breads and baked goods. Despite having a short shelf life than other processed goods, there are fewer

restrictions on baked goods (Endres, Tarr, Endres, & Johnson, 2011).

A food hub can incorporate a processing facility to meet these different needs. They can create a space to prep food for farmers to make it ready for wholesale clients. But they could also create a space for value added production creating and marketing entirely new products much like the Rutgers University Food Innovation Center. The New York City Farmers' Market Survey asked farmers in the New York metropolitan area about their interest in using a wholesale produce market in the city. Farmers were considerably more interested in using the facility if it included processing, cold storage or a full processing line. They view processing as a chance to "increase sales..." (Market Ventures, Inc., 2007, p. 58). The needs for processing can be as simple as extra storage space and freezers to use of a commercial kitchen, allowing access to proper equipment.

Food Processing and Food-related Economic Development

Food hubs can also incorporate technical assistance and facilities to grow food processing businesses. They can host food based business incubators, incorporate commercial kitchens, provide co-packing services, or do all of those things. We begin with the food incubators, which provide business and food technical assistance and the physical space and equipment to create value added products. Innovation centers can be organized as non-profit organizations, run by universities or government, or they can be for profit enterprises. Non-profit and university sponsored approaches are best for low-income businesses with initial starting fees. For profit structures allow for marketing strategy and business consultation, along with access to equipment but only with the right amount of resources (Sanders & Shattuck, 2011). Because of the wealth of services provided, food innovation centers create a higher potential success rates in new businesses. With a higher potential, there is a greater attraction to use the facility. The facility is not limited to only farmers and can attract other users. With local business growing, the community as a whole can benefit from more potential jobs (Illinois Department of Commerce and Economic Opportunity, 2012).

Some food hubs incorporate commercial kitchens. Most commercial kitchens do not offer the technical support that is available at an innovation center but rather allow farmers and small businesses access to a certified kitchen with equipment. The commercial kitchen allows for a low-rent space but there are other considerations. Some existing commercial kitchens lack storage space for ingredients and finished products. Ingredients usually have to be moved from farm to facility every time the facility will be used. Finished products need to be stored in a Board of Health approved facility. So farmers or businesses that lack approved space often struggle to find such space. Products that need refrigeration



FIC storage

or freezing also suffer from lack of space and resources (Scully, 2009).

To make local produce appealing to wholesale buyers, many food hubs offer packing and re-packing services which include refrigeration and frozen storage, grading, tables and a system to prep and pack food that includes washing and a system to ensure food safety, and provide traceability so that consumers know which farm the food came from. The Illinois study (2012) suggests that food hubs may create a competitive position for themselves by opting to maintain the highest level of food safety. “The USDA offers the Good Agricultural Practices and

Good Handling Practices...audit verification program, which focuses on the practices used to produce, handle, and store fresh fruits and vegetables with the utmost safety precautions to help minimize microbial food safety hazards” (Illinois Department of Commerce and Economic Opportunity, 2012, p. 19). The Rutgers Fall 2011 Food Studio (RU Community Development Food Studio, 2011) found that Rutgers food buyers follow a strict safety protocol for purchasing food. A food hub can work with growers to ensure that their food meets these guidelines, maintain those standards through the aggregation and distribution systems thus making them more appealing to wholesale buyers. Enhancing this system by ensuring traceability will further enhance the competitive position since many buyers want to assure their customers that the products are indeed from local growers. Co-op Partners Warehouse in Minnesota found that restaurants turned to them knowing that they reliably sourced local produce (Diamond & Barnham, 2012).

Food Hubs may wash and pack or re-pack the produce into containers based on consumer needs. Some food hubs are reluctant to grade produce because they do not want to increase waste. Food grading requirements a stringent and food that might be ok to eat but does not meet precise size or other requirements won't be sold. It will likely depend on the needs of purchasers. If grading is a requirement for selling, then it might be possible to incorporate a processing facility within the food hub with plans to transform produce that isn't sold into other products and to ensure other produce's movement through the emergency food system.

Food hubs might operate as co-packers or support the development of co-packers near the hubs. Co-packers reproduce what a client wishes – they make more of a product. A hub that focused on co-packing that ensured food product traceability and worked in partnership with local producers is needed in New Jersey. Some small producers want to be involved in and monitor every step of production (Viggiano & Viggiano, 2012). Small farmers and businesses simply do not produce enough to meet such high minimum standards (Scully, 2010). For those businesses that have expanded and need more space, there is interim production available. Similar to the idea of co-packing, interim production is a more hands on approach to production. Rather than having a co-packer produce a commercial good, interim production allows a business to rent out a larger space for an extended period of time. The facility will lease the equipment and space, but does not provide the labor, which is the responsibility of the company. This model only works for expanding companies with the resources to operate a larger facility but still too small for a facility of their own (Babcock, 2008).

Other Services

Food hubs offer other types of services. The Illinois (2012) food hub study notes that hubs can also provide technical assistance for growers, create teams of harvesters to help farmers get their produce to market, develop private label brands, and facilitate financing. Many of the food hubs profiled in the recent USDA study note that the hub partners often work with farmers to use less harmful farming methods by introducing less intrusive farming techniques and less hazardous approaches to address insect and fungus problems.

Organizational Structure and Focus

Food hubs are organized in a variety of ways depending on who formed them and why. There are four basic categories: retail, consumer, producer, and nonprofit (Diamond & Barnham, 2012). There is no one “best” model for food hubs; the decision about the structure of a food hub should be driven by input of its stakeholders and partners, grower needs, community culture, existing leadership, and financing opportunities (Illinois Department of Commerce and Economic Opportunity, 2012).

Retail Food Hubs

In retail-driven food hubs, retailers work with networks of farmers to supply seasonal produce and other food products to local grocery stores, restaurants, buying clubs or co-ops. Food cooperatives or other food retailers assume distributional functions to compete and meet their customers demand for fresh local food. Generally for-profit organizations, retail-driven food hubs pay close attention to the bottom-line trying to generate more profits for stakeholders. The focus on producing a profit makes most retail-driven food hubs economically sustainable after the initial startup costs. The downside to the for-profit models is that these food hubs are usually not eligible for grants and can be subject to corporate tax rates (Illinois Department of Commerce and Economic Opportunity, 2012).

Example of a Retail Food Hub: The Wedge Co-op – Minneapolis, Minn.

Established by a group of neighbors in 1974, the first Wedge store was in a basement apartment. Today, in a much larger space, the co-op offers a deli, bakery, as well as services including classes for the community and a wholesale network to distribute local produce through the region. The co-op also runs Gardens of Eagan, a local organic produce farm in the metro area. In 2008, the Organic Field School was established as an on-farm facility to educate farmers, policy makers and the public. An elected board of officials runs the business and oversees financial and future goals. Members are encouraged to attend board meetings, to add input and offer recommendations to create a thriving community and business (The Wedge Natural Foods Co-op, 2012).

Consumer Food Hubs

Consumer-driven food hubs are typically online buying clubs that link consumers with producers. In these “virtual-hubs” a group of consumers operate as the aggregator and distributor. Consumers choose what products they want to purchase at wholesale prices using online ordering forms. Group orders are delivered to an aggregation point, such as a church, and the group separates individual orders and distributes them.

Example of a Consumer Food Hub: Oklahoma Food Coop – Oklahoma City, OK

The Oklahoma Food Co-op is an online buying club. Completely volunteer staffed, the co-op survives on membership fees and 10% charges to the producers and customers for the service. Starting with the first of each month, members decide what they want to purchase based on the available product list, usually over 4,000 products. All products are grown or made in Oklahoma. The co-op does not purchase any of the produce, but rather acts as a distribution services for local producers, who set their own price. The purchase period closes the following week with deliveries the third week of the month. Deliveries are usually made to designated spots throughout the state; for a fee, there is personal home delivery in certain metro areas (Weissenbuehler, 2012).

Producer Food Hubs

Producer-driven food hubs are either an individual or a group of producers that carry out their own aggregation and distribution functions. Producers have greater control over their supply chain. Producer-driven food hubs allow small scale farmers to work with larger institutions by aggregating the produce of several small farms to meet demand. Producer-driven food hubs, often cooperatives, necessarily have the strong support and buy-in of the producers, who all have an equal voice in decision making. The group nature of the decision making can be an asset to a food hub, but it can also hinder the timeliness of those decisions (Illinois Department of Commerce and Economic Opportunity, 2012).

Example of a Producer Food Hub: New North Florida Cooperative

Created in 1995 by a group of farmers, the New North Florida Cooperative provides education about how to sell at farmer's markets and roadside stands and markets the farm to school programs. The co-op's goal is to increase the reach of local farms to increase profits. It is responsible for marketing, processing, and distribution for the farming members. Florida A & M University provides technical assistance. With the increased demand by local school districts, the co-op built a processing shed that included refrigeration, washing sinks and a cutting machine, allowing for improved produce quality (University of Florida - IFAS Extension, 1999).

Non-profit Food Hubs

Most of community food hubs are organized by nonprofit organizations. Non-profit food hubs assist small and medium-scale producers by providing them with distribution and marketing services and opportunities to create new wholesale markets. Most have boards of directors and professional staff who run the organizations day-to-day. Volunteers help run the markets and/or provide services. This is the most flexible and inclusive structure, and one that often supports the most community and support services. Due to their non-profit nature, these food hubs are able to more easily receive funding on an ongoing basis through private foundations, government grants, and individual donors. This funding structure allows nonprofit food hubs to experiment with new models without the restrictions of the traditional short-term profit/loss business model. The downside, however, is that most nonprofit food hubs are more dependent on grants than the other food hub types like producer driven cooperatives which could have implications for the long-term viability of their operations (Diamond & Barnham, 2012).

Example of a Non-profit Food Hub: Red Tomato – Plainville, MA

Established in 1996, Red Tomato was initially a conventional distribution service to connect local farmers with consumers. But this system was not working on such a local scale and they began to "concentrate on managing logistics through a network of farmers, independent truckers, and wholesale partners" (Red Tomato, 2012). They also began to focus more on marketing and branding to create more visibility

with consumers. With creating a brand and working with the already established infrastructure, Red Tomato produce is in over 200 retail stores in New England and New York with over 40 farms and orchards contributing produce. Red Tomato also created a network that allows farmers to work with food scientists to improve and develop sustainable growing techniques (Red Tomato, 2012).

Outcomes

The food hubs appear to be increasing opportunities for small and mid-sized farmers to sell their produce, which may allow them to stay in business and/or expand. Food hubs are meeting a few needs – missing distribution systems for small and mid-sized farmers, providing programs for consumers and producers alike, and supplying healthy options to areas that might lack access to food. The USDA's recent survey of food hubs found that more than 40 percent of the ones they surveyed were in what they described as “food deserts” (USDA: Overcoming Barriers, 2012). They are not themselves major job generators. The USDA's recent food hub study found an average of 7 full time staff, 5 part time, and another 5 volunteers (USDA: Overcoming Barriers, 2012)

Community Food Hubs

Community food hubs (CFHs) provide the same core activities as food hubs and they also seek to develop community economic development and community food security outcomes. While moving food locally, CFHs also provide job training and education, processing to develop small businesses, facilitate value-added production, and save food for the winter, and teach a wide array of courses related to these topics (Sustain, 2009). While community food hubs have the same aggregation and distribution services as food hubs, they work more intensively with community groups to get fresh and healthy food to lower income residents. Some community food hubs distribute healthy affordable food through soup kitchens, shelters, clinics, non-profit community based organizations, and into corner stores. They think creatively about where people purchase fresh and prepared food and how they might make other fresh or well-prepared processed food available. Community food hubs may use their spaces as community spaces. Community kitchens can provide a place for learning and processing to enable community gardeners to save produce for the summer, to provide culinary training to better enable people to use local raw ingredients, and to facilitate the development of small food-related businesses.

Components of a Community Food Hub

The “community” aspect of a community food hub can be achieved through various types of programs and operations. The focus of these additional services depends on the mission of the community food hub. Some concentrate on business incubation, education and training; others focus on community outreach with nutrition classes. Below is a list of some services that community food hubs can undertake.

For Producers

Auctions and wholesale markets - Much like regional food hubs, community food hubs often primarily serve as an auction site or wholesale market. Grow NYC's Wholesale Greenmarket, for example facilitates connections between regional farmers and large-scale buyers, usually food retailers, institutions, restaurants, distributors and even individuals looking to buy in large quantities (GrowNYC: Wholesale, 2011). At the Weaverland Produce Auction, individuals and organizations can buy from hundreds of farmers through a bidding process. The auction operates six days a week and prides itself on the community aspect, where buyers and producers get to know each other by working together regularly (Greensgrow Farms, 2011).

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

Advocacy – Beyond technical support, community food hubs can be a center of advocacy for farmers, processors, and food business owners by creating networks between these interests, providing a meeting space, and generally increasing the presence of smaller local farms and food entrepreneurs in the community.

Business support services – Along with technical training, a community food hub can provide business support. These services involve advice on processing, branding, budgeting and other such necessary tools for farmers, producers, and food business owners. Food hubs may support the producers they serve through marketing campaigns. In 2011 The Detroit Eastern Market spent approximately one third of its operational budget on marketing (Eastern Market Corporation, 2011). Great Falls Food Hub in Vermont incorporates business support to accomplish one of its larger goals of “supporting local farmers and food artisans who feed us” (Great Falls Food Hub: Mission, 2012). The business incubator at Great Falls includes business plan development, processing and marketing support, and financial counseling (Great Falls Food Hub: Efforts, 2012). These support services bring the necessary framework for a community food hub to become an effective economic presence.

Cold storage – A major issue for food aggregation, storage, and distribution of produce is the availability of cold storage. Community food hubs can use cold storage to address the needs of local community service organizations. Local and regional food banks as well as local soup kitchens often lack cold storage. Setting aside cold storage at a community food hub for emergency food providers can ensure that fresh produce reaches lower income residents. Cold storage could make better use of gleaned produce and reduce spoilage.

Direct to consumer sales - Community food hubs may provide a retail space for farmers and food entrepreneurs. This type of market may be in the form of a traditional farmers market, such as those at GrowNYC and The Stop Community Food Centre, where producers sell directly to consumers. Community Supported Agriculture programs (CSA), which are becoming increasingly popular across the country, also allow consumers to purchase their fresh produce up front for the season and reduce the farmer’s financial risk associated with agricultural production. CSAs may be organized and distributed by the farmers themselves, or community food hubs can serve as an aggregation and distribution site. Phat Beets’s food hub, for example, is primarily based on a CSA program, in which it culls produce from many local farmers and distributes their “Beet Boxes” to members at various pick-up locations (Phat Beets Produce).

Online community – Community food hubs do not need to be limited to a physical hub. Technological innovations and the proliferation of social media can extend services to people who would otherwise be unreachable. Community food hubs can create an online network that connects local farmers with one another and with institutions, restaurants, food retailers, and individuals. This online network can connect members to support, technical training and other resources.



Figure 2: Components of a Community Food Hub, Spring 2012 CD Studio

Processing facilities – The ability to add value to produce through processing, even light processing, can increase sales for farmers, create a demand for processing jobs, as well as extend the shelf life of local foods. A community food hub is an ideal place for processing facilities that help connect the needs of local farmers, economic development, and healthy food access. Processing at a community food hub can be at a relatively small scale, and serve as a step towards more industrialized and permanent processing for clients in the future. Located in Waitsfield, Vermont, Mad River food hub is a wholesale distribution, storage and processing facility. The facility is 4,000 square feet, which includes areas for meat processing, vegetable and herb processing, a smoke room, dry and cold storage, and freezer space. The hub is licensed by the Vermont Department of Agriculture and the Vermont Agency of Agriculture for Meat Processing. Rates for use include daily rental space for processing and monthly storage rates. Facility staff provide valuable business consultation including Hazard Analysis & Critical Control Points (HACCP) planning. Distribution is offered to connect the products produced at Mad River to the rest of the state, using 26 foot refrigerated trucks with hydraulic lifts, allowing delivery flexibility (Mad River Food Hub, 2012).

Technical training – Job training can encompass growing techniques for farmers, training for entering food processing, and even kitchens for culinary and baking training. The type of technical training depends on the location, size, and scope of the community food hub. D.C. Central Kitchen, for example, has a culinary training program to prepare students for jobs in the food industry by offering cooking classes, ServSafe Food Protection Manager's certification program, as well as other job-readiness skills such as resume writing, computer literacy and interviewing techniques (D.C. Central Kitchens: Job Training).



Kitchen training program

For the Community

After school/child care - Although child-care is not often included in community food hub programming, it can be a great way to increase community involvement. The Stop Community Food Centre provides an after school program and a summer camp. This program provides a service to parents and an educational space for children who learn about growing food, cooking and nutrition (The Stop: After School).

Advocacy – As a community meeting place with a focus on food, a community food hub can be the perfect space for healthy food, food security, and social justice advocacy programs. One of The Stop Community Food Centre's major program areas is the Community Action Program (CAP). The CAP includes community action training, which provides community members with information about the causes of poverty and inequality and the means to reverse them (The Stop: Community Action). Just Food also works as an advocate by holding meetings through which community members were able to contribute their voice to a federal level food policy platform, which is now moving forward (Just Food, 2011). Community food hubs may also serve as a community advocate more indirectly simply by having a presence and serving as a voice for producers and consumers.

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

Alternative payment plans – Increasing healthy food access to those with low incomes is a very important social issue. Community food hubs can increase access by accepting EBT [Food Stamps] as well as other payment plans. Grow NYC accepts EBT at forty-three of its Greenmarkets, which allows greater numbers of people to access the fresh market and simultaneously increasing revenue for farmers as more people are able to buy their goods (GrowNYC: EBT, 2011). Alternatives can include volunteer discounts or participating in a CSA. Phat Beets Produce, for example, works with its senior and low-income CSA members to arrange personalized payment plans that best suit their needs, as well as accepting EBT (Phat Beets Produce).

Community kitchen - A community food hub might consider a kitchen facility. The Stop Community Food Centre provides community “drop-in” cooking classes geared towards parents, seniors, children or anyone who is interested in honing their cooking skills, and learning about healthier eating habits. It is a place for community members to socialize and share their skills (The Stop: Community Cooking).

Composting – GrowNYC in New York City incorporated a composting program into its comprehensive food hub in March 2011. Since then, they have collected nearly 400,000 pounds of food scraps for composting. Residents are encouraged to bring their compostable materials from home to any of 11 Greenmarket sites in Manhattan, Brooklyn and Queens. Commercial food scraps aren’t currently accepted, but they can recommend food waste haulers for anyone who wants to compost large quantities of food scraps (GrowNYC: Compost, 2011). Besides the benefits of transforming food scraps into compost, which can be used in community gardening efforts, composting in a community food hub provides opportunities to teach children and adults about the food system and how the composting process works. The Stop Community Food Centre in Toronto incorporates a compost demonstration center into their 3,000 square foot greenhouse with three primary goals: “to divert food waste from landfill, turn it into a rich growing medium for greenhouse plants, and to teach the value and methods of composting” to greenhouse visitors (The Stop: Compost, 2011). They use large composting units directly on the ground and/or vermicomposting (or worm composting) bins. The Stop boasts that they did not need to purchase any soil or compost in the entire 2011 season, which saved 5,480 dollars (The Stop: Compost, 2011).

Similar to The Stop, the goals of the Western Queens Compost Initiative are threefold: to “provide sustainable local composting infrastructure; educate New York City residents on the composting process and encourage them to compost organic materials; and reduce the amount of waste sent to distant landfills” (WQCI). The Compost Initiative, which is entirely run by volunteers, collects food scraps as well as lawn clippings and leaves, and at several locations in Queens including the Jackson Heights Greenmarket, Socrates Sculpture Park (both of which are in conjunction with GrowNYC), the Brooklyn Grange Rooftop Farm, and several community gardens (Koullias, 2012). As the organization is not-for-profit, all finished compost material remains on site (Koullias, 2012).

Compost facilities – Looking at the entire food system is important for a community food hub. Composting facilities provide a community with appropriate disposal options for their discarded food. The compost can be sold for local gardens. Composting programs also encourage communities to think about the entire food system.

Cooking or nutrition classes – Learning the nutritional value and how to prepare locally grown food is very important for communities that previously had limited access to healthy and local food. Classes like these build a sense of community and give community members opportunities to become comfortable preparing and eating the food provided by local farmers.

Demonstration gardens/farms – In addition to storage facilities, community food hubs can have demonstration gardens and farm plots. These plots are mostly used as educational tools, providing space for technical training for farmers, classes for potential urban growers, and an educational and demonstration space for school children. Co-op Partners Warehouse in Minnesota purchased a 100-acre organic urban fringe farm, which sells them food and they run the farm as a farming field school (Diamond & Barnham, 2012).

Food bank – With the recent economic downturn, emergency food services are more important than ever before. A community food hub can be used to aggregate, store, and distribute donated foods for the emergency food system. In this way, it provides a link between producers and consumers. The food bank aspect of many community food hubs, however, is often just the first step to insuring food security. Educational and economic development components are also included in hub models with the ultimate goal to reduce the need for emergency food sources such as food banks.

Food trucks - Food trucks, or mobile markets, can take food to communities that do not have direct access to fresh produce. For many residents, lack of accessible transportation creates a reliance on corner stores that may not provide adequate produce (Nurin, 2011). Food trucks alleviate these problems by allowing for easier access into these neighborhoods without the high initial start-up costs for businesses (Fresh Moves).



Souper Van food truck

Gleaning - Gleaning is the process of taking leftover crops, which are not considered economically viable. The produce might not meet size or quality requirements or it might cost more to harvest it than it would to leave it in the fields or farmers might have made as much as they intended for the year and they opt not to harvest. In practice, much of what is gleaned does not meet USDA's highest standard and thus will not be bought by grocers. This food is fine to eat, but may have minor dents or blemishes or might be too large, too small, or misshapen. For food banks and other groups combating food insecurity, gleaning presents an opportunity to introduce fresh food into the emergency food system but there are many costs as the work of gleaning is time consuming and labor intensive and gleaned food has to move quickly from farmer to consumer – a tough haul in the hot summer months. Although most food is gleaned directly from farms, food waste can occur across sectors. D.C. Central Kitchen, for example, recovers left over food from schools, restaurants, grocery stores as well as regional farms (D.C. Central Kitchens: Recycling). Approximately 12 - 30% of all fruits and vegetables are left in the fields, and, while the percentage of food waste through food retailers varies depending on the type of store, the numbers are significant leaving a huge opportunity for gleaners (Jones). Gleaning helps to reduce food loss.

Restaurants – In addition to community kitchens, space in a community food hub can support restaurants and cafes. These entities could be used as culinary training centers, or as central locations for community members to get delicious meals made from local products available at the Food Hub.

Two Food Hubs – in Detail

To understand the versatility and benefits that food hubs offer, we researched several food hubs. This research allowed us to better understand how food hubs work, where they came from, and how they fit into their particular contexts. We decided to profile The Stop Community Food Center in Toronto and The Eastern Market in Detroit. Both engage communities and increase access to healthy food.

The Stop Community Food Center

The Stop, which began as a non-profit food bank in 1982, expanded over time to become a community food hub. The Stop Community Food Centre's mission is to "increase access to healthy food in a manner that maintains dignity, builds community and challenges inequality" (The Stop: Mission). Stop staff engaged in advocacy and later expanded into community development and food justice (Palassio, 2011). Using food and training as its tools, The Stop has become an integral component of Ontario's food system. With its long history as a non-profit organization, The Stop has showed its value and viability and recently expanded into a second location.

To fulfill its mission, The Stop focuses on food access, community food security, and community action and public education (The Stop: Mission). By bringing fresh, non-processed foods to the area and distributing them through food banks, The Stop ensures that lower-income locals maintain a nutritious diet. Their community food security program enhances farming and cooking skills which creating a social connection between participants and teachers. The Stop operates as a social advocacy institution by sending its staff into the policy field and by training community members to be advocates for themselves. Childhood education about farming, food logistics and health round out The Stop's inclusive approach by engaging local Torontonians youth. At its core, The Stop educates individuals and groups about food and social justice. The Stop provides on-site classes to teach growing, cooking and baking, and hosts an online "Learning Network." This resource include free webinars, learning modules and collaborative forums where beginning enthusiasts and experienced farmers alike share knowledge and advice.

To ensure financial stability, The Stop incorporated business models to create a system of internal funding. These businesses help to close the gap between income (donations and grants) and expenses (food collection, distribution and staffing). This two-sided approach has allowed them to continue their philanthropic work for three decades. The Stop integrated a catering service. Their menu includes breakfast, lunch, and dinner, as well as wedding and holiday options. They even offer a suggested wines list. Many of the meal options are pricey, with holiday meals ranging from \$50 to \$70 per person, depending on the purchaser's selections (The Stop: Holiday Menue, 2011). In addition to its catering services, The Stop generates funding through its farmer's market which includes The Stop's Market Café that sells prepared foods to market patrons. Potential vendors must be farmers to participate. The farmer's market, including The Stop's Market Café, is only open on Saturdays from 8 AM until noon though, limiting its ability to generate income.

The Stop's businesses provide a portion of the financial needs that a food hub of this magnitude requires. According to The Stop's most recent annual report, its income breaks down as: 6% from corporations and organizations, 12% from the government, 12% from social enterprise, 12% from individuals, 15% from special events, 15% from donated foods, and 28% from foundations (The Stop: Why, 2011). Only 3% of expenditures are used to cover administrative costs. CharityNavigator.com grants food banks, food pantries and food distributors who spend 3% or less on administrative costs a "10" out of 10 in this field (CharityNavigator.com).

As a non-profit organization, a portion of The Stop's funding comes from charitable donations. However, instead of taking in direct financial contributions, The Stop states that it has those donations made to a fund that is used to purchase organic food from The New Farm (The Stop: Grow). The New Farm is another socially- and environmentally-focused Ontario-based organization. It shares many of the same principles that The Stop was built upon. By establishing this relationship with a local farm, The Stop uses the donated funds to support Ontario agriculture, an economic benefit, while simultaneously creating social and nutrition benefit for Ontario residents. The New Farm is a family-run 100-acre farm located just outside of Creemore (The New Farm, 2008). Despite the apparent contradiction between the labor-intensive methods that The New Farm uses and its non-corporate approach, it sells its produce to The Stop as well as local institutions and restaurants and the Creemore Farmer's Market. On their website, The New Farm states that a \$500 donation provides a family of four with vegetables for the whole growing season. In addition to financial donations, The New Farm also incorporates a "Dig for The Stop" program that allows donors to work on the farm to harvest food for The Stop, yet another way this dynamic relationship has created social benefits with limited resources.

There is a third party that makes this Toronto-based case function as well as it does: 100km Foods Inc. This for-profit corporation is the distribution portion of the equation. The company picks up freshly harvested produce to deliver to local markets, institutions, and restaurants. They benefit the local farmers by creating new business opportunities and by paying a fair price for the produce (100km Foods Inc) Their business is instrumental in affording people access to fresh, healthy alternatives to fast food and preserved items.

The Stop is an excellent example of how steady growth and expansion can take a small food bank to new, ground-breaking levels. Their social enterprise encourages youth and adults to learn about the food they're eating and how to grow and cook it. Their market and catering services bring food to those who struggle financially as well as to those who can afford delicious catered foods. Their long-term presence in Toronto has made them a recognizable name that encourages donations and partnerships that benefit the organization and, more importantly, the everyday people who rely on it.

We chose to look at The Stop because the organization's underlying purpose and many of the community-centered activities mirror Elijah's Promise and provide one example for a way forward. We turn now to a profile of the Detroit Eastern Market.

Detroit Eastern Market

Detroit's Eastern Market dates back to 1851 when it was used as a farmers' market. A private non-profit market, Eastern Market Corporation (EMC) set its goal of becoming "the undisputed center for fresh and nutritious food in Southeast Michigan" (Deeb, 2007). Their aim spans far beyond assembling local food for redistribution. Education is key for EMC. Their strategy is to bring healthy, affordable food downtown and to teach people about the value of fresh foods.

Eastern Market provides many services such as youth programs and community kitchens and it seeks to stabilize the local agricultural economy. Eastern Market starts by educating growers and follows through to converting waste into fertilizer (Eastern Market Corporation, 2011). It is creating a green area to demonstrate "growing methods and business models related to small scale specialty crop production" (Eastern Market Corporation, 2011). EMC plans to extend this model to other areas of the property and seeks to create 12-14 farmsteads. Garden Resource Collaborative (GRC) offers training and a micro-loan program for startups for small city farmers up to medium-sized suburban farms (Archambault, 2012). The market offers processing space for incubating new products. McClure's Pickles got its start there (Eastern Market Corporation, 2011).

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

Eastern Market Corporation takes a holistic approach to redevelopment and addresses aspects beyond the realm of food. Developers have come into the Eastern Market area, offering housing opportunities within walking distance. Converting former factory buildings into multi-unit structures, the developers are renting and selling the new units. The rental rates typically range between \$700 and \$1,500 per month. The purchasable lofts are currently listed between \$149,000 and \$248,000 (Eastern Market Corporation). Because the Eastern Market Corporation sees the entire area surrounding the actual market itself as vital to the redevelopment efforts, it links to the lofts developers' websites from its own site. After all, with more potential buyers in the area, especially those who may be health-conscious and choose to walk to the market, it is more likely that the market will flourish.

Away from the Eastern Market campus, EMC wants to change Detroit's food culture. Detroit's Eastern Market is involved in the Green Ribbon Collaborative which instituted the Fresh Food Share, or FFS. To bring fresh food to Detroit residents, the FFS organized a produce order and delivery system. Once a month, customers place their orders of a small or large box of produce or a small box of fruit. The following week, the ordered boxes are delivered to the customers' choice of sites. The FFS offers eighteen pick-up locations in Detroit to ensure that much of the city is served. To keep the costs low, volunteer packers load the boxes prior to delivery (Gleaners Community Food Bank, 2012). The produce is purchased from local farmers to increase sustainability while reducing emissions and strengthening local agriculture.

In addition to the pre-ordered boxes, the Eastern Market runs farm stands at twelve locations throughout Detroit. To ensure access, the farm stands accept Visa and Mastercard as well as Michigan's food stamp program known as Bridge Card. The Bridge Card program has a Double Up Food Bucks initiative which allows Michigan residents to double their program money when they buy Michigan-grown fruits and vegetables (Double Up Food Bucks, 2011). This program helps to fund local farming while getting healthy food to communities.

EMC also supports a mobile food truck, is working to implement locally-grown fresh produce initiatives in public school lunch programs, and is trying to increase access to fresh food at corner stores. With the understanding that not all residents can visit the commercial retail market on Saturday, EMC began a seasonal Tuesday market. There are currently plans to open on Sundays as well starting in 2013. With all this innovation and progress, there is still an effort by EMC to promote alternative payment plans for those who cannot afford fresh produce. Only total community participation will create a complete regional food system (Eastern Market Corporation, 2011).

In Eastern Market Corporation's Mission Statement, they express their desire "to make the Eastern Market the undisputed center for fresh and nutritious food in southeast Michigan" (Eastern Market Corporation, 2007). To accomplish this end, the Eastern Market Corporation works to make the market a lasting regional food hub while capitalizing on the site's history and improving the economic and aesthetic viability of the area. Detroit's Eastern Market is a highly effective food hub because it offers exposure to thousands of local buyers at minimal expense to farmers. The market coordinates state programs with their healthy lifestyle initiatives to maximize benefit for all, especially those who are most in need of assistance.

Detroit's Eastern Market is an excellent study for New Brunswick to review because Detroit is a city that has also seen its share of disinvestment. Detroit is also surrounded by farm lands that provide an abundance of fresh foods and yet people in both cities lack access to healthy options. Eastern Market has made its home in a space that was previously unused and deteriorating. Similar facilities are located in New Brunswick today. The reinvention of a struggling neighborhood could renew life around the area,

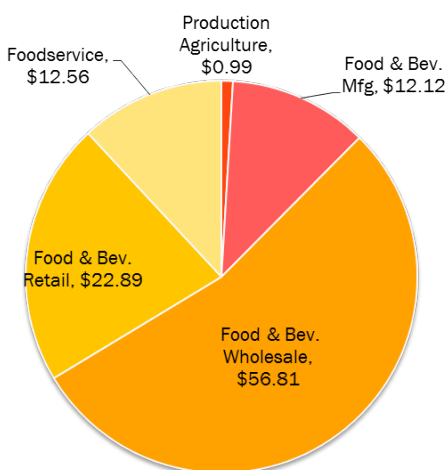
bringing new businesses and residents. The success of Detroit's Eastern Market exemplifies the use and benefits that a food hub can bring to a city like New Brunswick.

Now that we know a little more about food hubs and community food hubs, we will explore the context for creating these in New Jersey. While we are interested in the potential to create a food hub in or near New Brunswick, the food-related economy extends beyond the jurisdictional boundaries of the city. To better understand what is grown in New Jersey and where it goes, we broaden our scope to better understand New Jersey's food economy, what happens in the region around New Brunswick, what is grown in New Jersey, and how it moves around the state.

THE CONTEXT FOR CREATING A FOOD HUB IN NEW JERSEY

New Jersey's food economy makes up nearly nine percent of the private sector gross state product and accounts for seventeen percent of private sector employment (See Figure 3). More than 10,000 farms engage in production agriculture (Schilling, 2011). Fruits and vegetables make up 37% of cash receipts, resulting in a combined total of \$382 million (See Figure 4). Although field crops, which include corn for grain, barley, and hay, use more than fifty percent of the state's agricultural land, these crops only account for eight percent of the agricultural cash receipts (USDA: NASS, 2011; NJDA, 2011; NJDEP, 2012). Vegetables make up twenty-two percent of the state's agricultural cash receipts, totaling \$224 million, and use 7% of agricultural land (NJDA, 2011).

New Jersey Food Industry Output - 2007 (\$ Billion)



Total Industry Output: \$105.37 billion

Source: Schilling, 2011. pg 3

Figure 3: NJ Food Industry Output

New Jersey Agriculture Cash Receipts 2010

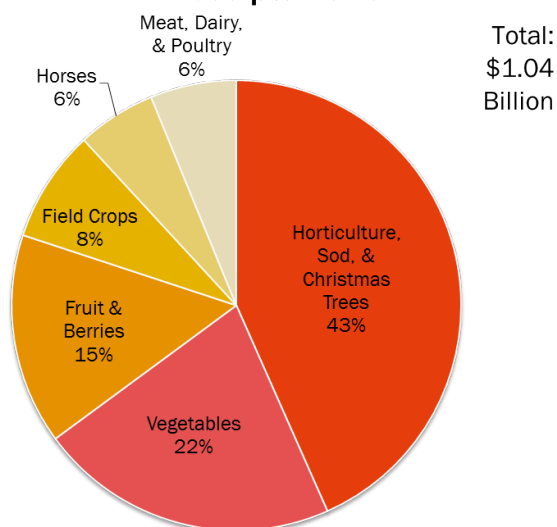


Figure 4: NJ Agriculture Cash Receipts

A map showing the average size of farms and farm distribution by county shows the agricultural landscape in New Jersey (See Figure 7). The United States Department of Agriculture (USDA) conducts an agricultural census every five years with the most recent completed in 2007. Between 2002 and 2007, the number of farms in New Jersey grew from 9,924 to 10,327, and the total acreage of production agriculture decreased by almost 100,000 acres. The number of small farms, 1 to 49 acres grew while the number of farms 50 acres to 999 acres decreased (See Figure 5). The number of vegetable farms increased between 2002 and 2007, but the total acreage of these farms decreased. The number and acreage of orchards also decreased (USDA, 2009).

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

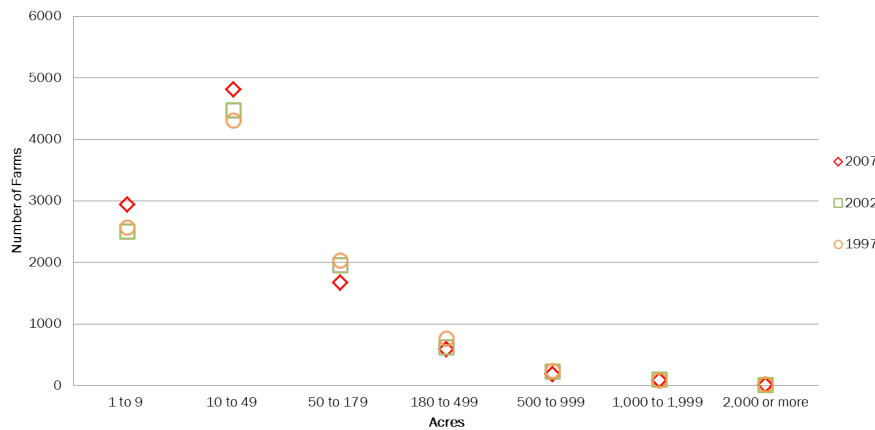


Figure 5: Size of farms in NJ

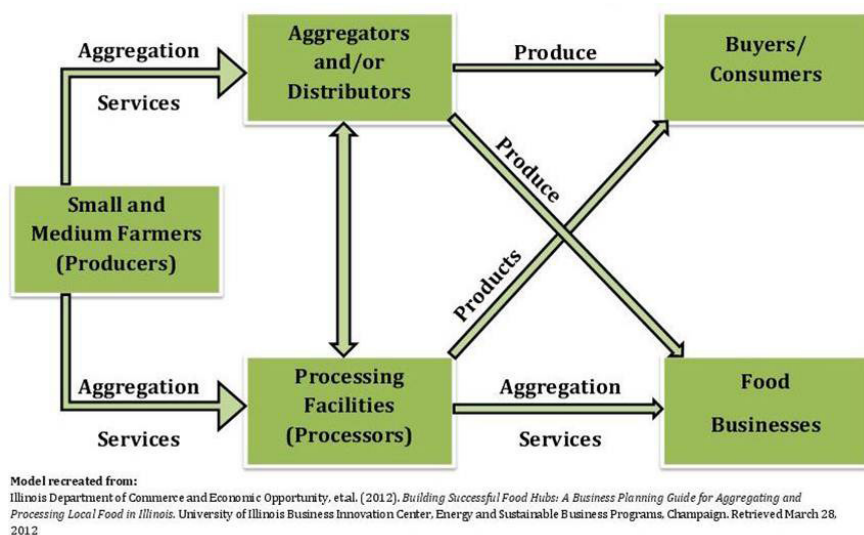


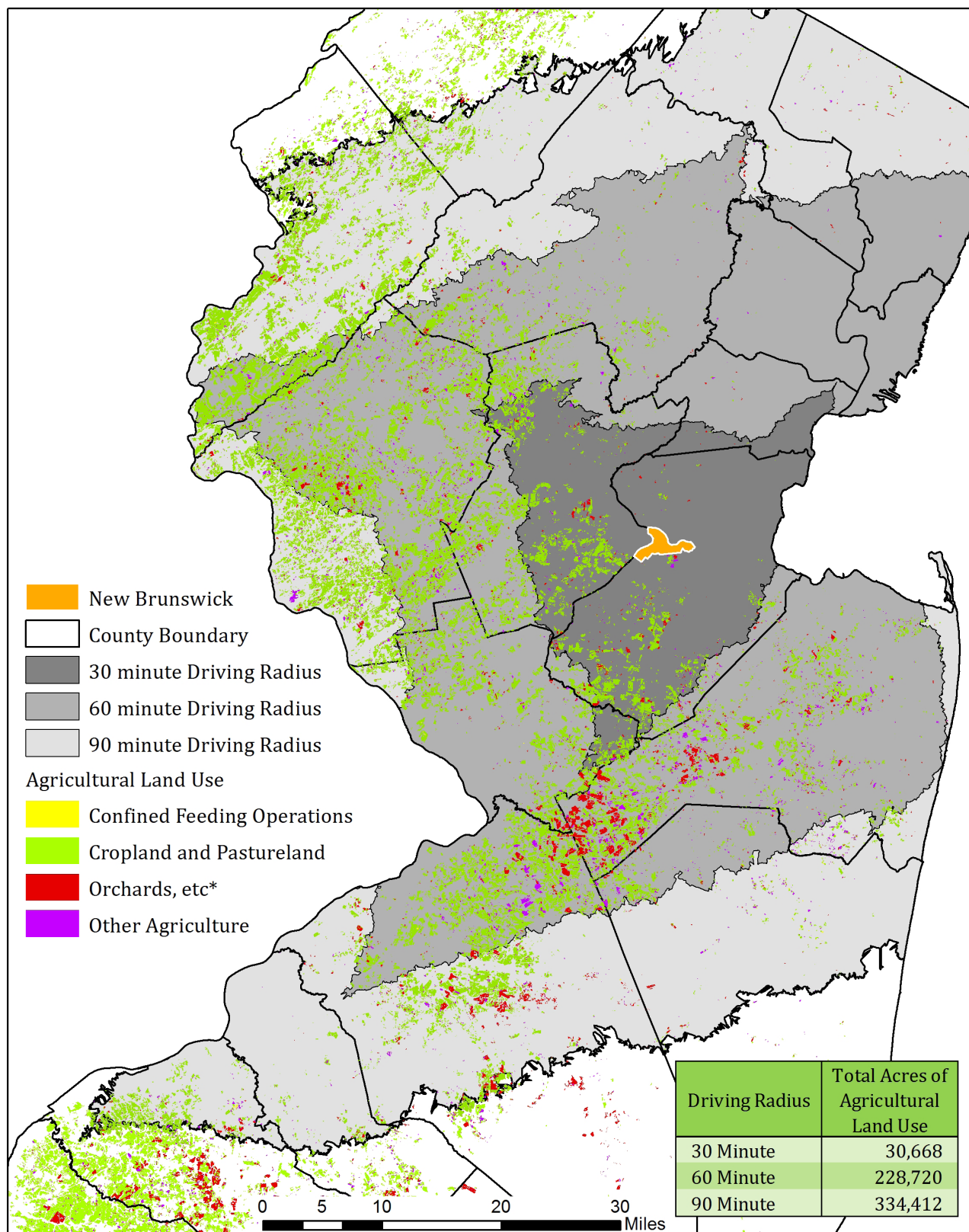
Figure 6: Typical Distribution Model, 2012 CD Studio

are offset by the costs. Additionally, farmers may not move enough product through smaller retail farm markets.

Farmers can also bring food themselves or hire firms to bring food to markets, distribution centers, and to processing facilities (See Figure 6). If many farmers from one area deliver product to the same location, a delivery service can pick up the produce. For New Jersey's small and mid-sized farmers, this may be a service like Zone 7. But Zone 7 is small and expensive. Farmers might use other larger corporate distribution systems but again there are concerns about price and also scheduling. If the truck does not come, or does not come on time, the farmer may need to pay late fees and other fees from the buyers and produce can spoil.

Two recent studies in New York and Philadelphia sought to better understand how to link farmers to buyers. The Market Ventures study explored the potential to create a wholesale produce market in New York City to connect farmers with buyers such as residents, institutions, and restaurants. The research team interviewed farmers and buyers and identified communication and distribution as ongoing issues. They suggested that creating a coordinated distribution structure, especially one that incorporated preparation and processing, would help small and midsized farmers access markets. They also found

Distribution is one of the most vexing problems for small and mid-sized farmers. New Jersey is home to farms on the smaller side and the number of these farms is growing. Smaller farms are more likely to face challenges getting their produce to buyers and capturing prices that enable them to remain in business. Some farmers bring the buyers to them by creating community supported agriculture (CSA) and/or restaurant supported agriculture (RSA) programs. But CSAs and RSAs present their own challenges and may not be right for every farm. If consumers aren't coming to the farm, then the farmers have to get their product to the consumers. Farmers may move produce themselves or hire companies to distribute it. If farmers attend farm markets, they can build relationships with buyers and buyers can learn more about the farmers and how they grow and develop trust over time. But farmers face tremendous costs in time, gas, and other resources and, while they may develop individual relationships with buyers (retail and/or wholesale), those benefits



*Orchards/Vineyards/Nurseries/Horticultural Areas

New Brunswick Food Hub Studio. Newman et al. 2012. Data Sources: NJDEP GIS 2012

Figure 7: Agricultural Land Use within Driving Distance of New Brunswick, NJ

that farmers and buyers want a distribution service. Restaurant buyers, for example, are eager to get fresh local produce but many prefer to order and have the food delivered. And for farmers, a trucking service is a vital piece of the missing link to help them get their goods out in an efficient and timely manner (Market Ventures, Inc., 2007). There was also interest in connecting farmers more directly to buyers. Direct selling can help farmers get food out more quickly and can ensure a steady flow of produce for restaurant and large institutional buyers. These missing links are not just missing in New York, but also in Pennsylvania and New Jersey. A study done by the Common Market in Philadelphia also identified a need for an efficient distribution system. The study and some other recent conferences in New York have suggested some holes in communication networks between producers and consumers. Facilitating communication between those who grow and those who purchase should be a key component of a food hub.

Produce grown in New Jersey makes its way out of the state and into large terminal markets in New York and Pennsylvania. Whether it moves via a trucking service, or a farmer's truck, the goods are transported on the highways. But, the roads are congested, are not always well signed, and some of the large roads have tolls. A 1996 study of New Jersey's food wholesale industry found that an "estimated 10 to 15 percent of trucks are delayed or do not arrive for deliveries or pickups each day" (Adelaja, Nayga, Jr., Tank, & Schilling, 1996, p. 32). When the produce is delayed or not picked up, it costs the farmers money. Not only do they lose profits, but the farmers may then have to pay late fees from the buyer and other penalties. The farmers also lose time away from the farm. And if food moves out to a terminal market only to come back into New Jersey for sale, that's a lot of potentially avoidable wear and tear on roads. Without a reliable and standard inexpensive method of transportation, farmers may struggle (Adelaja, Nayga, Jr., Tank, & Schilling, 1996).

Left Over Produce & Gleaning

There are other distribution networks that gather food that will not be sold which is then distributed to people who need it. New Jersey's Farmers Against Hunger (FAH), started in 1996, collects food left in the fields of 35-50 farmers and brings it to one of four distribution centers in Camden, Browns Mills, Mount Holly, and Trenton. FAH also gathers day old bread and food from Wegmans, Panera, and ShopRite. FAH distributes the food using two trucks, neither of which is refrigerated, which places even more pressure on FAH to move produce quickly from farm to consumer. When farmers have food that is ready to be picked up, they call FAH to notify them. While FAH has many volunteers, this is a tough system to organize efficiently. Picking food is hard work. Volunteers may be unwilling or unable to pick for the length of time needed to rescue all of the harvest at a particular farm and/or it maybe difficult to get enough volunteers in time to get the produce. FAH works with another gleaning organization called America's Grow A Row. They work with farmers who plant rows just for gleaning. This organization helps to coordinate volunteers. The two organizations have been working together to reach farms and consumers across the state.

The gleaning operation could be expanded and streamlined to rescue more produce and move it into communities that need it most. We suggest a formal study of the food rescue system in New Jersey is necessary to help identify problems and what it would take to address those problems. For example, refrigerated trucks and a streamlined route mapping system could increase their impact in the state. Partner that with an innovative digital volunteer organization system and they might be able to glean and move considerably more produce. Package that still further with a processing system to preserve food that can't be consumed before it goes bad, and even more food is saved. These changes would require an investment but could dramatically increase access to healthy food for communities that lack it.

Food Processing and Manufacturing in New Jersey

Food processing offers opportunities to extend the harvest and to grow new food-related businesses. But there is a lack of food processing facilities from small certified commercial kitchens to large co-packers. Elijah's Promise currently gleans and freezes food for use in their soup kitchen and culinary training programs during the winter and struggles to find space to process and store what they process. There is a lot of interest in food processing but the regulations in New Jersey require small producers to use commercial kitchens. While this doesn't sound too daunting, if they are making products, they quickly wear out their welcome. To be ready to process a batch of something means getting all of the ingredients at the location, using the location for a set period of time, and cleaning up afterwards. This is hard to do since most commercial kitchens are located in places that use them regularly. In New Brunswick, for example, there are commercial kitchens at the soup kitchen, in some churches, and some firehouses. It's hard to ship food ingredients ahead as these locations can't really store them. Other communities face similar problems.

Small producers and people who want to launch food businesses also need to use certified commercial kitchens. Since there is a lack of these facilities, companies produce out of state, share kitchen space, or process illegally. Food hubs can incorporate commercial kitchen and processing facilities. A food hub in New Brunswick could consider a space that ensures affordability for very early start-ups. The FIC can provide experience and knowhow about the physical space and the technical assistance to establish a successful processing facility. A locally accessible place can help businesses get to the point where they may be able to graduate into a space at the FIC or the Piscataway processing center. A community kitchen could allow enable new product testing and idea development. Community kitchens are less expensive than other processing facilities and allow for very small-scale production. Such a model encourages community members to get involved as there is little risk if a product fails. A community kitchen can also create a local market place for the products. With a limited market reach, products can process specifically for certain communities.

For those products that do extremely well in the regional market and move to, and then graduate from, the FIC and need a larger facility, but do not have the resources to open an independent facility, co-packers are the next step. Relationships with co-packers usually require business owners to be hands-off during production. Many companies that have a small batch identity, and believe in the traceability of their product, may want to work more closely with a co-packer. Conversations with a small NJ food manufacturer suggested the need for a co-packing facility that can be used by companies once they graduate from the FIC that instills the goals of local produce and small batch production. Without a facility like this, companies will move out of state. A former pharmaceutical plant in Brooklyn was recently turned into a food incubator along these lines. This may be an opportune time to exploring if it's possible to re-use unused former pharmaceutical manufacturing plants as food business innovation centers. Because the manufacturing of drugs requires such a sterile environment, the facilities are adaptable to food use with already existing washable floors, in-floor drains, and exhaust hoods (Kaysen, 2012).

First Field Profile

The Food Hub team met with the First Field Ketchup founders Patrick and Theresa, who told their food artisan story which began with a stand on an organic farm in New Jersey. The ketchup sold well, was covered in the *New York Times*, and appears in Whole Foods stores across the Northeast.



First Field Ketchup

The couple started processing in the wee hours in Elijah's Promises' culinary training center kitchen. They started with three ketchup varieties. Soon enough, they enlisted the service of friends and later moved production to the Food Innovation Center of Bridgeton, NJ. The FIC offered a full service facility complete with a tomato expert (who worked for Campbell's soup) and helped First Field perfect a consistent product. First Field worked with New Jersey Agricultural Experiment Station faculty to find farmers to grow the tomatoes for them and they process their ketchup using raw produce, somewhat unusual, as it turns out.

First Field has graduated from the FIC and finds itself without a co-packer in New Jersey.

This small ketchup company is emblematic of the new food related businesses that are recreating a relationship between farms and consumers. They incorporate Jersey grown produce, proudly wearing the Made with Jersey Fresh label, with South Jersey's food processing history and their still existing wealth of human capital, to create a new food economy company and product. The ketchup is expensive and will not directly address food security issues but transforming the way we think about the food economy to enable companies like First Field to remain in New Jersey can increase the number of food related jobs. A community food hub can help to create production facilities and train workers to work in these places.

A FOOD HUB IN NEW BRUNSWICK

Thinking about a food hub in New Brunswick offers a few possibilities. New Brunswick is located in the middle of the state making it an excellent distribution nexus. Its nickname, "The Hub," suggests its historic past as the nexus between New York City and Philadelphia. The city now could serve as the midway point to move farm products from the agricultural south into highly dense urbanized regions throughout the state. New Brunswick is home to many organizations, institutions, resources, and innovators that are already working on food security and the food economy in some manner. Complementing the food hub core aggregation and distribution elements with the many already strong and creative efforts underway suggests great potential.

Existing Community Food Infrastructure

Potential Community Partners

Intersect Fund - While many local residents may have brilliant ideas for mass producing a family recipe or creating a new value-added product, doing so requires business and technical expertise. The Intersect Fund, a non-profit organization located on Church Street in New Brunswick, helps address these issues by providing low-income entrepreneurs with the basics for running a business through one-on-one coaching sessions, along with small business loans ranging from \$500 to \$10,000 (The Intersect Fund, 2012).

Elijah's Promise - Beginning as a soup kitchen in 1989, Elijah's Promise has since expanded to provide opportunities and services to address hunger and to reduce poverty in New Brunswick. Such services include Promise Culinary School, which has provided hundreds of students with culinary training, career preparation, and job placement. Their catering business, provides hundreds of meals to children, the elderly and homebound every day and to A Better World Café. Opened in 2009, the café allows patrons to pay any price for delicious and healthy prepared foods, while providing job opportunities to graduates of the Promise Culinary School (Elijah's Promise, 2012).



A Better World Cafe

New Brunswick High School Culinary Arts Program - The recently-built New Brunswick High School features a culinary arts program, which can serve as a hotbed for culinary training and garnering local student interest in food. The school includes a fully equipped kitchen, with enough space for two dozen students to work. The program also features an in-house catering service which can strengthen interest in food both for the students who prepare it and for the general student body (Bradshaw, 2012).

Rutgers University and Rutgers Agricultural Experiment Station - In addition to the aforementioned non-profit organizations, Rutgers University is a strong institutional partner. The Rutgers New Jersey Agricultural Experiment Station (NJAES) provides food science facilities, research in nutrition and health, and food-related economic and workforce development, along with myriad other food services. The NJAES Center for Advanced Food Technology, located in Piscataway, provides state-of-the-art facilities for research into food quality, safety, and healthfulness. The Food Innovation Center in Bridgeton, New Jersey, is a business incubator for food production, providing facilities and technical support for food processing, market research, and business development. NJAES could prove invaluable in helping create a food hub both through their existing facilities and their expansive research (Rutgers NJAES). Additional relationships with faculty and students can round out experiences and bring community and university resources together for mutual benefit.

Farmers Against Hunger - Located in Trenton, Farmers Against Hunger assists local farmers with gleaning surplus produce and delivering it to soup kitchens, food pantries, and other charitable organizations. A partnership with Farmers Against Hunger could link the food hub to existing emergency food infrastructure and regional distribution, while also providing Farmers Against Hunger with more refrigerated storage space to better preserve their gleaned food (NJAS).

George Street Co-op - Located on Morris Street in New Brunswick, the George Street Co-op is a non-profit, voluntarily owned and controlled market and café, offering healthy vegetarian foods to members and non-members alike. In addition to having a democratic structure through which all members can make decisions about the organization, the cooperative model strengthens access to healthy food and community economic development. The George Street Co-op has an existing virtual communication infrastructure, as their online message board includes discussion of recipes, community events, and a forum for the exchange of goods and services (George Street Co-op, 2012). Its current leadership is working to build community connections.

Potential Buyers

New Brunswick includes several large institutions that have the capacity to purchase large volumes of food, which could occur directly through a local food hub, including Rutgers University, Johnson & Johnson, and several large hospitals. Rutgers Dining Services, for instance, serves about 130,000 meals per week (Tenore, 2011). The local Food Hub of Charlottesville, Virginia delivers local small-farm produce directly to University of Virginia Dining Halls via their own fleet of refrigerated trucks. New Brunswick can look toward Local Food Hub for a model of providing locally sourced produce to area hospitals such as Robert Wood Johnson and Saint Peter's University Hospital as well, as it provides local food to UVA hospitals, which services 2,500 cafeteria customers per day. Going beyond merely selling produce to the hospitals, Local Food Hub has partnered with them to host two farmers' markets per week (Local Food Hub: About Us, 2010).



Chard at RU Student Farm

This is not to say that a local food hub should limit itself to serving large institutions; New Brunswick also features a panoply of restaurants, markets, and bodegas that could be serviced by a food hub, allowing them to expand their selection of healthy and local foods. Because these are smaller businesses, though, they individually require only a fraction of the food of large institutions, making it difficult to achieve wholesale rates. As such, a food hub might allow smaller businesses to pool together in order to gain more buying power. Locally Supported Agriculture (LSA) expands upon the buyer share model of traditional CSAs. Rather than just offering individual shares, an LSA provides various tiers of food shares. Individuals, for instance, may purchase personal shares, while restaurants and markets can purchase larger-scale shares. Finally, much larger shares can be available for the city's large institutions.

Related Services and Activities

A food hub in New Brunswick could do a range of activities and services such as...

- Incorporate light processing to facilitate moving food from farmers to institutional buyers.
- Add a commercial kitchen to chop food for larger buyers, to make small batch food products and test recipes, and prepare food for large institutional purchasers such as large public school systems.
- Incorporate job training and education opportunities for children, youth, and adults.
- Grow a CSB/CSM. Elijah's Promise currently operates a community supported bread and just launched a community supported meal program. Incorporating these into a larger facility could expand the market, incorporate more local produce, and provide more jobs and opportunities for job training and education.
- Assemble a Jersey Fresh and Made with Jersey Fresh CSA. There is unmet demand for CSAs in New Jersey. A food hub could bring the usual produce share together with fruit, wine, bread and other components by aggregating local produce. One of the local CSAs tried this a few years ago but it was too difficult for them to aggregate the products. A food hub could perform this function incorporating a Jersey Grown or Made With Jersey Fresh product into the share each week. This

could bring products normally only distributed through farm markets in South Jersey to a Central and North Jersey market. They could also assemble these Jersey products into baskets for sale in NYC and NJ. Parents could ship their children Jersey Fresh products while at college.

- The NB high school could create a formal internship program with the hub to teach students about food supply chains and other food hub specialties.
- There are many natural relationships waiting to develop between a hub and Rutgers University and Middlesex County College.
- The Hub could become a center space for specialty produce. Central NJ is home to a few large Asian markets but there are few large Latino specialty markets. The hub could bring together products that meet the needs of large immigrant communities.
- The hub can host events to facilitate communication between farmers and consumers such as the Farm to City Expo in NYC. On March 6, 2012 some of us attended the NYC Farm to City Expo. The expo, which was held in midtown Manhattan, was a discussion led by growers, added-value producers, food distributors, food processors, and buyers from private companies and public institutions. The purpose of the meeting was to create connections between growers and buyers so that farmers might increase their access into the NYC wholesale market. The panel members introduced themselves and their work, and shared their success and challenges in growing their businesses. New York State is home to 36,000 farms, approximately 51% of which are smaller than 100 acres (USDA: State Fact Sheets, 2012). Many of these small farmers achieved success by building consumer relationships in the city. Brian Nicholson, president of Red Jacket Orchards, a farm located upstate, attributed much of their success to selling their products at the NYC Greenmarkets for the past twenty years. The Greenmarkets are a vital link to a much larger retail and wholesale markets. Many of the producers on the panel shared similar stories of success that they attributed to understanding customers' needs and responding to meet those needs. Nearly all of the panelists, producers and buyers, observed that communication between the various players of the food industry could improve and potentially contribute to a more effective and robust industry. Many of the issues faced by the panel members are quite similar to food industry players in New Jersey, and food hub in New Brunswick would not only allow for a market place but could serve as a permanent place to build relationships between producers, buyers and consumers, and to learn from one another.

Potential Food Hub Locations

Careful consideration is required for siting a food hub within New Brunswick. Generally speaking, the hub should be located in an industrial area so as to avoid bringing large truck traffic through residential neighborhoods. One potential area is along Jersey Avenue, south of downtown New Brunswick, which has long featured many large warehouses, and includes large swaths of open space. Another major consideration, though, is regional access to best allow for food transportation from farms across the state. Industrial areas along the New Jersey Turnpike in North Brunswick or near Interstate 287 in Piscataway may be particularly valuable in this regard. Nevertheless, specific siting considerations will need to determine whether or not vacant space is available, whether the food hub would be allowed through the zoning code, existing facilities available within the warehouse, and so on.

NEXT STEPS

Given the ample opportunities within New Brunswick, we now turn to the next steps toward creating The NB food hub. Food Policy Alliance has been strengthening relationships among New Brunswick organizations. To move forward, we need to learn more about the farmers on New Brunswick's periphery,

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

their needs, and how a food hub could integrate the farmers with the engaged community actors to meet the dual goals of economic development and community food security. The Food Policy Alliance might consider working with farmers to conduct a regional food economy study which would provide the groundwork for a food hub feasibility study. Together the Food Policy Alliance and farm leaders can think about what study components are necessary, reach out to academics who can conduct this research, and talk about whether or not a community food hub could provide benefits for many partners. Such a study should address regional and local access for food shipments, local zoning regulations, and existing warehouse space within the city. A comprehensive market study of New Jersey's food economy would address the following and more: How does food move around the state? Where does food grown here go? What percentage goes out to the terminal markets only to come back? How much food is left on farms because farmers couldn't sell it, get an adequate price for it, or couldn't access distribution resources to move the food? Once a study looks at these issues facing farmers concerning distribution, processing, and sales, steps can be taken to ensure that a New Jersey food hub will address them. Ultimately, a food hub in New Brunswick can help rebuild New Jersey's food economy by supporting local farmers, growing small businesses, strengthening food security, creating efficient food networks, and providing healthy local foods to all.

APPENDICES

DEFINITIONS

Aggregation – the movement and organization of moving the produce from the farms to a central location

Active coordination – a full time management position which organizes all activities between value chain participants (these are the producers, processors, distributors, and buyers) to ensure that everything is completed in a timely, efficient manner (USDA: Regional Food Hubs, 2011).

Auction market – a method of food distribution by which individuals or organizations can buy from hundreds of farmers through a bidding process

Co-packer - the client will provide the recipe for a product and the co-packer will provide the resources, most importantly a facility and labor

Cold line processing – post-harvest processing, including washing, grading and packaging of produce

Cold storage - post-harvest handling of produce and its packaging

Community food hub – provide the same core activities as food hubs but they also seek to develop community economic development and community food security outcomes

Community Supported Agriculture (CSA) – a group of individuals who pledge support to a farm operation. Members or "share-holders" of the farm or garden pledge in advance to cover the anticipated costs of the farm operation and farmer's salary and are paid in return with shares of the farm's produce throughout the growing season (National Agricultural Library: CSA, 2012)

Consumer food hubs – online buying clubs that connect consumers with producers. Also called a "virtual hub", groups of consumers operate as the aggregator and distributor

Distribution – the process of moving goods and services from one location to another using some form of transportation

Food economy – The entire food industry including the economic effects of growing food, processing food, distributing food, food sales, either wholesale or retail, and food service.

Food hub – A business or organization that actively manages the aggregation, distribution, and marketing of source-identified local and regional food products primarily from small to mid-sized producers to wholesalers, retailers, and/or institutional buyers (USDA: Overcoming Barriers, 2012).

Gleaning –the collection of crops from farmers' fields that have already been harvested or on fields where it is not economically profitable to harvest

Greenmarkets – an open-air market that sells farm fresh produce and products to consumers

Mid-sized farmer – a farmer with a gross income of up to \$750,000 yearly (USDA: Value Added Grant, 2011)

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

Non-profit food hub – organized by a nonprofit organization. Non-profit food hubs assist small and medium-scale producers by providing them with distribution and marketing services and opportunities to create new wholesale market

Permanent facilities – a permanent structure that houses the different services, processes, and storage of the produce before it is sold

Processing facilities - a facility that allows access to certified equipment and possible storage for processing of raw produce. Many different models exist from shared kitchen use to business incubation

Producer food hubs – either individual or group of producers, that carry out their own aggregation and distribution functions instead of relying on a third party

Restaurant Supported Agriculture (RSA) – works the same way as a CSA except that restaurants pre-pay their share of the produce, bringing an immediate revenue to the farmers (Klemperer, 2009)

Retail-driven food hubs – retailers work with networks of farmers to supply seasonal produce and other food products to local grocery stores, restaurants, buying clubs or cooperatives

Small-sized farmer – A farmer with less than \$250,000 gross receipts, annually (National Agriculture Library: Small Farms, 2012)

Value-added product – transforming raw produce into another product, which is sold for higher than the commodity price. An example is tomatoes used for salsa, sauces or ketchup

Virtual food hubs – see consumer food hubs

ACRONYMS

CEZ – Cumberland County Federal Empowerment Zone

CFH - Community Food Hub

CRDA – Casino Redevelopment Authority

CSA - Community Supported Agriculture

CSB - Community Supported Bread program

CSM - Community Supported Meal program

EMC - Eastern Market Corporation

FAH - Farmers Against Hunger

FFS - Fresh Food Share

FIC – Rutgers Food Innovation Center

LSA - Locally Supported Agriculture

NB - New Brunswick

NBCFM - New Brunswick Community Farmers Market

NBCGC - New Brunswick Community Gardening Coalition

NBIA – National Business Incubation Association

NJAES – New Jersey Agricultural Experiment Station

NJDA - New Jersey Department of Agriculture

NJBIN – New Jersey Business Incubation Network

OFC - Oklahoma Food Cooperative

RAH - Rutgers Against Hunger

RSA - Restaurant Supported Agriculture

USDA - United States Department of Agriculture

WORKS CITED

- 100km Foods Inc. (n.d.). What does it mean to buy local? Retrieved February 21, 2012, from 100km Foods Inc: <http://www.100kmfoods.com/Vision.html>
- Adelaja, A. O., Nayga, Jr., R. M., Tank, K. R., & Schilling, B. J. (1996). *The Status and Condition of New Jersey's Food Manufacturing Industry: Food, Confectionery, Flavors & Extracts, and Beverage Processing*. New Brunswick, NJ: Rutgers, the State University of New Jersey.
- Archambault, D. (2012, February 2). Eastern Market: A Food Hub for Metro Detroit and Beyond. Retrieved February 6, 2012, from Metromode: <http://www.metromodemedia.com/features/metrodetroit-foodhub0241.aspx>
- Babcock, J. (2008). *Redeveloping a Montana Food Processing Industry: The Role of Food Innovation Centers*. Missoula: University of Montana.
- Bradshaw, J. (2012). NBHS Culinary Arts Program Teaches Students Work and Home Skills. Retrieved April 25, 2012, from New Brunswick Patch: <http://newbrunswick.patch.com/articles/culinary-arts-program-teaches-students-work-and-home-skills>
- CFBNJ. (n.d.). Community Food Bank of New Jersey: Fighting Hunger and Poverty. Retrieved March 6, 2012, from Community Food Bank of New Jersey: <http://www.njfoodbank.org/>
- CharityNavigator.com. (n.d.). Financial Ratings Table. Retrieved February 18, 2012, from Charity Navigator: Your Guide to Intelligent Giving: <http://www.charitynavigator.org/index.cfm?bay=content.view&cpid=48>
- D.C. Central Kitchens: Job Training. (n.d.). Culinary Job Training Program. Retrieved April 11, 2012, from D.C. Central Kitchens: <http://www.dccentralkitchen.org/cjt/>
- D.C. Central Kitchens: Recycling. (n.d.). Food Recycling. Retrieved April 13, 2012, from D.C. Central Kitchens: <http://www.dccentralkitchen.org/foodrecycling/>
- Deeb, E. (2007). Market History. Retrieved January 28, 2012, from Detroit Eastern Market: <http://www.detroiteasternmarket.com/page.php?p=7&s=58>
- Diamond, A., & Barnham, J. (2012). Moving Food Along the Value Chain: Innovation in Regional Food Distribution. Retrieved March 28, 2012, from USDA, Marketing Services Division: <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=stelprdc5097504>
- Double Up Food Bucks. (2011). How It Works. Retrieved February 25, 2012, from Double Up Food Bucks: <http://www.doubleupfoodbucks.org/how-it-works>
- Eastern Market Corporation. (2007). Eastern Market Corporation. Retrieved February 23, 2012, from Detroit Eastern Market: <http://www.detroiteasternmarket.com/page.php?p=1&s=8>
- Eastern Market Corporation. (2011, November). Healthy Metropolitan Food Hub. Retrieved January 28, 2012, from Detroit Eastern Market: http://www.detroiteasternmarket.com/media/files/128_eastern_market_360_nov_2011.pdf

Eastern Market Corporation. (n.d.). Living in the Eastern Market. Retrieved February 24, 2012, from Detroit Eastern Market: <http://www.detroiteasternmarket.com/page.php?p=1&s=78>

Elijah's Promise. (2012). Our Name and History. Retrieved April 25, 2012, from Elijah's Promise: <http://www.elijahspromise.org/about/our-name-history/>

Endres, A., Tarr, M., Endres, J. M., & Johnson, N. R. (2011). Illinois Direct Farm Business: A guide to laws affecting direct farm business in Illinois. Champaign: University of Illinois.

FBMOC. (n.d.). Your Support Affects the Lives of Thousands at the Jersey Shore. Retrieved March 6, 2012, from Foodbank of Monmouth & Ocean: <http://www.foodbankmoc.org/>

Fresh Moves. (n.d.). About U. Retrieved March 23, 2012, from Fresh Moves: Mobile Produce Markets: <http://freshmoves.org/about/>

George Street Co-op. (2012). About Us. Retrieved April 25, 2012, from George Street Co-op: <http://georgestreetcoop.com/about/>

Gleaners Community Food Bank. (2012). What is the Fresh Food Share? Retrieved February 23, 2012, from Fresh Food Share: http://www.gcfb.org/site/PageServer?pagename=pg_ffsabout

Great Falls Food Hub: Efforts. (2012). Food Hub Efforts to Date. Retrieved April 11, 2012, from Great Falls Food Hub: <http://www.greatfallsfoodhub.com/index.php?ID=49>

Great Falls Food Hub: Mission. (2012). Mission/Vision. Retrieved April 11, 2012, from Great Falls Food Hub: <http://www.greatfallsfoodhub.com/index.php?ID=43>

Greensgrow Farms. (2011). Waverland Produce Auction. Retrieved April 13, 2012, from Greensgrow Farms: <http://www.greengrow.org/farm/modules/imlinks/singlelink.php?cid=7&lid=72>

GrowNYC: About. (2011). About Wholesale Greenmarket. Retrieved April 13, 2012, from GrowNYC: <http://www.grownyc.org/wholesale/FAQ>

GrowNYC: Compost. (2011). Compost at Greenmarket. Retrieved March 15, 2012, from GrowNYC: <http://www.grownyc.org/compost>

GrowNYC: EBT. (2011). EBT and More at Greenmarket. Retrieved April 9, 2012, from GrowNYC: <http://www.grownyc.org/greenmarket/ebt>

GrowNYC: Wholesale. (2011). Wholesale Greenmarket. Retrieved April 2011, from GrowNYC: <http://www.grownyc.org/wholesale>

Guttadora, K. (2012, February 10). Farmers Against Hunger. (C. Worstell, L. Chamberlain, C. Sharpe, K. Newman, A. D'Auria, & D. Nguyen, Interviewers)

Illinois Department of Commerce and Economic Opportunity. (2012). Building Successful Food Hubs: A Business Planning Guide for Aggregating and Processing Local Food in Illinois. Retrieved March 28, 2012, from University of Illinois Business Innovation Center, Energy and Sustainable Business Programs Champaign: <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5097191>

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

Jones, T. (n.d.). Using Contemporary Archaeology and Applied Anthropology to Understand Food Loss in the American Food System. Retrieved April 25, 2012, from AgMRC: http://www.agmrc.org/markets__industries/food/convenience_stores.cfm

Just Food. (2011). Take Action! Retrieved April 9, 2012, from Just Food: <http://www.justfood.ca/members.php>

Kaysen, R. (2012, March 27). Food Start-Ups Find a Home in Brooklyn. The New York Times, pp. http://www.nytimes.com/2012/03/28/business/food-start-ups-flock-to-old-pfizer-factory-in-brooklyn.html?_r=1.

Klemperer, J. (2009, February 5). Restaurant Supported Agriculture. Retrieved 2012, from The Slow Food USA Blog.

Koullias, S. (2012, March 30). Western Queens Compost Initiative. (E. Joiner, Interviewer)
Local Food Hub. (2010). How We Work with Farmers. Retrieved April 8, 2012, from Local Food Hub: www.localfoodhub.org/our-farmers/how-we-work-with-farmers/

Local Food Hub: About Us. (2010). About Us. Retrieved April 25, 2012, from Local Food Hub: <http://localfoodhub.org/about/mission/>

Mad River Food Hub. (2012). About . Retrieved March 2012, from Mad River Food Hub: <http://madriv-erfoodhub.com/>

Market Ventures, Inc. (2007). A Study on Development of New York City's Wholesale Farmers' Market.

Muth, M. K., Karns, S. A., Nielsen, S. J., Buzby, J. C., & Wells, H. F. (2011, January). Consumer-Level Food Loss Estimates and Their Use in the ERS Loss-Adjusted Food Availability Data. Retrieved April 9, 2012, from USDA Economic Research Service: <http://www.ers.usda.gov/Publications/TB1927/>

National Agricultural Library: CSA. (2012). Community Supported Agriculture Definition. Retrieved April 10, 2012, from National Agricultural Library: <http://www.nal.usda.gov/afsic/pubs/csa/csa.shtml>

National Agriculture Library: Small Farms. (2012). Small Farms Definition. Retrieved 2012, from Agricultural Thesaurus: <http://lod.nal.usda.gov/nalt/39551>

NJAS. (n.d.). Farmers Against Hunger. Retrieved April 25, 2012, from New Jersey Agricultural Society: <http://www.njagsociety.org/fah/>

NJDA. (2011). Annual Report and Agricultural Statistics 2011. Retrieved April 1, 2012, from New Jersey Department of Agriculture: http://www.nj.gov/agriculture/pdf/2011_Annual_Report.pdf

NJDEP. (2012). Geographic Information Service. Retrieved March 3, 2012, from New Jersey Department of Environmental Protection: <http://www.nj.gov/dep/gis/index.html>

Nurin, T. (2011, July 7). Farmer's Market on Wheels. Retrieved March 23, 2012, from The Philadelphia Inquirer: http://articles.philly.com/2011-07-07/news/29747222_1_mobile-market-food-stamps-north-camden

Palassio, C. (2011). The Stop Community Food Centre. Retrieved February 13, 2012, from Community Knowledge Centre: Toronto Community Foundation: <http://ckc.tcf.ca/org/stop-community-food-centre>

Phat Beets Produce. (n.d.). The Beat Box CSA. Retrieved April 9, 2012, from Phat Beets Produce: <http://www.phatbeetsproduce.org/order-a-beet-box/>

Red Tomato. (2012, April 11). Our History. Retrieved from Red Tomato: <http://www.redtomato.org/ourhistory.php>

RU Community Development Food Studio. (2011). Urban Agriculture in New Brunswick. New Brunswick: Edward J. Bloustein School of Planning and Public Policy.

RU Community Development Studio. (2005). A Community Food Assessment of Trenton, New Jersey. Retrieved March 26, 2012, from <http://policy.rutgers.edu/rwv/education/2005/FoodStudioReport2005.pdf>.

Rutgers NJAES. (n.d.). Retrieved April 25, 2012, from Rutgers New Jersey Agricultural Experiment Station: <http://njaes.rutgers.edu/>

Sanders, B., & Shattuck, A. (2011). Cutting Through the Red Tape: A Resource Guide for Local Food Policy Practitioners & Organizers. Oakland, CA: Food First Books.

Schilling, B. J. (2011). The Economic Impact of New Jersey's Food System: A 2010 Update. New Brunswick, NJ: Department of Agricultural, Food and Resource Economics, Rutgers, The State University of New Jersey.

Scully, T. (2009, November 2). Commercial Kitchen Project: Processing Small Farm Food into Value-Added Products. Country Folks Grower.

Scully, T. (2010, December 15). Celentano Promoting Small Food Market in NJ. Retrieved 2012, from American Farm: <http://www.americanfarm.com/publications/the-new-jersey-farmer/381-celentano-promoting-small-food-market-in-nj>

Sustain. (2009). Building a Sustainable Community Food Hub. Retrieved February 2012, from Sustain: The Alliance for Better Food and Farming: http://www.sustainweb.org/pdf/Building_Sustainable_Community_Food_Hub.pdf

Swedson, D. (2008, March). Economic Impact Summaries covering Black Hawk County Region. Retrieved from University of Northern Iowa Center for Energy and Environmental Education.

Swenson, D., Eathington, L., & Chase, C. (2007, March). Determining the Methods for Measuring the Economic and Fiscal Impacts Associated with Organic Crop Conversion in Iowa. Retrieved March 2012, from Aldo Leopold Center for Sustainable Agriculture, Iowa State University: <http://www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2007-03-determining-methods-measuring-economic-and-fiscal-impacts-association-organic-crop-conversion-iowa.pdf>

Tenore, L. (2011, October 14). Senior Buyer for Rutgers Dining Services. (H. Kidambe, R. Lieb, & D. Nguyen, Interviewers)

COMMUNITY FOOD SECURITY AND ECONOMIC DEVELOPMENT

The Common Market. (2008). The Common Market Feasibility Study. Retrieved February 27, 2012, from The Common Market: <http://www.ngfn.org/resources/ngfndatabase/knowledge/Common%20Market%20Feasibility%20Study.pdf>

The Intersect Fund. (2012). About Us. Retrieved April 25, 2012, from The Intersect Fund: <http://intersectfund.org/section/for/8>

The New Farm. (2008). Homepage. Retrieved February 22, 2012, from The New Farm: <http://www.thenewfarm.ca/>

The Stop: After School. (n.d.). After School Program and Summer Camp. Retrieved April 9, 2012, from The Stop Community Food Centre: <http://thestop.org/after-school-program-summer-camp>

The Stop: Community Action. (n.d.). Community Action. Retrieved April 9, 2012, from The Stop Community Food Centre: <http://thestop.org/community-action>

The Stop: Community Cooking. (n.d.). Community Cooking. Retrieved April 13, 2012, from The Stop Community Food Centre: <http://thestop.org/positive-parenting-with-food>

The Stop: Compost. (2011). Greenhouse and Compost Demonstration Centre. Retrieved March 15, 2012, from The Stop Community Food Centre: <http://thestop.org/greenhouse-compose-demonstration-centre>

The Stop: Grow. (n.d.). Grow for The Stop. Retrieved February 12, 2012, from The Stop Community Food Centre: <http://www.thestop.org/grow-for-the-stop>

The Stop: Holiday Menue. (2011). Holiday Menue. Retrieved February 13, 2012, from The Stop Community Food Centre: <http://thestop.org/catering/menus/bbq>

The Stop: Mission. (n.d.). Mission. Retrieved February 21, 2012, from The Stop Community Food Centre: <http://thestop.org/mission>

The Stop: Why. (2011). Why the Stop Matters: 2011 Annual Report. Retrieved February 18, 2012, from The Stop Community Food Centre: http://thestop.org/sites/thestop.org/files/annual-reports/the_stop_2011_annual_report.pdf

The Wedge Natural Foods Co-op. (2012, April 11). History. Retrieved from The Wedge: <http://www.wedge.coop/history/>

Tri-County Cooperative Auction. (n.d.). Retrieved from Tri-County Cooperative Auction: <http://tricitycoop.net/>

University of Florida - IFAS Extension. (1999, July). Success of the New North Florida Cooperative: A Progress Report on Producer Direct Sales to School Districts. Small Farmer Success Story, p. http://smallfarms.ifas.ufl.edu/planning_and_management/pdf/SuccessNo4.pdf.

USDA. (2009, February). 2007 Census of Agriculture: New Jersey State and County Data. Retrieved March 5, 2012, from United States Department of Agriculture: http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/New_Jersey/index.asp.

USDA: Food Deserts. (n.d.). Food Deserts. Retrieved March 2012, from United States Department of Agriculture: <http://apps.ams.usda.gov/fooddeserts/foodDeserts.aspx>

USDA: Food Hubs. (2011, June 20). Food Hubs: Building Stronger Infrastructure for Small and Mid-Sized Producers. Retrieved February 2012, from USDA: Agricultural Marketing Service: <http://www.ams.usda.gov/AMSV1.0/foodhubs>

USDA: Food Recovery. (n.d.). A Citizen's Guide to Food Recovery. Retrieved April 13, 2012, from USDA - Food Recovery and Gleaning Initiative: <http://www.usda.gov/news/pubs/gleaning/content.htm>

USDA: NASS. (2011). Agricultural Statistics 2009. Retrieved April 18, 2012, from USDA: National Agricultural Statistics Service: http://www.nass.usda.gov/Statistics_by_State/New_Jersey/Publications/Annual_Statistical_Bulletin/index.asp

USDA: Overcoming Barriers. (2012, February 24). SAFSF Presentation: Regional Food Hubs - One Solution for Overcoming Barriers for Local Producers. Retrieved 2012, from USDA Agricultural Marketing Service: <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5097265>

USDA: Regional Distribution Solution. (2011, June 22). SAFSF Presentation: Food Hubs, Viable Regional Distribution Solutions. Retrieved February 2012, from USDA Agricultural Marketing Service: <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5091774>

USDA: Regional Food Hubs. (2011, August 8). SAFSF Presentation: Regional Food Hubs - Linking Producers to New Markets. Retrieved April 13, 2012, from USDA Agricultural Marketing Service: <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5097380>

USDA: State Fact Sheets. (2012, January 12). State Fact Sheets: New York. Retrieved March 2012, from USDA Economic Research Service: <http://www.ers.usda.gov/statefacts/NY.HTM>

USDA: Value Added Grant. (2011, February 23). Federal Register - Value Added Produce Grant Program. Retrieved from United States Department of Agriculture: Rural Business - Cooperative Service and Rural Utility Service: <http://www.gpo.gov/fdsys/pkg/FR-2011-02-23/pdf/2011-3036.pdf>

Veritable Vegetable. (n.d.). We Move Food. Retrieved April 8, 2012, from Veritable Vegetable: <http://www.veritablevegetable.com/moving-food>

Viggiano, T., & Viggiano, P. (2012, February 14). First Field. (M. Azzarello, A. Capesce, M. Cassidy, L. Chamberlain, B. Faust, S. Franklin, et al., Interviewers)

Wallace Center. (n.d.). Food Hub Map. Retrieved March 2012, from Wallace Center: <http://ngfn.org/resources/food-hubs/food-hubs#us-food-hubs-map>

Weissenbuehler, L. (2012, April 11). About. Retrieved from Oklahoma Food Cooperative: <http://www.oklahomafood.coop/welcome.php>

WQCI. (n.d.). Western Queens Compost Initiative. Retrieved March 15, 2012, from Build it Green! NYC: <http://www.bignyc.org/western-queens-compost-initiative>

IMAGE CREDITS

Cover: Angelanoel. (2007). Tomatos. Retrieved February 2012, from <http://www.flickr.com/photos/anleese/497461681/>

p. 5: Newman, K. (2011). Rosie's Farm Stand. Retrieved May 2012

p. 7: RU Community Economic Development Studio: Food Hubs. (2012). Core Food Hub Functions Graphic

p. 8: Newman, K. (2011). Jersey Fresh Branding. Retrieved May 2012

p. 9: Newman, K. (2012). FIC Distribution. Retrieved May 2012

p. 11: Newman, K. (2012). FIC Bottling. Retrieved May 2012

p. 12: Newman, K. (2012). FIC Storage. Retrieved May 2012

p. 16: RU Community Economic Development Studio: Food Hubs. (2012). Components of a Community Food Hub Graphic

p. 17: Reinhard, R. (2009). DC Central Kitchen training program: Bread for the World. Retrieved May 2012, from: <http://www.flickr.com/photos/breadfortheworld/4131261667/>

p. 19: Newman, K. (2011). Souper Van Food Truck. Retrieved May 2012

p. 23: RU Community Economic Development Studio: Food Hubs. (2012). New Jersey Food Industry Output 2007 Graph

p. 23: RU Community Economic Development Studio: Food Hubs. (2012). New Jersey Agriculture Cash Receipts 2010 Graph

p. 24: RU Community Economic Development Studio: Food Hubs. (2012). Size of Farms in New Jersey Graph

p. 24: RU Community Economic Development Studio: Food Hubs. (2012). Typical Distribution Model Graphic. Recreated from Illinois Department of Commerce and Economic Opportunity (2012); Building Successful Food Hubs: A Business Planning Guide for Aggregating and Processing Local Food in Illinois.

p. 25: RU Community Economic Development Studio: Food Hubs. (2012). Agricultural Land Use within Driving Distance of New Brunswick, NJ Map

p. 28: Newman, K. (2011). First Field. Retrieved May 2012

p. 29: Newman, K. (2012). A Better World Café. Retrieved May 2012

p. 30: Newman, K. (2012). Chard at RU Student Farm. Retrieved May 2012